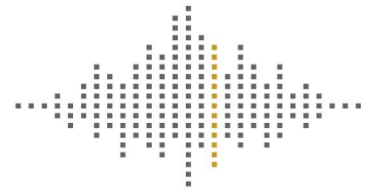


# SHARPS REDMORE

ACOUSTIC CONSULTANTS ▪ Established 1990



## Report 3

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### Radcliffe Civic Hub

Freak Dance temporary relocation

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**Date** 19th September 2022

**Project No** 2120733

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This report has been prepared with all reasonable skill, care and diligence commensurate with an acoustic consultancy practice under the terms and brief agreed with our client at that time. Sharps Redmore provides no duty or responsibility whatsoever to any third party who relies upon its content, recommendations or conclusions.

## **1.0 Introduction**

Sharps Redmore (SR) have been instructed by Bury Council to provide an acoustic review of the proposed temporary relocation of an existing dance studio in Radcliffe.

As part of the Radcliffe Civic Hub development, temporary buildings will be provided to accommodate 'Freak Dance' who are to be decanted from their existing premises prior to demolition for circa 48 weeks. Once the new building is complete, the dance company will be relocated within the new Civic Hub.

The temporary buildings will be situated about 250 m to the south-east of the current site on a car park adjacent to Stand Lane and Irwell Street.

The Local Planning Authority (LPA) requires an acoustic assessment to be undertaken to determine the noise impact of dance classes which operate between 09:00-21:00 hours Monday-Friday, 09:00-18:00 on Saturdays (they do not operate on Sundays).

This report details a noise survey of the existing noise climate around the site, the calculated sound insulation performance of the temporary buildings and an assessment of noise emissions from the dance activities.

## 2.0 Assessment criteria

Comments on criteria for the project have been received from Rob Hall, Environmental Health Officer at Bury Council, who commented that the assessment should be done following *BS 4142 – methods for rating and assessing industrial and commercial sound*.

We note that *BS 4142:2014* specifically states in the scope section (p1) that *'The standard is not intended to be applied to the rating and assessment of...music and other entertainment'*.

It is understood from previous projects in the Bury area that there are no specific criteria for entertainment noise within Local Planning Guidance.

As such SR proposed that guidance from Manchester City Council forms the basis of the approach. This has been used on similar recent assessments submitted to the LPA in Bury.

The *Manchester City Council Planning & Noise Technical Guidance* (December 2015) states the following for new entertainment venues to demonstrate that music noise from the development is not audible:

*'Entertainment noise ( $L_{Aeq}$ ) should be controlled to 10 dB below the background noise level ( $L_{A90}$ ) without the entertainment noise present, in each octave band at the nearest noise-sensitive location.'*

Further to the above, the guidance also provides criteria for appropriate noise levels for entertainment noise within bedrooms, which would achieve a condition of 'inaudible' or 'virtually inaudible'. The guidance states:

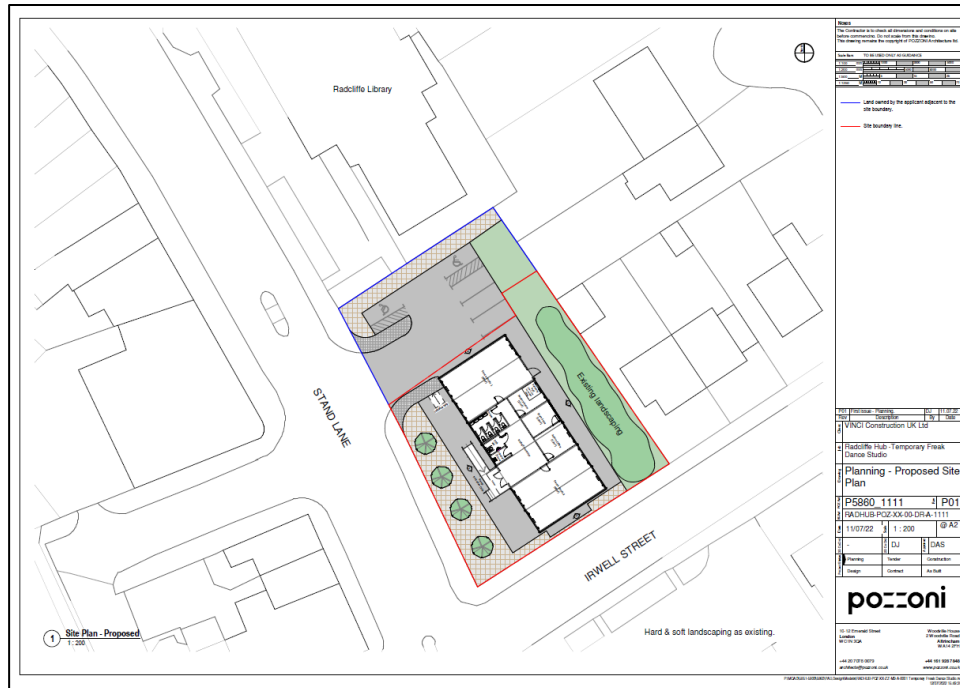
*'Music noise levels in the 63 Hz and 125 Hz octave centre frequency bands ( $L_{eq}$ ) should be controlled so as not to exceed (in habitable rooms) 47 dB and 41 dB ( $L_{eq}$ ) respectively.'*

This will be calculated based on a partially open window condition at the nearest residential receptor window.

### 3.0 Noise Survey

The temporary building location is proposed as shown in Figure 1:

### Figure 1 – Proposed building location



To establish existing noise levels an environmental noise survey was undertaken by Sharps Redmore on Wednesday 14th September 2022.

The monitoring locations were chosen to represent the existing residential properties around the site.

The site was accessible to the public as a car park at the time of the survey and therefore the opportunity to gather representative noise levels was limited to sample measurements at representative periods of the proposed operations to include daytime and late evening periods.

The measurement locations are shown in Figure 2 ahead, with the positions noted as follows:

- Position 1 – residential semi-detached houses.
- Position 2 – Commercial ground floor, residential apartment at first floor.
- Position 3 - Derelict Pubic House with fire damage – unoccupied at the time of survey.
- Position 4 - Residential apartment block.

**Figure 2 – Noise survey locations**



Measurements were taken using a Brüel & Kjær Type 2260 type 1 precision sound level meter which was field-checked for calibration before and after the survey with no drift was noted.

Measurements were made in third-octave bands simultaneously using consecutive 5-minute sample periods.

Weather conditions were suitable for taking noise measurements.

Details of the survey results are summarised in this section and measurement data is appended to this report.

The data was used to establish daytime average values ( $L_{Aeq}$ ) as well as the typical background sound level ( $L_{A90}$ ) representative of the nearest noise-sensitive properties for music emissions assessment purposes.

Table 1 summarises the lowest octave-band  $L_{90}$  spectra derived from measurements taken during the survey at each position. Those measured at Position 1 constitute the worst-case condition given that this is the closest to the proposed development and also have the lowest existing background noise levels measured.

**Table 1: Minimum L<sub>A90</sub> values and associated spectra**

| Position | Time  | Lowest<br>L <sub>A90</sub> dB | Lowest L <sub>90</sub> dB octave band centre frequency |        |        |        |       |       |       |       |
|----------|-------|-------------------------------|--------------------------------------------------------|--------|--------|--------|-------|-------|-------|-------|
|          |       |                               | 63 Hz                                                  | 125 Hz | 250 Hz | 500 Hz | 1 kHz | 2 kHz | 4 kHz | 8 kHz |
| 1        | 20:46 | 46                            | 53                                                     | 47     | 44     | 42     | 42    | 37    | 28    | 17    |
| 2        | 15:46 | 50                            | 55                                                     | 49     | 48     | 44     | 46    | 40    | 32    | 22    |
| 3        | 15:01 | 57                            | 61                                                     | 56     | 54     | 51     | 52    | 48    | 41    | 33    |
| 4        | 15:23 | 53                            | 60                                                     | 54     | 49     | 48     | 49    | 43    | 35    | 25    |

For information purposes:

- dBA is the sound level in decibels (dB) measured by the sound level meter with the A-weighting. The A-weighting is a filter applied to the sound level meter to simulate the frequency response of the human ear, which is more sensitive to high frequency sound than low.
- L<sub>eq</sub> is the equivalent continuous noise level which is a method of averaging the varying noise level over the time period into a single figure value. The L<sub>eq</sub> has the same sound energy as the fluctuating level over that period.
- L<sub>90</sub> is the noise level exceeded for 90% of the time and is referred to as the background noise level.

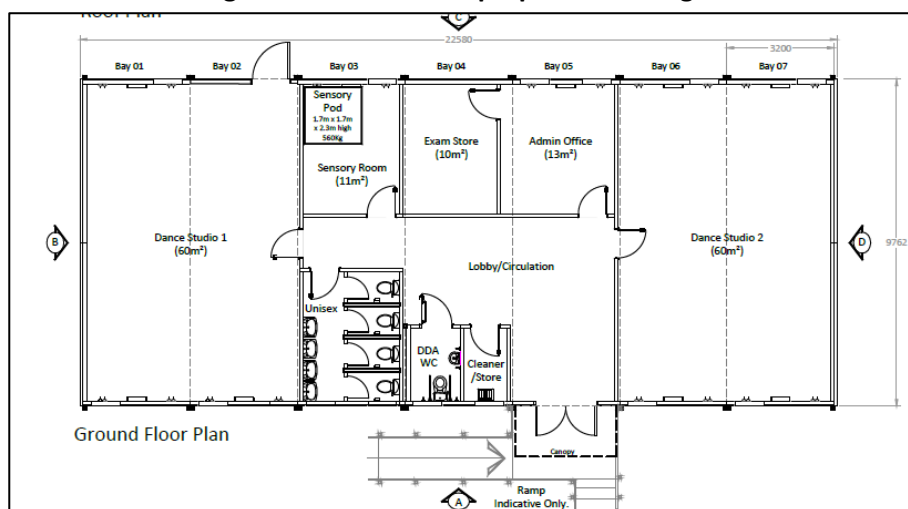
## 4.0 Construction details of temporary buildings

The temporary building is to be formed by modular units provided by Wernick Hire. Vinci Construction UK Limited (the main Contractor) have provided details of the unit constructions for assessment purposes.

The modular nature of the units mean that on-site measurements of sound insulation cannot be undertaken prior to the units being assembled at the proposed site as the individual elements would not form an enclosure suitable for testing.

A plan view of the proposed building is shown in Figure 3 for information.

**Figure 3 – Plan view of proposed building**



The constructions are to be as follows:

### 4.1 External Wall

Composite wall panels consisting of:

- Plastisol coated steel profile 0.6mm thickness.
- Steel frame with Kingspan 100mm insulation.
- Internal lining of 12.5mm plasterboard.

### 4.2 Roof

- Plastisol coated steel profile 1.5mm thickness.
- Structural steel frame with Kingspan 100mm insulation.
- Plasterboard 12.5mm ceiling.

### 4.3 Windows

- Double glazed units 4mm glass-20mm air gap-4mm glass.

### 4.4 External doors

- Metador 'defender' steel doorset with 45mm thick door leaf.

## 5.0 Assessment of noise emissions

The assessment has been undertaken on the basis of closed windows and external doors at the temporary Freak Dance building during studio use with music.

The sound insulation of the building has been calculated using Insul 9 proprietary sound insulation calculation software.

The noise limits in Table 2 can be generated in the studios based on 1-hour  $L_{eq}$  levels and are calculated to be compliant with the criteria in Section 2.

**Table 2 – Noise limits by studio**

| Studio | $L_{eq, 1-hour}$ dB octave band centre frequency Hz |        |        |        |       |       |       |
|--------|-----------------------------------------------------|--------|--------|--------|-------|-------|-------|
|        | 63 Hz                                               | 125 Hz | 250 Hz | 500 Hz | 1 kHz | 2 kHz | 4 kHz |
| North  | 80                                                  | 74     | 76     | 80     | 79    | 75    | 66    |
| South  | 78                                                  | 72     | 76     | 81     | 86    | 82    | 77    |

These limits are for all noise sources including amplified and unamplified music and speech. The sound systems should have noise limiting systems which cannot be manually overridden and should be calibrated prior to operation based on the noise limits ahead.

The levels in the north studio are limited to a lower level due to the external door, should higher levels be desirable then an enhanced door such as the Metador Soundguard Level 3 door or equivalent should be used (rated at  $R_w$  39 dB minimum).

It should be noted that these limits are relatively low and will require management and limiting of the noise levels in the studios.

## 6.0 Conclusions

SR have undertaken an assessment of the temporary building proposed for use by Freak Dance, Radcliffe.

Proposed criteria for noise emissions have been proposed based on the *Manchester City Council Planning & Noise Technical Guidance* (December 2015) to limit octave band  $L_{eq}$  noise emissions to be 10 dB below the typical  $L_{90}$  during operational periods.

The noise limits that the building will permit have been calculated for each of the two studios.

These limits will need to be met by a combination of management and noise limiters to amplification systems during the operations.

Provided these measures are enacted noise emissions from the building should be in line with the criteria proposed which would be a suitable method for protecting the amenity of nearby residences during operations.

## **Appendix**

### **Noise survey data**

**Table 3 – Noise survey data. 14th September 2022. Corrected to the nearest decibel.  
Free-field measurement conditions. Third-octave band data omitted for brevity but  
retained on file.**

| Measurement position | Time  | L <sub>Aeq</sub> dB | L <sub>A90</sub> dB |
|----------------------|-------|---------------------|---------------------|
| 1                    | 14:43 | 55                  | 51                  |
| 1                    | 14:48 | 54                  | 50                  |
| 1                    | 14:53 | 56                  | 50                  |
| 3                    | 15:01 | 70                  | 57                  |
| 3                    | 15:07 | 69                  | 59                  |
| 3                    | 15:12 | 70                  | 58                  |
| 4                    | 15:17 | 70                  | 56                  |
| 4                    | 15:23 | 69                  | 53                  |
| 4                    | 15:28 | 71                  | 59                  |
| 2                    | 15:41 | 55                  | 51                  |
| 2                    | 15:46 | 57                  | 50                  |
| 2                    | 15:51 | 55                  | 51                  |
| 1                    | 19:41 | 63                  | 50                  |
| 1                    | 19:46 | 59                  | 53                  |
| 1                    | 19:51 | 55                  | 49                  |
| 1                    | 19:56 | 60                  | 52                  |
| 1                    | 20:01 | 60                  | 51                  |
| 1                    | 20:06 | 61                  | 50                  |
| 1                    | 20:11 | 56                  | 48                  |
| 1                    | 20:16 | 57                  | 50                  |
| 1                    | 20:21 | 57                  | 47                  |
| 1                    | 20:26 | 59                  | 47                  |
| 1                    | 20:31 | 56                  | 50                  |
| 1                    | 20:36 | 57                  | 47                  |
| 1                    | 20:41 | 57                  | 47                  |
| 1                    | 20:46 | 56                  | 46                  |
| 1                    | 20:51 | 58                  | 47                  |
| 1                    | 20:56 | 57                  | 50                  |