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Marc Silcock
Kamani Property
49/51 Dale Street
Manchester
M1 2HF

Our ref: P18-324-L03v1
5 November 2020

By email only: marc@kamaniproperty.com

Dear Marc,

**Re: 14 Chorlton Street, Manchester**
**Verification Noise Assessment re. Planning Condition 9**

Following our recent contact, I am writing with the findings of our recent compliance noise measurements in connection with the requirements of planning condition 9.

Planning consent ref. 117371/FO/2017 includes two noise-related conditions as follows:

> *9) The development hereby approved shall be carried out in accordance with the recommendations within the submitted letter from KP Acoustics Ltd. dated 23 March 2018 and referenced 16627.180323.L1 Rev A.*
>
> *Upon completion of the development and before the new use becomes operational, a verification report will be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report. The report shall also undertake post completion testing to confirm that above criteria is met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the noise criteria. This shall include monitoring in the completed flats when the nightclub is trading to confirm the internal levels are being achieved (including the 63 and 125 Hz octave bands).*

The verification noise assessment has been hampered by the ongoing COVID-19 lockdown and restrictions. The adjoining Eagle nightclub has been closed for most of 2020 and we understand that it will remain closed indefinitely and certainly beyond the end of the new four-week lockdown that came into force on 5 November 2020. We understand that the client has sought co-operation from the Eagle management to facilitate testing for the purposes of this verification assessment, but this was refused. For this reason, it has not been (and will not be) possible to measure the extent of any nightclub noise transmission into adjoining completed apartments. As such, for the purposes of this verification assessment, we have instead revisited the findings of our noise measurements that were carried out in the most exposed basement rooms as part of the design phase for the development.

We have however carried out noise measurements of external noise ingress (i.e. from road traffic etc.) inside two practically complete apartment bedrooms (one on each of the Bloom Street and Chorlton Street elevations) to establish the resulting levels of external noise ingress.

**Music Noise Transmission from Eagle Nightclub through Party Wall**

The KP Acoustics report ref 16627.180323.L1 RevA referenced in the planning condition details the noise control criteria of Manchester City Council in respect of music noise transmission from the adjacent Eagle nightclub. The criteria are as follows:

> "Noise in the 63 and 125 Hz octaves will be controlled to 47 and 41 dB respectively"

These criteria are understood to apply to habitable rooms and more specifically to bedrooms.

Hepworth Acoustics carried out some attended noise measurements in the basement area (with the brick-vaulted ceiling) immediately adjoining the Eagle nightclub basement demise during the period 23:00 – 01:00 hours on Thursday 19/Friday 20 July 2018. There was an advertised club night underway at the Eagle nightclub (which commenced at 22:00 hours) during the measurements. The measurements were carried out using a Rion NL52 'Type 1' sound analyser (serial no. 00242747) that was calibrated before and after the measurements with no variance noted. The sound level meter was tripod mounted at approximately 1.4m above floor level and at several different locations within the room over the course of the measurements.

During the period of the noise measurements, music noise transmission from the adjacent nightclub was just audible at a very low level. There was also occasional break-in of transient noise events due to pedestrians and road traffic on Bloom Street via the windows elsewhere at basement level and via the doorway adjoining what will be the lift area).

The measurements comprised a series of short-term periods (typically 30 – 60s in duration). Many were carried out with a consultant present alongside the sound level meter, with some further automatic measurements taken with the consultant outside the room (so as to facilitate measurements over a longer period without extraneous noise).

The measurements were taken in terms of third octave band $L_{eq}$ values which have been subsequently used to determine corresponding octave band values to allow comparison with the Manchester City Council criteria.

The noise levels measured with a consultant present in the basement room are summarised in Table A1 (enclosed), with the values at in the 63 Hz and 125 Hz octave bands shown alongside the overall A-weighted noise level. The corresponding measured values measured automatically are shown in Table A2 (also enclosed). Where the relevant Manchester City Council criteria was exceeded, the value is marked red.

As can be seen in Table 1, there were a small number of instances when the consultant was present where the Manchester City Council criterion at 63 Hz was exceeded, typically by up to 3 dB and by 5 dB at most. To put this into context, under normal circumstances a 3dB change in noise is the minimum perceptible.

The criterion at 125 Hz was not exceeded during any attended measurements and the corresponding overall A-weighted noise levels were also comfortably within the 30 dB $L_{Aeq}$ limit as set out in BS 8233: 2014 for bedrooms at night.

Table 2 shows that, during the automatic measurements, the 63 Hz criterion was only exceeded once and by 1 dB. All other criteria were met for all periods.

The noise measurements therefore indicate that, even in the most exposed room within 14 Chorlton Street, transmitted music noise levels from the adjacent basement nightclub are generally within or only marginally above the Manchester City Council noise control criteria.

However, the nearest habitable room to the separating wall with the basement Eagle nightclub is either at basement level on the far side of the cycle store (with the cycle store acting as a buffer), or sharing a flanking wall with the Eagle but at first floor level, hence two levels above the brick-vaulted ceiling basement room. In our view it is highly unlikely that music noise transmission through the party wall will approach or exceed the Manchester City Council noise criteria in the nearest habitable rooms.

On this basis, and given that it has not been possible (and will not be possible for the foreseeable future) to verify further the achieved sound insulation by measurement during nightclub operations, we consider that it would be reasonable for Manchester City Council to discharge the planning condition on the basis of the above.

**External Noise Ingress**

Construction and fit-out work at the site is continuing, with only a small number of apartments close to full completion with secondary glazing installed, etc. Nevertheless, two apartments are sufficiently close to completion that noise measurements have been possible in a bedroom overlooking Bloom Street (apartment 5) and a bedroom overlooking Chorlton Street (apartment 6).

Due to temporary noise from the on-going construction work in the building during the daytime, noise measurements were taken from 19:00 through until 07:00 the following morning so as to be outside the working period on the site. Measurements were taken between 19:00 on 3 November 2020 and 07:00 on 4 November 2020 and so were taken in advance of the national COVID-19 lockdown that came into force on 5 November.

The noise measurements were intended to determine whether the ingress of external noise will be controlled to be within 35 dB $L_{Aeq}$ during daytime/evening periods and within 30 dB $L_{Aeq}$ and generally within 45 dB $L_{AFmax}$ at night. In addition, octave band analysis has allowed assessment of compliance with the 47 dB and 41 dB noise criteria in the 63 Hz and 125 Hz octave bands respectively.

The noise measurments were taken in five-minute periods using a B&K 2260 'Type 1' sound analyser (serial no. 20467016) and a Rion NL52 'Class 1' sound analyser (serial no. 00242747). Both analysers were check calibrated before and after the measurements with no variance noted. The measurements were taken at 1.4m above floor level in the centre of the unfurnished and empty bedrooms.

The measured values are shown in Charts 1 and 2 (enclosed). The corresponding evening (i.e. 19:00 – 23:00) and night-time (23:00 – 07:00) $L_{Aeq}$ noise levels, and the tenth highest night-time $L_{AFmax}$ value were as follows:

**Table 1: Summary of measured noise levels (dB)**

| Room | Evening (19:00 – 23:00) | Night-time (23:00 – 07:00) | |
|---|---|---|---|
| | $L_{Aeq}$ | $L_{Aeq}$ | 10th highest $L_{AFmax}$ |
| Apartment 5 bedroom (Bloom St) | 27 | 25 | 45 |
| Apartment 6 bedroom (Chorlton St) | 27 | 27 | 40 |

All values shown in Table 1 are within the noise control criteria.

The measured $L_{eq}$ levels in the 63 Hz and 125 Hz octave bands are shown in Charts 3 and 4 (enclosed). These indicate that, in general, noise levels were well within the 47 dB and 41 dB criteria, including during the evening period.

It is however important to note that during the measurements the bedrooms were empty and unfurnished such that the reverberation times were significantly higher than will be the case once the rooms are furnished and occupied. Reverberation time measurements were therefore taken in each of the bedrooms to allow the measured noise levels to be adjusted to take into account the difference between the current reverberation times and those that would be expected upon occupation of the rooms.

The measured reverberation times in each of the bedrooms, along with the example reverberation times set out in BS 8233 for a typical furnished room are shown in Table 2:

**Table 2: Measured reverberation times (s)**

| Location | Octave Band Centre Frequency (Hz) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 63 | 125 | 250 | 500 | 1k | 2k | 4k |
| BS 8233 example values for furnished room | 0.60 | 0.51 | 0.40 | 0.35 | 0.35 | 0.38 | 0.40 |
| Measured values in Apartment 5 bedroom | 0.70 | 0.66 | 1.12 | 1.24 | 0.97 | 0.71 | 0.68 |
| Measured values in Apartment 6 bedroom | 0.75 | 0.91 | 1.29 | 1.50 | 1.34 | 1.10 | 1.02 |

The measured compliance noise levels, corrected for reverberation are as follows:

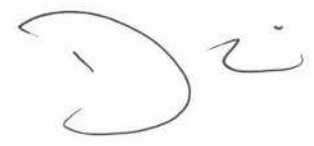
**Table 3: Summary of measured noise levels, corrected for excess reverberation (dB)**

| Room | Evening (19:00 – 23:00) | Night-time (23:00 – 07:00) | |
|---|---|---|---|
| | $L_{Aeq}$ | $L_{Aeq}$ | 10th highest $L_{AFmax}$ |
| Apartment 5 bedroom (Bloom St) | 25 | 23 | 42 |
| Apartment 6 bedroom (Chorlton St) | 25 | 23 | 38 |

It can therefore be seen that the measured noise levels, when corrected for excess reverberation, are well within the relevant criteria (by at least 5 dB in respect of $L_{Aeq}$ and at least 3 dB in terms of $L_{AFmax}$). The corresponding $L_{eq}$ values in the 63 Hz and 125 Hz octave bands also reduce by 1 – 2 dB such that the typical values are at least 3 – 5 dB within the relevant criteria.

On this basis, in spite of the ongoing COVID-19 restrictions, it is considered that the significant margin by which the adjusted noise levels achieve the relevant criteria mean that planning condition 9 can be discharged.

Yours sincerely,
For Hepworth Acoustics Ltd



Donald Quinn BSc FIOA
Managing Director

Encs.

**Table A1: Measured transmitted music noise levels in basement (in dB $L_{eq}$) – consultant present**

| Measurement start time (hh:mm) | Octave band centre frequency | | Overall A-weighted |
|---|---|---|---|
| | 63 Hz | 125 Hz | |
| 23:23 | 46 | 29 | 22 |
| 23:26 | 49 | 33 | 23 |
| 23:28 | 45 | 31 | 22 |
| 23:30 | 50 | 34 | 24 |
| 23:31 | 50 | 33 | 23 |
| 23:36 | 44 | 35 | 24 |
| 23:39 | 44 | 35 | 23 |
| 23:42 | 50 | 34 | 24 |
| 00:03 | 50 | 35 | 24 |
| 00:05 | 42 | 31 | 20 |
| 00:07 | 45 | 25 | 23 |
| 00:08 | 39 | 28 | 21 |
| 00:10 | 43 | 34 | 23 |
| 00:11 | 44 | 29 | 22 |
| 00:12 | 40 | 34 | 22 |
| 00:13 | 48 | 39 | 24 |
| 00:14 | 52 | 39 | 26 |
| 00:14 | 49 | 40 | 24 |
| 00:15 | 46 | 36 | 24 |
| 00:37 | 43 | 41 | 25 |
| 00:38 | 45 | 31 | 20 |
| 00:39 | 50 | 33 | 24 |
| 00:40 | 49 | 33 | 24 |
| 00:41 | 49 | 32 | 23 |
| 00:53 | 41 | 38 | 23 |
| 00:54 | 45 | 35 | 24 |
| 00:54 | 36 | 31 | 20 |
| 00:56 | 45 | 39 | 24 |

**Table A2: Measured transmitted music noise levels in basement (in dB $L_{eq}$) – automatic measurements**

| Measurement start time (hh:mm) | Octave band centre frequency | | Overall A-weighted |
|---|---|---|---|
| | 63 Hz | 125 Hz | |
| 23:46 | 45 | 34 | 22 |
| 23:47 | 46 | 35 | 23 |
| 23:48 | 44 | 35 | 23 |
| 23:49 | 43 | 36 | 27 |
| 23:50 | 43 | 37 | 23 |
| 23:51 | 45 | 38 | 23 |
| 23:52 | 44 | 36 | 22 |
| 23:53 | 46 | 37 | 23 |
| 23:54 | 45 | 32 | 24 |
| 23:55 | 42 | 31 | 20 |
| 23:56 | 46 | 33 | 21 |
| 23:57 | 43 | 34 | 21 |
| 23:58 | 45 | 36 | 26 |
| 23:59 | 41 | 33 | 21 |
| 00:00 | 42 | 35 | 22 |
| 00:01 | 43 | 33 | 23 |
| 00:18 | 44 | 35 | 22 |
| 00:19 | 45 | 36 | 22 |
| 00:20 | 48 | 36 | 26 |
| 00:21 | 45 | 36 | 22 |
| 00:22 | 44 | 36 | 22 |
| 00:23 | 45 | 35 | 28 |
| 00:24 | 46 | 33 | 23 |
| 00:25 | 44 | 36 | 26 |
| 00:26 | 44 | 32 | 21 |
| 00:27 | 45 | 32 | 21 |
| 00:28 | 41 | 31 | 20 |
| 00:29 | 42 | 32 | 20 |
| 00:30 | 44 | 33 | 22 |
| 00:31 | 43 | 34 | 22 |

| Measurement start time (hh:mm) | Octave band centre frequency | | Overall A-weighted |
|---|---|---|---|
| | 63 Hz | 125 Hz | |
| 00:44 | 46 | 33 | 21 |
| 00:45 | 39 | 31 | 19 |
| 00:46 | 40 | 35 | 22 |
| 00:47 | 40 | 35 | 25 |
| 00:48 | 42 | 36 | 26 |
| 00:49 | 40 | 35 | 21 |
| 00:50 | 43 | 35 | 22 |
| 00:51 | 45 | 36 | 23 |

Chart 1: Measured noise levels in Apartment 5 bedroom (Bloom Street elevation)

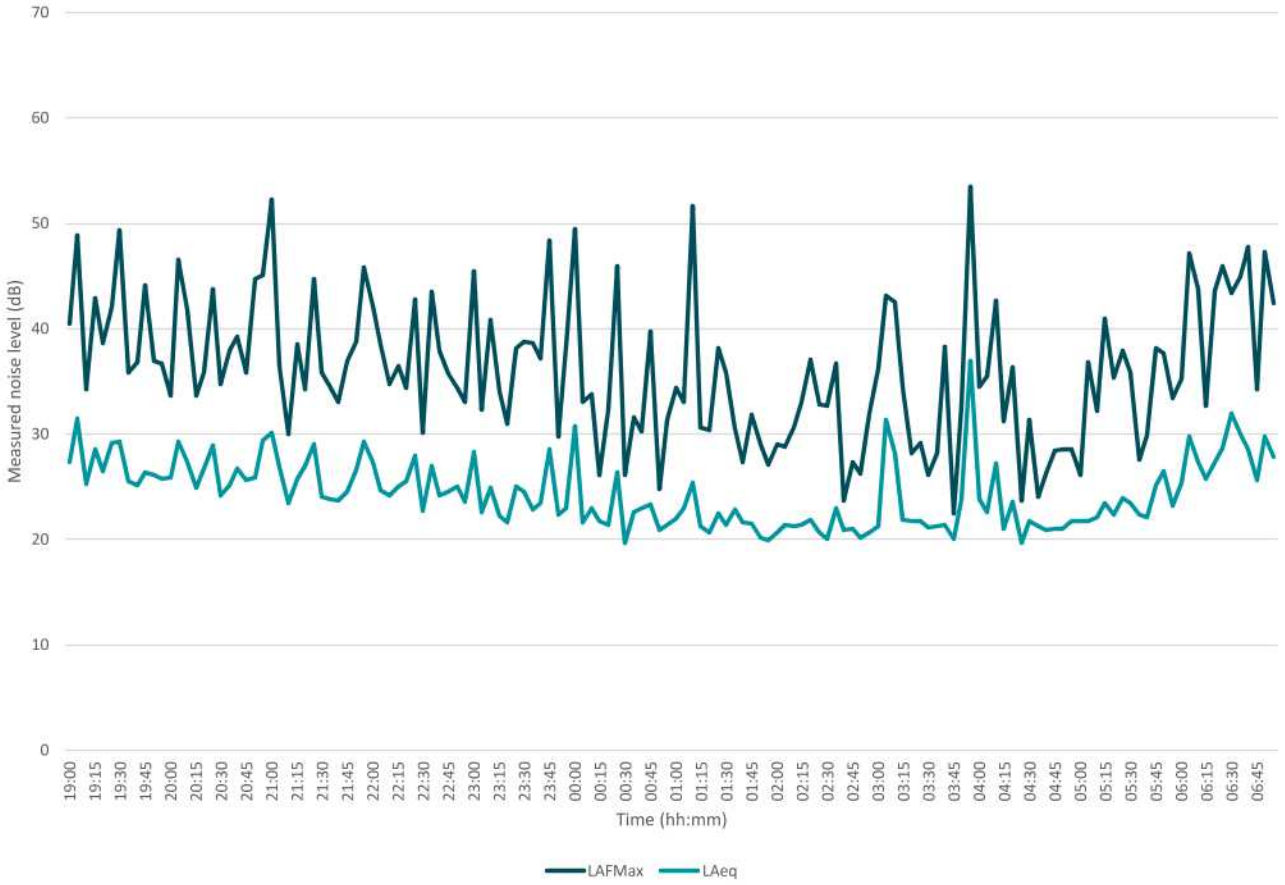



Chart 2: Measured noise levels in Apartment 6 bedroom (Chorlton Street elevation)

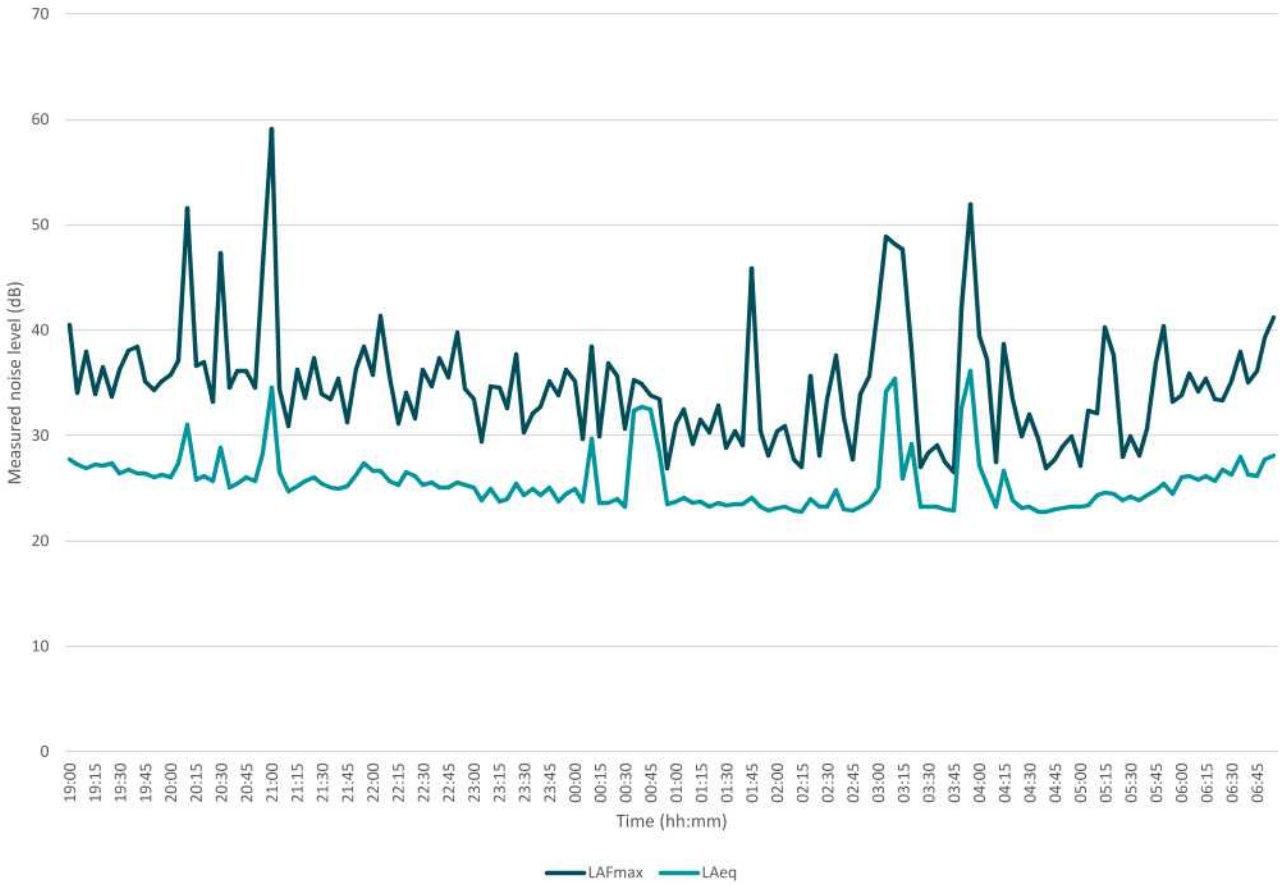


Chart 3: Measured 63 Hz & 125 Hz octave band $L_{eq}$ values in Apt 5 bedroom (Bloom St elevation)

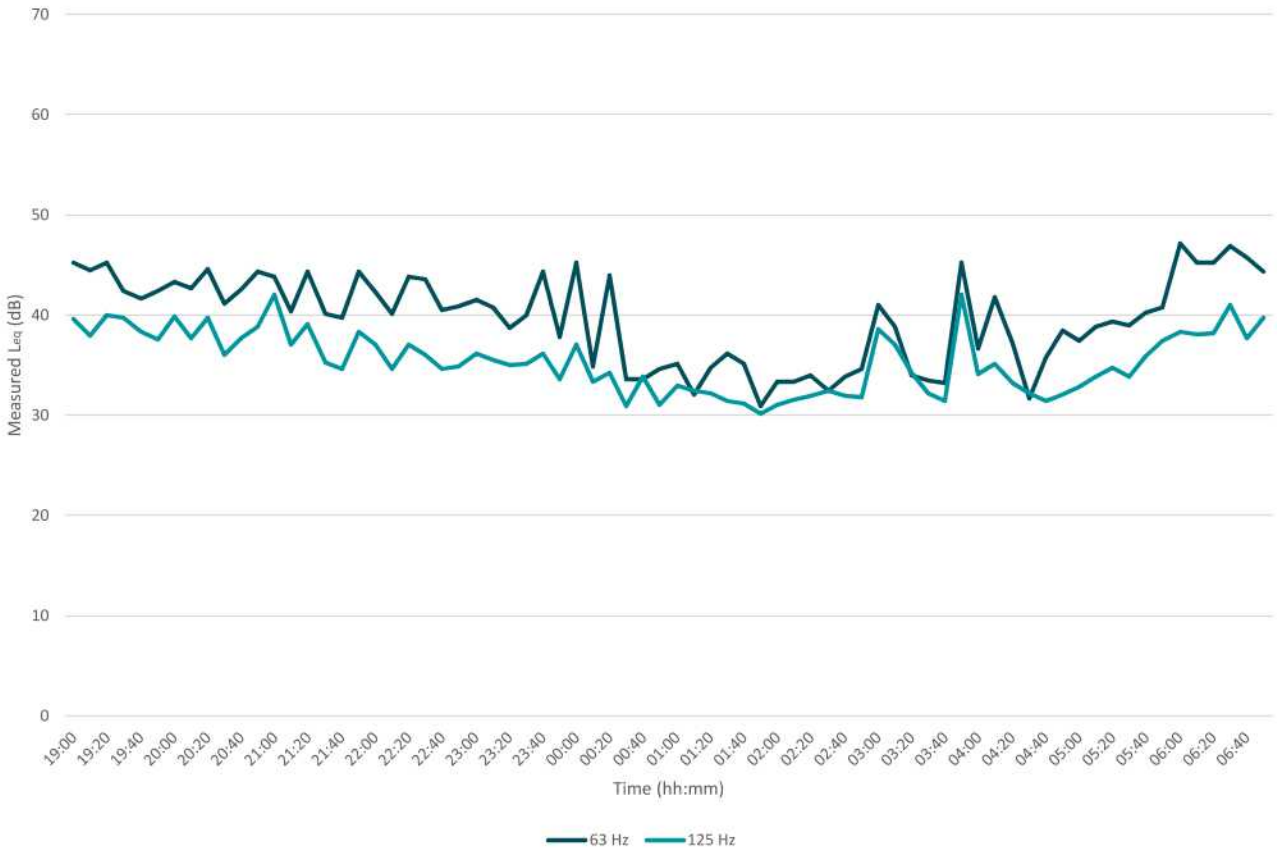



Chart 4: Measured 63 Hz & 125 Hz octave band $L_{eq}$ values in Apt 6 bedroom (Chorlton St elevation)

