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Nick Leggett

Mulbury City Ltd
3 Piccadilly Place
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Dear Nick,

BLOSSOM STREET – ANCO GYM MEZZANINE ACOUSTIC TESTING

Please see below a summary of the measurements made recently at the Anco Gym, Blossom St., Ancoats, Manchester.

ASSESSMENT CRITERIA

Planning Condition

Adequate control of noise from the gym is required to be demonstrated to discharge planning condition 7a and 7b, Item 7a relating to noise emissions from the gym is detailed in dBx Acoustics' letter ref 20065-L01a dated 16th June 2021 (although it is unknown if this has been submitted to the Local Authority and/or discharged). However, no demonstration that the impact sound requirements from Condition 7b (highlighted in yellow, below) have been achieved has yet been completed.

(b) The approved scheme shall be implemented and prior to the first use of commercial unit 1 as a gym, a verification report will be required to validate that the work undertaken conforms to the recommendations and requirements approved as part of part (a) of this planning condition. The verification report shall include post completion testing to confirm the noise criteria has been met which includes testing with free weights and measuring the resultant noise within the upper floor residential accommodation. In instances of non-conformity, these shall be detailed along with mitigation measures required to ensure compliance with the noise criteria. Any mitigation measures shall be implemented in accordance with a timescale to be agreed with the City Council, as Local Planning Authority, and thereafter retained and maintained in situ."

The measurements detailed within this letter report apply to part (b) only.

There are no clear criteria to be complied with within the condition. A discussion of the likely applicable criteria is therefore presented below.

MCC Planning and Noise Technical Guidance

Manchester City Council's (MCC) requirements for music noise are detailed in their guidance document "Planning & Noise - Technical Guidance", dated December 2015, as reproduced below:

"...a criterion that would achieve a condition of 'inaudible' / 'virtually inaudible' which is applicable for new residential developments that are structurally connected to entertainment venues (or vice versa) would be:

'Music noise levels in the 63Hz and 125Hz octave centre frequency bands (Leq) should be controlled so as not to exceed (in habitable rooms) 47dB and 41dB (Leq), respectively'.

These limits would therefore apply to music noise transfer into adjacent apartments.

Derivation of Appropriate Criteria

It should be noted that MCC provide no specific requirements in terms of the noise limits for impact sounds (free-weights/medicine balls etc.).

Impact sounds are individual events, which are usually assessed in terms of the maximum noise level, $dB_{L_{max}}$. Gym impact noise also usually contains a significant low frequency content. Although MCC's criteria for entertainment noise include low frequency limits, it is not clear whether this is directly applicable to this situation, and these criteria are in terms of the average noise levels, $dB_{L_{Aeq,T}}$.

At night, MCC's standard criterion is that "individual noise events should not normally exceed $45dB_{L_{Amax,F}}$ by more than 15 times". This is approximately equivalent to 1-2 events per hour. There are however no daytime maximum noise level criteria to achieve.

dBx Acoustics were informed that the gym will only operate in the daytime period (07:00-23:00h) only. However, based on Figure 1, below, it would appear that classes start at 06:30h. Assuming that the first class is at 06:30h,, the $45dB_{L_{Amax,F}}$ should not be exceeded more than once during the 30-minute period to 07:00h..

Figure 1 – Excerpt from emailed class timetable

6:30AM (45 MINS)	FULL BODY ✓	10 spaces left
7:30AM (45 MINS)	FULL BODY ✓	10 spaces left
12:15PM (45 MINS)	STRIKE TRAINING ✓	10 spaces left
5:15PM (45 MINS)	FULL BODY ✓	14 spaces left
6:15PM (45 MINS)	ADRENAL1NE ✓	10 spaces left
7:15PM (45 MINS)	FULL BODY ✓	10 spaces left

In terms of average noise levels, MCC requires that within apartments, daytime noise levels should not exceed $35dB_{L_{Aeq,16hour}}$, or $30dB_{L_{Aeq,8hour}}$ at night. These are long term averages, and generally used to consider noise ingress via windows.

FLOOR AND WALL CONSTRUCTION

dBx Acoustics were not employed to review the design of the mezzanine gym, and hence the exact floor and wall constructions, and structural interface details are unknown.

The mezzanine gym itself has been provided with a 'gym floor' resilient layer, type unknown, provided by TVS Acoustics.

Based on a visual inspection only, it is understood that the mezzanine structural frame is rigidly connected directly onto the structure of the existing building.

NOISE SURVEY

dBx Acoustics attended site on 15th December 2021 between around 12:00-13:15h. Noise levels were measured in 5 minutes periods, based on suggested periods detailed in the draft Association of Noise Consultants' "ANC Good Practice Working Group Gym Acoustics Guidance" (2021).

The class itself was understood to have been undertaken between 12:15h and 13:00h.

The results of the survey are shown in Table 1, below.

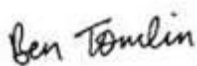
Table 1 – Measured Noise Levels during Exercise Class

Period, h	dBL _{Aeq,T}	63Hz, dBL _{eq,15min}	125Hz, dBL _{eq,15min}	dBL _{AFmax}
12:15-12:20	25	37	29	43
12:20-12:25	28	38	30	41
12:25-12:30	25	39	31	37
12:30-12:35	27	38	31	41
12:35-12:40	25	38	31	38
12:40-12:45	26	44	33	45
12:45-12:50	28	46	36	46
12:50-12:55	25	38	31	40
12:55-13:00	25	37	28	40

On this basis, all of MCC's entertainment noise (average, dBL_{eq,T}) noise level criteria appear to have been achieved. It is not clear what MCC's criteria are for maximum noise events.

I trust this is helpful at this stage, but if you have any further comments or queries, please call or email.

Yours sincerely,



Ben Tomlin

PRINCIPAL ACOUSTIC CONSULTANT

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Checked By: Susan Witterick (Director)