

SANDY BROWN

Consultants in Acoustics, Noise & Vibration

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From: JMG

Reviewer: JA

Pitch, Manchester Goods Yard

Operational noise breakout assessment

This document provides an assessment of operational noise breakout for the proposed development at the Pitch, Manchester Goods Yard to partially discharge Planning Condition 20 under 131318/JO/2021. In summary:

- Maximum amplified sound limits have been set out for day and night operations within the Pitch demise. These limits are compatible with achieving suitable noise transfer limits to the offices above, amplified noise break out at the nearest noise sensitive premises and would allow for typical lively bar/restaurant operations.
- Loudspeakers within the unit should not be rigidly mounted to the soffit or structural elements to minimise the risk of structure-borne noise transfer.
- An electronic sound limiting device is proposed to be installed to the amplified sound system which will need to be set up to ensure that the amplified sound limits are maintained.

Basis

This memo is based on the following information

- Sandy Brown 18346-R01-A *Acoustic planning report* dated 28 September 2018
- Sandy Brown report 22195-R01-C *Acoustic design review* dated 21 September 2022
- Sandy Brown 023622 M001-C *Operational noise break out assessment* dated 7 June 2024
- Existing internal wall and floors
- 355-EL-EXT-01A_Rev B received via email from Savills on 2 July 2025
- 355-PL-GF-02_(GA)_rev H received via email from Savills on 2 July 2025
- 355-PL-MF-02_(GA)_revN received via email from Savills on 2 July 2025
- Pitch Golf - Manchester - Audio Design REV4 received email from CloudCasting Corporation on 2 July 2025.

Planning Condition

Planning condition 20 under 131318/JO/2021 states the following:

'In order to discharge, an acoustic assessment for this particular unit will be required, which includes assessment of noise from internal activities, music / entertainment noise and assessment of noise breakout to the surrounding receptors and noise transfer to adjoining space adjacent to and above the uses.

This will also require confirmation of internal noise limit to ensure the condition criteria is not exceeded, details of any insulation requirements such as separating walls/ ceiling upgrades where required and details of how the internal noise level once agreed will be set and controlled.'

Acoustic criteria

Background noise levels

An environmental noise survey has been carried out by Sandy Brown, the measurement results are noise egress limits are set out in 18346-R01-A *Acoustic planning report* dated 28 September 2018.

The lowest background noise levels measured during the survey at the nearest noise sensitive premises were $L_{Aeq,5min}$ 50 dB during the day and $L_{Aeq,5min}$ 44 dB at night.

The octave band sound pressure levels corresponding to the minimum background L_{A90} (dB) level measured are provided in Table 1.

Table 1 Octave band background noise levels for lowest measured background noise levels

Time period	Minimum background noise level, $L_{90,5min}$ (dB)						
	Octave band centre frequency (Hz)						
	63	125	250	500	1k	2k	4k
Daytime (07:00 – 23:00)	52	49	48	43	47	41	27
Night-time (23:00 – 07:00)	49	46	44	39	39	34	24

Noise breakout

The operational noise egress criteria (associated with amplified sound) are provided in Table 2. These limits apply at the surrounding noise sensitive premises. These are 13 dB below the background noise levels in octave bands to account for cumulative contributions associated with other tenants within the Manchester Goods Yard building.

The nearest noise sensitive premises during the day (07:00-23:00) and at night (23:00-07:00) are considered to be Nickel & Dime (East Tower) and Marriot Hotel.

Table 2 Maximum amplified sound egress limits at noise sensitive premises

Time period	Maximum sound pressure level at 1 m from noise sensitive premises, $L_{eq,5min}$ (dB)						
	Octave band centre frequency (Hz)						
	63	125	250	500	1k	2k	4k
Daytime (07:00 – 23:00)	39	36	35	30	34	28	14
Night-time (23:00 – 07:00)	36	33	31	26	26	21	11

Internal noise transfer

For the purpose of assessing operational noise transfer, a typical NR 35 FCU spectrum has been considered within the level 1 demise above the Pitch unit. This is considered a reasonable worst-case scenario, as such noise levels would be expected within cellular meeting rooms and offices, which would be considered acoustically sensitive spaces. The spectrum considered is provided in Table 3 for reference.

Table 3 NR35 FCU sound pressure spectrum

	Sound pressure level L_{eq} (dB)							
	Octave-band centre frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
NR 35 FCU spectrum	42	39	39	35	35	32	27	23

Operational noise transfer to the level 1 demise from Pitch will need to be suitably controlled such that it does not result in disturbance to its occupants. It is recommended that operational

noise transfer be controlled to be at least 10 dB below the NR35 spectrum in each octave band within the level 1 demise as per Table 3.

Building envelope

The installed cladding system to the Pitch demise provides a minimum sound insulation performance of $R'_w + C_{tr}$ 35 dB (with windows closed). This forms the basis of the noise breakout assessment.

The Pitch entrance is proposed at ground level with lobbied doors at mezzanine level to enter the circulation spaces leading to the golf bays and seating in the members area.

Floor construction

Based on measured floor sound insulation performance between ground level and office space for another Manchester Good Yard project (Fenix, Manchester Goods Yard) the measured in-situ airborne sound insulation performance is $D_{nT,w} + C_{tr}$ 53 dB. This forms the basis of the noise transfer assessment.

Proposed operating hours

The proposed opening hours are between 10:00 – 01:00 hrs Monday to Sunday including bank holidays.

Amplified system design

The development includes the use of amplified music within the main spaces, the location of the speakers are indicated in Figure 1.

The amplified sound system includes full digital signal processing and is understood to be capable of limiting sound levels at specific frequencies as required.

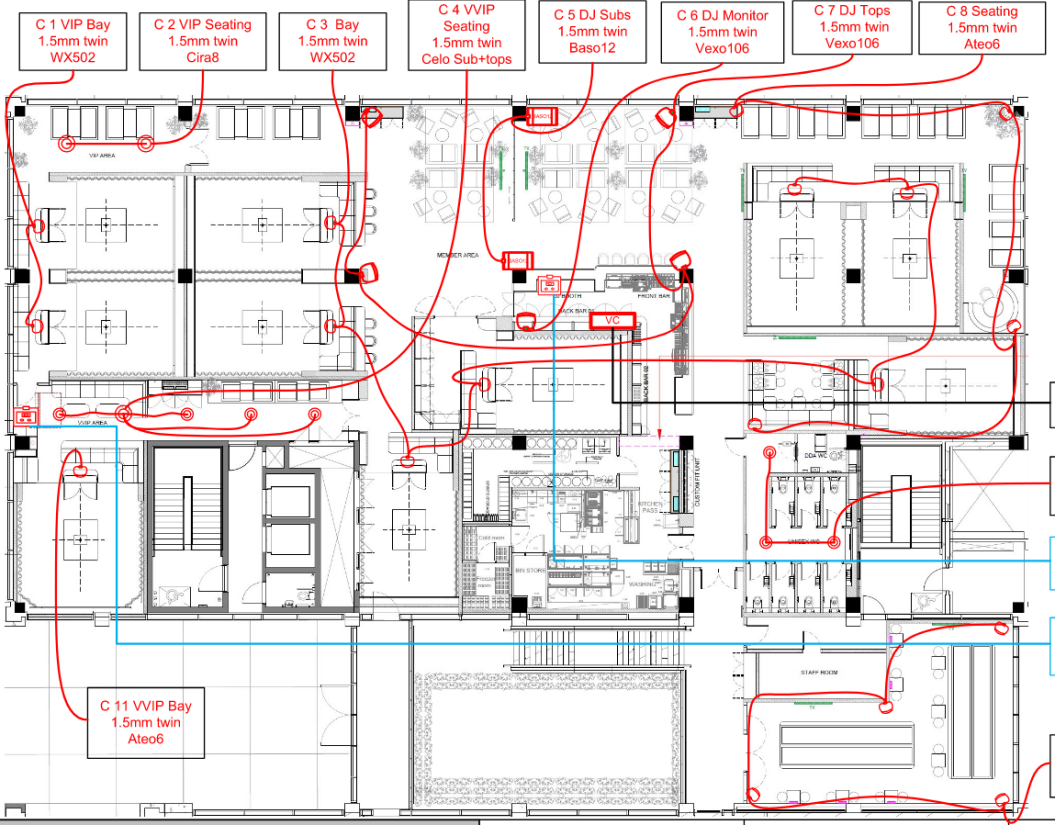


Figure 1 Proposed PA system loudspeaker location

Operational noise transfer assessment

Based on the received information and the measured floor sound insulation performance of $D_{nT,w}+C_{tr}$ 53 dB between commercial space and office space at *Fenix, Manchester Goods Yard*, the cumulative amplified sound levels within the mezzanine level at the Pitch has been set out in Table 4.

This assessment only considers noise transfer to office spaces in the level directly above the proposed the Pitch members area with proposed amplified music. Noise transfer to back of house spaces is not considered as these areas are not deemed acoustically sensitive.

Table 4 Maximum cumulative operational noise levels within Pitch mezzanine level

	Maximum cumulative operational sound pressure level L_{eq} (dB)						
	Octave-band centre frequency (Hz)						
	63	125	250	500	1000	2000	4000
Maximum amplified sound levels inside Pitch (transfer only)	80	79	81	81	84	84	84

The predicted internal noise levels in the office spaces above are set out in Table 5 which meet with the noise transfer criteria set out above without additional mitigation measures.

The limited in Table 4 equate to an overall amplified sound level of L_{Aeq} 90 dB which is compatible with loud amplified music within a lively typical bar/restaurant setting.

Table 5 Predicted amplified sound transfer levels to level 1 office above Pitch

	Sound pressure level L_{eq} (dB)						
	Octave-band centre frequency (Hz)						
	63	125	250	500	1000	2000	4000
Predicted amplified sound transfer level to office above the Pitch	46	40	34	28	24	20	18

Although not a requirement for office space, the predicted results are below MCC low frequency criteria of 47 dB at 63 Hz and 41 dB at 125 Hz octave bands for residential developments structurally connected to entertainment venues.

It should be noted that there may be slight variations to the floor airborne sound insulation performance between different areas of the building. As such, the limits proposed within Pitch should be treated as indicative only at this stage and will be subject to in-situ acoustic testing as required by Planning Condition 20.

It is recommended that loudspeakers within the unit are not rigidly mounted to the soffit or structural elements such as columns to minimise the risk of structure -borne noise transfer. A well distributed and directional loudspeaker system is noted to be proposed.

Operational noise breakout assessment

This section presents a breakout assessment via the facade based on the proposed calculated maximum amplified music levels.

The assessment takes into account the following:

- Meeting noise egress limits from amplified sound breakout set out in Table 2
- Noise transfer levels to office spaces above be 10 dB below the sound pressure levels set out in Table 3
- Maximum amplified music levels set out in in Table 4
- Overall facade sound insulation performance of $R'_w + C_{tr}$ 35 dB
- Facade well sealed and windows closed
- Nearest noise sensitive premises location in relation to each the Pitch facade and screening where relevant

- Loudspeakers within the unit not be rigidly mounted to the soffit or structural elements to minimise the risk of structure borne noise transfer
- Treatment/attenuation to ventilation routes to ensure that the $R_w + C_{tr}$ 35 dB facade standard and floor sound insulation performance is not undermined

The predicted cumulative amplified sound breakout level outside the nearest noise sensitive premises are set out in Table 6.

Table 6 Predicted amplified sound breakout level at the nearest noise sensitive premises

	Sound pressure level L_{eq} (dB)						
	Octave-band centre frequency (Hz)						
	63	125	250	500	1000	2000	4000
Nickel & Dime (East Tower)	50	41	47	36	29	30	23
Marriot Hotel	24	13	17	3	-	-	-

The maximum operational noise limits set out in Table 4 are based on controlling internal noise transfer only. The predicted amplified sound breakout levels exceed the relevant criteria at the Nickel & Dime (East Tower).

As such, to control amplified sound breakout, the maximum internal amplified sound limits within the Pitch are set out in Table 7.

Table 7 Maximum internal noise levels within Pitch

	Maximum amplified sound limits within Pitch L_{eq} (dB)						
	Octave-band centre frequency (Hz)						
	63	125	250	500	1000	2000	4000
Day operation	76	79	74	80	84	84	80
Night operation	73	76	70	76	84	80	77

The predicted overall sound levels in Table 7 result in L_{Aeq} 89 dB during the day operation and L_{Aeq} 87 dB during the night operation, which are considered compatible with typical music levels in a typical bar/restaurant setting, with controlled bass.

The electronic sound limiting device that is proposed will need to be set to ensure that these limits cannot be exceeded.

The assessment is based on the base build construction details stated above.