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PROJECT TECHNICAL MEMORANDUM

JOB TITLE : 58 Mosley Street
REF : HT:30387/PTM2
DATE : 22 November 2024
FROM : Will Robertson
ISSUED TO : Design Team

RE: PLANNING CONDITION 13b DISCHARGE LETTER 58 MOSLEY STREET

1.0 Introduction

The development at 58 Mosley Street, has been granted planning permission subject to several conditions, including 13b, which is as follows:

“Condition 13 b) Upon completion of the development and before the use hereby approved becomes operational, a verification report shall be undertaken 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 report shall be submitted to and approved in writing by the City Council as local planning authority before the use becomes operational along with a timescale that confirms when any necessary changes will be implemented.”

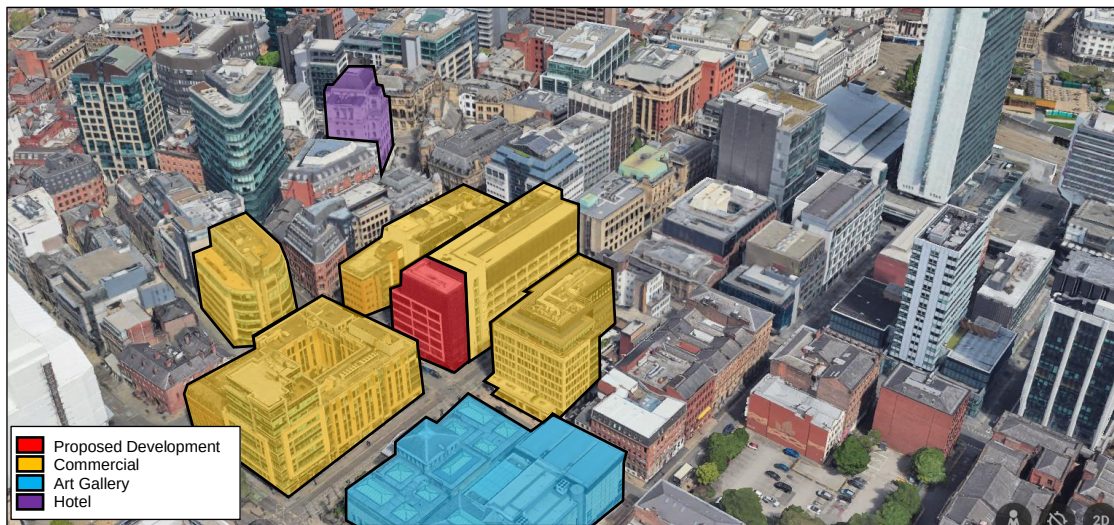
Condition 13a (desktop assessment) was previously discharged through the issue of “30387-PTM-1-Rev1-JWH Condition 13a Discharge Letter”.

This intention of this letter is to assist in the discharge of the above 13b Condition by presenting measured results of the completed scheme with a direct comparison against noise limits set out in the Hann Tucker assessment submitted as part of the 13a Condition discharge.



2.0 Site Description

The figure below highlights the site in question, which is bounded by Mosley Street, Booth Street, and West Mosley Street, with a tram line running along Mosley Street. The site is predominantly surrounded by commercial and entertainment establishments, with the closest commercial structure situated roughly 15m southeast. An art gallery is also present, located approximately 25m to the south. The nearest residential building, which is well shielded from the site, is around 130m to the northwest.



Site Location Map (Imagery c/o Google Earth 2023)

3.0 Condition Criteria

The criteria for the terrace area to the differing receptors are discussed in the sections below and relate to those detailed in “30387-PTM-1-Rev1-JWH Condition 13a Discharge Letter”.

3.1 Residential Receptors

On the basis of Manchester City Council's guidance, and the results of the environmental noise survey, it was proposed in the previous note in relation to Condition 13a that the following music noise emission criteria be achieved at 1 metre from the nearest noise residential sensitive receptor, presented as free-field limits.

Time Period	Music Noise Emission Limits (dB) at Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
Daytime (07:00 – 23:00)	54	51	52	50	49	44	36
Night-time (23:00 – 07:00)	49	46	49	45	43	38	29



3.2 Office Receptors

MCC stipulated that amplified noise egress criteria for residential receptors should not exceed 5 dB below the background noise level, however, there are no specific requirements to control noise egress to office developments. As such it was proposed, to minimise the risk of disturbance to adjacent office developments (in the discharge of 13a of this condition) that the cumulative noise level as a result of noise egress from the development should not exceed 5 dB below the internal noise level within the office.

All office developments in the area have sealed facades. As such, pessimistically assuming an internal noise level of NR 35 and the sound insulation performance of a typical thermal double-glazed window we have established amplified noise egress limits at the most affected office receptor.

Based on the above, the following noise emission criteria be achieved at 1 metre from the nearest noise office receptor, presented as free-field limits. Night-time limits for office receptors have not been provided as it was assumed during 13a discharge, and agreed by way of discharge, that the offices would be closed during the night and therefore not sensitive to noise.

Time Period	Music Noise Emission Limits (dB) at Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
Daytime (07:00 – 23:00)	67	56	52	51	57	50	52

4.0 Entertainment Noise Survey

4.1 Procedure

Hann Tucker visited site on Friday 15 November 2024 to capture the noise levels from the newly installed and operational sound system on the new terrace area. Fully attended noise measurements were undertaken between the period of approximately 10:30 to 12:15 hours.

Additional source measurements of the installed speakers were also undertaken at a distance of approximately 1-metre.

An example of the installed speakers can be seen circled in the picture below.



Picture of speaker within the terrace area

Only 2No speakers are located in the terrace area; the one illustrated above, as well as another speaker in the opposite corner of the room along the same wall.

It should be noted that the local control panel for music (ie control panel in the extension area) had not yet been installed during the HTA visit, and so during the visit the noise level was adjusted within the basement AV room. The control room in the basement was linked to the speakers and the volume control was set to a level that was deemed appropriate for client entertaining. None of the building services were noted to be running.

4.2 Equipment

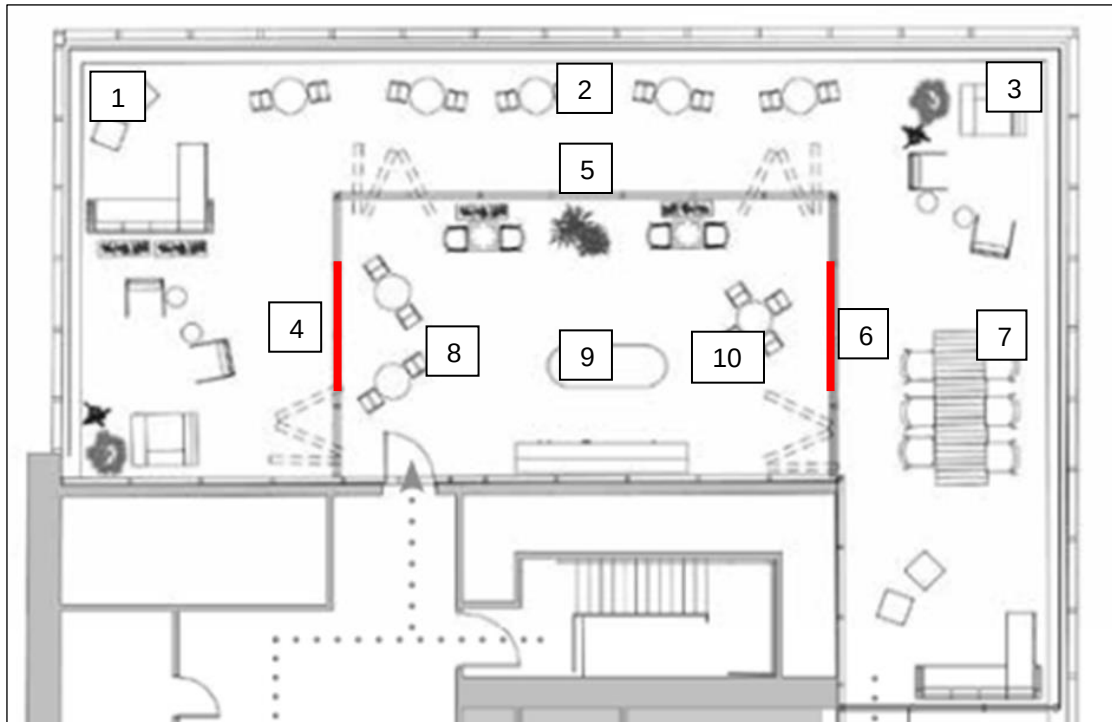
The following equipment was utilised for the environmental noise monitoring:

Description	Manufacturer	Type	Serial Number	Last Calibration
Type 1 Data Logging Sound Level Meter	Brüel & Kjær	2250	3025254	Calibration on 21/02/2024
Type 1 ½" Condenser Microphone	Brüel & Kjær	4189	3004879	Calibration on 21/02/2024
Type 1 Preamp	Brüel & Kjær	ZC0032	28066	Calibration on 21/02/2024
SLM Calibrator	Brüel & Kjær	4231	2308993	Calibration on 20/02/2024



4.3 Measurement Positions

The following figure details the measurement positions externally and internally on the terrace area. The openable doors whilst on-site are highlighted in **red** below.



Rooftop Terrace Floor Plan

5.0 Survey Results

The measured levels presented in this section have been used to calculate the noise level at the nearby sensitive receptors, discussed in Section 3.0.

5.1 Background Noise Levels

When on site, the HTA engineer measured multiple background levels on both the internal and external terrace area, with the purpose of establishing the prevailing noise climate without the addition of music from the installed speakers. These results are presented below.

5.1.1 Internal background levels

The following table details the measured sound pressure levels at specified positions internally, with no music playing and all doors closed. It was noted that the internal noise climate was dominated by the external background noise as well as occasional chatter and movement of workers still on site. This impact on the background is considered negligible however as the measurements were paused when workers were noted to be passing.



Measurement Position	Free-field Sound Pressure Level (L _{eq} dB)								
	63	125	250	500	1000	2000	4000	8000	dBA
8	53	45	40	36	35	33	23	14	40
9	50	45	38	36	34	30	21	14	39
10	49	45	37	36	33	29	21	14	38

5.1.2 External background levels

Whilst measuring the external background levels, the noise climate was noted to be dominated by trams passing and screeching as well as plant items running continuously on the lower adjacent nearby building roofs. The table below outlines the measured free-field levels:

Measurement Position	Free-field Sound Pressure Level (L _{eq} dB)								
	63	125	250	500	1000	2000	4000	8000	dBA
1	65	60	55	55	52	52	43	30	58
2	63	60	56	55	51	49	43	32	57
3	65	61	56	52	51	49	39	27	56

5.2 Internal Entertainment Noise Levels

As discussed in Section 4.1, music levels were set to a subjectively suitable level that was deemed commensurate with client entertaining, referencing previous discussion with the client which was noted in Section 6.4 of the Condition 13a discharge report. Subsequently, noise level measurements were undertaken internally, and the results are presented below.

5.2.1 Doors closed

The following table details the measured sound pressure levels at the specified positions internally, with music playing continuously and all doors closed. It was noted that the noise climate was dominated by the music noise for these measurements.

Measurement Position	Free-field Sound Pressure Level (L _{eq} dB)								
	63	125	250	500	1000	2000	4000	8000	dBA
8	51	60	58	50	48	44	42	37	54
9	54	58	61	52	51	50	45	39	58
10	54	59	59	55	53	50	47	41	58



5.2.2 Doors open

The following table details the measured sound pressure levels at the specified positions internally, with music playing continuously and all doors open. It was noted that the noise climate was dominated by the music noise, though as the doors were opened, external noise from the surrounding area (ie trams) has resulted in increased internal noise levels than when compared to a “doors closed scenario”.

Measurement Position	Free-field Sound Pressure Level (L _{eq} dB)								
	63	125	250	500	1000	2000	4000	8000	dBA
8	58	66	60	58	55	50	46	42	60
9	57	59	56	54	53	49	45	40	57
10	57	58	55	50	50	48	44	38	55

5.3 External Entertainment Noise Levels

Noise level measurements were also undertaken externally on the rooftop terrace, and the results are presented below.

5.3.1 Doors closed

The following table details the free-field measured levels at the specified positions externally, with music playing continuously and all doors closed at a distance of approximately 1-metre from the façade of the terrace. It was noted that the noise climate was dominated by the previously discussed “external background noise”, as opposed to the music noise breaking out from inside the rooftop extension being subjectively audible.

Measurement Position	Free-field Sound Pressure Level at 1m from façade (L _{eq} dB)								
	63	125	250	500	1000	2000	4000	8000	dBA
4	68	62	56	56	55	55	45	33	60
5	64	60	57	54	53	52	46	37	58
6	63	60	56	52	49	46	39	26	55

5.3.2 Doors open

The following table details the free-field measured levels at the edge of the terrace area, with music playing continuously and all doors open. It was noted that the noise climate was dominated by a combination of the background, with some contribution from the music noise from within the rooftop extension.



Measurement Position	Free-field Sound Pressure Level at 1m from façade (L _{eq} dB)								
	63	125	250	500	1000	2000	4000	8000	dBA
1	66	60	56	54	51	50	42	34	57
2	64	63	57	57	54	52	44	33	59
7	62	60	58	52	52	50	42	36	57

6.0 Assessment

This section discusses the impacts of the music noise from the terrace to each of the previously identified noise sensitive receptors.

6.1 Internal Noise Levels

The internal noise levels with music running at a suitable level for client entertainment purposes were measured at a much lower level than previously predicted. A direct comparison can be seen in the table below.

	Free-field Sound Pressure Level (L _{eq} dB)								
	63	125	250	500	1000	2000	4000	8000	dBA
Measured Level (worst-case)	54	59	59	55	53	50	47	41	58
Previously Predicted	71	74	75	75	72	68	63	N/A	77
Difference	-17	-15	-16	-20	-19	-18	-16	-	-19

This is an indication, before carrying out any nominal assessment, that there is a high chance of “low impact” on the nearby noise sensitive receptors as the previous assessment indicated compliance with much higher internal noise levels.

Whilst there is difference between the previously used “assumed noise levels”, and the now measured “operational noise levels”, it is important to note that during the commissioning visit the music was played back at a level that was deemed suitable for client entertaining.

6.2 Assessment (Closed Doors)

6.2.1 Residential Receptors

The nearest residential receptors are located 125m away. The table below provides a summary of the entertainment noise egress calculations from the terrace pavilion with all of the doors closed.



Assessment to Residential Receptor	Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
"Worst-case" Measured noise level at terrace facade (dB L_{eq})	68	62	56	56	55	55	45
Distance propagation correction (dB), 125m	-42	-42	-42	-42	-42	-42	-42
External noise level at nearest receptor (dB L_{eq}) SPL_{out}	26	20	14	14	13	13	3
Night-time egress limits, L_{eq} (23:00 – 07:00)	49	46	49	45	43	38	29
Compliance	✓	✓	✓	✓	✓	✓	✓

The above table demonstrates that the worst-case measured noise breakout with the doors closed would be well below the night-time criteria at the nearest residential dwelling.

6.2.2 Office Receptors

The table below provides a summary of the entertainment noise egress calculations for the terrace pavilion with all of the doors closed to the nearby offices. As the measured levels were at the façade of the terrace area and the building is at a greater height than the receptor, a 5 dB screening loss has also been included in the calculations.

Assessment to Office Receptor	Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
"Worst-case" Measured noise level at terrace façade (dB L_{eq})	68	62	56	56	55	55	45
Distance propagation correction (dB), to 16m	-24	-24	-24	-24	-24	-24	-24
Screening Loss (dB)	-5	-5	-5	-5	-5	-5	-5
External noise level at nearest receptor (dB L_{eq}) SPL_{out}	39	33	27	27	26	26	16
Daytime Criteria, L_{Aeq} (07:00 – 23:00)	67	56	52	51	57	50	52
Compliance	✓	✓	✓	✓	✓	✓	✓

The above table demonstrates that the noise breakout with the doors closed would be well below the day-time criteria at the nearest office premises.



6.3 Assessment (Open Doors)

6.3.1 Residential Receptors

The table below provides a summary of the entertainment noise egress calculations for the terrace pavilion with all of the doors open.

Assessment to Residential Receptor	Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
"Worst-case" Measured external noise level (dB L_{eq})	64	63	57	57	54	52	44
Distance propagation correction (dB), to 125m	-28	-28	-28	-28	-28	-28	-28
External noise level at nearest receptor (dB L_{eq}) SPL_{out}	36	35	29	29	26	24	16
Night-time egress limits, L_{Aeq} (23:00 – 07:00)	49	46	49	45	43	38	29
Compliance	✓	✓	✓	✓	✓	✓	✓

The above table demonstrates that the noise breakout with the doors open would be well below the night-time criteria at the nearest residential dwelling. It is important to also note that the above measured external levels have not been corrected for background noise, and so are considered very worst case given they include contribution from the background noise in the area (ie city hubbub / trams).

6.3.2 Office Receptors

The table below provide a summary of the entertainment noise egress calculations for the terrace pavilion with all of the doors open.

Assessment to Residential Receptor	Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
"Worst-case" Measured external noise level (dB L_{eq})	64	63	57	57	54	52	44
Distance propagation correction (dB), to 16m	-10	-10	-10	-10	-10	-10	-10
External noise level at nearest receptor (dB L_{eq}) SPL_{out}	54	53	47	47	44	42	34
Daytime Criteria, L_{Aeq} (07:00 – 23:00)	67	56	52	51	57	50	52
Compliance	✓	✓	✓	✓	✓	✓	✓

The above table demonstrates that the noise breakout with the windows open would be below the day-time criteria at the nearest office. As the measured levels were captured at the edge of the terrace area, a 5 dB screening loss has not been included in the calculations. It is important



to also note that the above measured external levels have not been corrected for background noise, and so are considered very worst case given they include contribution from the background noise in the area (ie city hubbub / trams).

Notwithstanding the compliance demonstrated above, it is still advised that the operators of the terrace be mindful of neighbours and should any complaints be received reduce noise levels accordingly.

7.0 Operational Noise Egress (Voices)

The discussion in the Condition 13a discharge report is still considered applicable. As such, based on the open nature of the terrace, terrace occupants are likely to directly make noise on the roof terrace. This noise, particularly during peak times, could potentially cause disturbances to the surrounding environment if not appropriately managed.

However, it is important to note that this is unlikely to be a significant issue for small scale office use or corporate events. These types of events typically have fewer attendees and are often held during daytime hours, reducing the potential for noise disturbance.

Implementing a noise management plan should suffice to mitigate any potential noise issues and avoid complaints. This plan could include the following measures:

- Restricting the number of attendees at any one time to approximately 50 attendees would help control noise levels.
- Events are to be scheduled during the agreed operating hours of 08:00 – 23:00 (Mon – Sat) and 09:00 – 19:00 (Sun) as per Condition 16 so as to not disturb others.
- Regular noise level checks can ensure that the noise remains within acceptable limits.
- Staff can be trained to manage noise levels and respond to any potential noise issues promptly.
- Keeping open lines of communication with nearby residents and businesses can help address any concerns proactively.

In conclusion, while occupant noise on the roof terrace is a consideration, it is not anticipated to be a significant issue for small scale office or corporate events. With a noise management plan in place, it is expected that any potential noise disturbances can be effectively managed, and complaints avoided. This approach ensures a balance between the normal use of the roof terrace and maintaining a good relationship with the surrounding receptors.



8.0 Conclusion

Considering the results in Section 5.0 and the subsequent assessment in Section 6.0, Condition 13b is suitable to be discharged as the demonstrated noise levels fall within the criteria discussed in "30387-PTM-1-Rev1-JWH Condition 13a Discharge Letter".

We hope the above is clear and of use.

Yours sincerely

Will Robertson

for HANN TUCKER ASSOCIATES