

Three Spires Acoustics Ltd

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Factory International

Water Street

Manchester

M3 4JQ

Condition 13: Venue Foyer Noise Assessment

For: Factory International



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CONDITION 13: VENUE FOYER NOISE ASSESSMENT

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1. Introduction

- 1.1.1 Three Spires Acoustics Ltd (TSA) have been commissioned by Factory International Ltd (FI) to undertake a noise assessment in order to discharge planning consent Condition 13 attached to planning permission 130034/JO/2021 regarding the use of venue foyer for entertainment purposes.
- 1.1.2 The objective of the assessment was to determine the music noise break out from the foyer area under different operating conditions in order to set a maximum internal level which would comply with the requirements of condition 13.

2. Local Authority Requirements

2.1 Planning Conditions

- 2.1.1 Planning consent 130034/JO/2021 was granted by MCC and included conditions related to noise control. Condition 13, related to the use of the ground floor Foyer is reproduced below. We understand that condition 14 (plant noise) and condition 19 (operation of the warehouse and hall) will be discharged by the acoustic assessment undertaken by the Developers' acoustic consultants.

Condition 13) If the ground floor commercial units are to be used for A3 or A4 Use Classes, they shall be acoustically insulated and treated to limit the breakout of noise in accordance with a noise study of the premises and a scheme of acoustic treatment that has been submitted to and approved in writing by the City Council as local planning authority. The scheme shall be implemented in full before the use commences and should consider the impact of the use of the ground floor commercial units in relation the other noise sensitive locations including the office space above.

The proposed scheme should be designed so that low frequency sound emission within any dwelling does not exceed 47dBLeq in the 63Hz octave frequency band and 41dBLeq in the 125Hz band.

Reason To safeguard the amenities of the occupiers of the building and occupiers of nearby properties, pursuant to policy DM1 of the Core Strategy

Reason - To secure a reduction in noise in order to protect occupiers of adjacent buildings from noise nuisance, pursuant to policies SP1, H1 and DM1 of the Core Strategy.

2.2 Foyer Area

- 2.2.1 The Foyer is an event space on the ground floor of the venue which leads into the main warehouse and hall areas. It consists of a multi use space with moveable seating which can host relatively small live and recorded events including DJ sets and live musical performances as well as general background music. A distributed in-house sound system has been installed within the space which consist of Martin Audio Blackline series, (Martin Audio 2 X10B, 2 X218,

subs, 4 X12B, 4 X8B, Amplifiers 1 x Powersoft T602, 3 x Powersoft T604). The system is zonal controlled using Q-Sys system and the FOH mixing desk is an Allen & Heath SQ5.

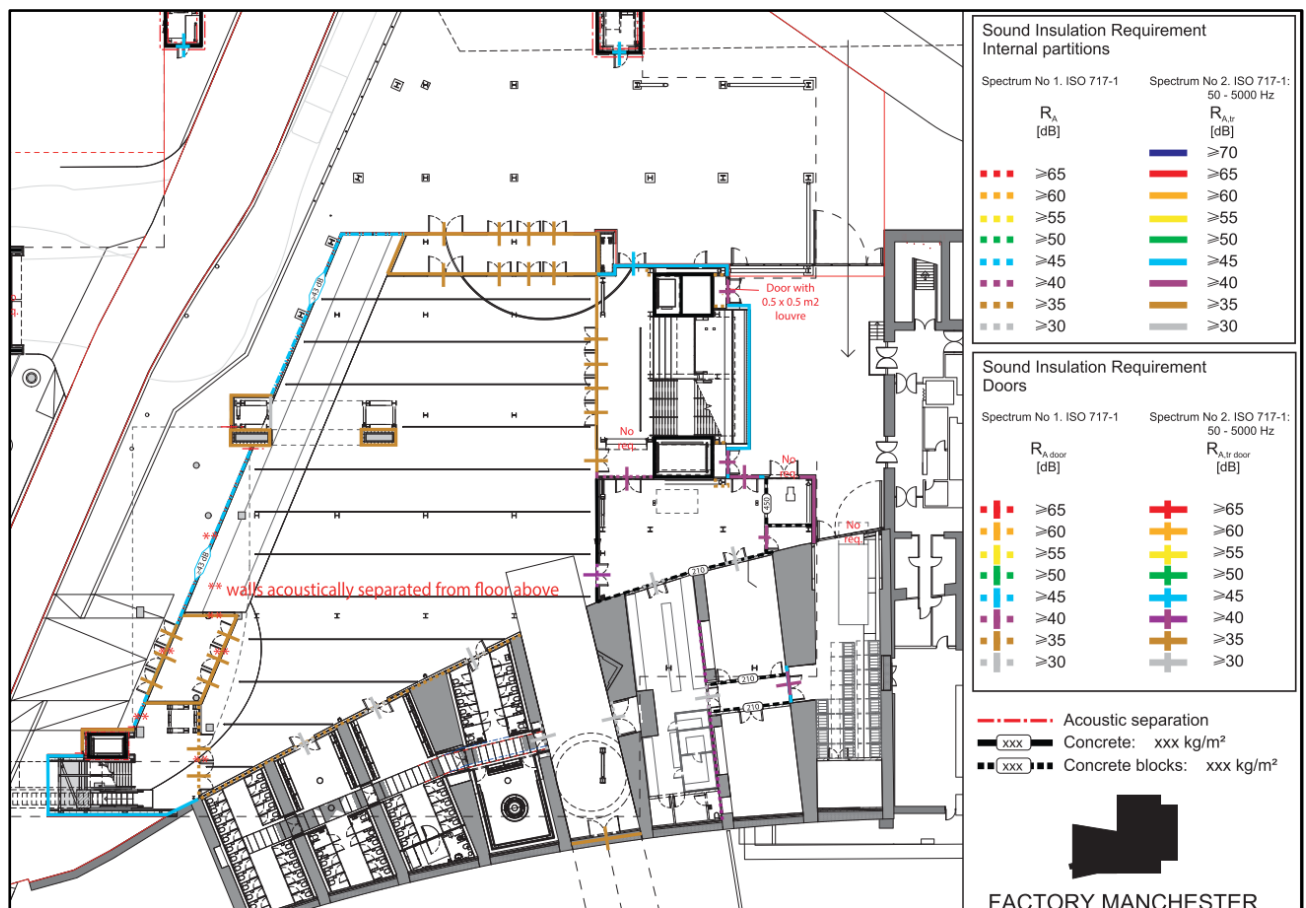
- 2.2.2 Typically, an additional set of sub bases are also used for DJ performances. Additionally, there is a bar and café area running along the western perimeter of the space.

2.3 Sound Insulation Scheme

- 2.3.1 The Foyer has been designed with facade glazing with a Weighted Sound Reduction Index (R_w) of 45Rw and the acoustic lobby entrances door sets with a 35Rw for each door set and a 2m separation distance between each door set.

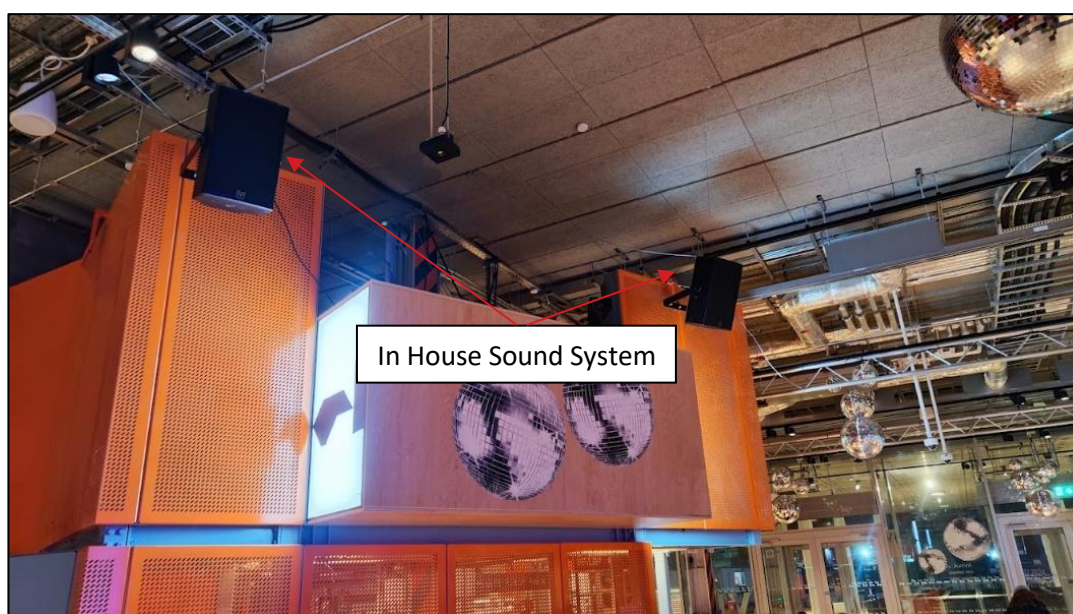
- 2.3.2 Figure 1 below details the sound insulation specification for various building elements including the Foyer. Photographs of the Foyer area are presented at Figure 2 below

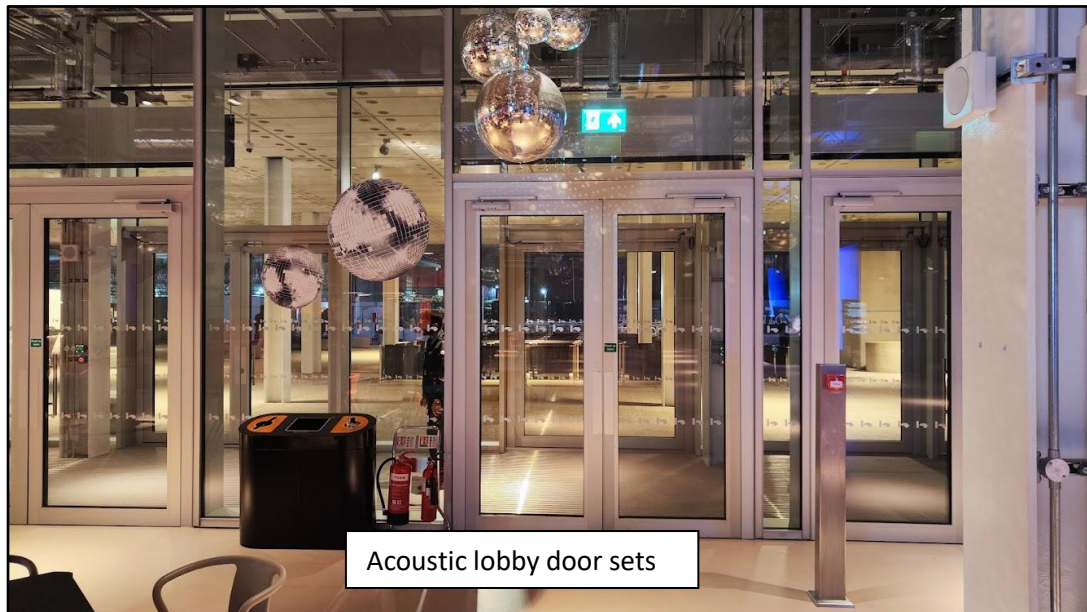
Figure 1. Sound Insulation Performance Specification



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Figure 2. Photographs of the Foyer Area, In house PA System and Acoustic Lobby Doors.





2.4 Music Noise Breakout

- 2.4.1 Noise breakout from the main venue has been addressed by Level Acoustics & Vibration in their report Acoustic study noise emissions, reference LA.190505.R02 dated 15/12/2021. The reports states Criteria for sound levels at facades of residential buildings are described in the Deloitte report “Factory, Manchester. Environmental Statement – Volume 1”, October 2016. The reports further states.

2.5 Low Frequency Noise

- 2.5.1 *Through consultation with MCC, it has been established that the Proposed Development should be designed so that low frequency sound emission within any dwelling does not exceed 47dBLeq in the 63Hz octave frequency band and 41dBLeq in the 125Hz band.*
- 2.5.2 *The noise break out assessments have assumed all surrounding residential buildings (existing or proposed) are naturally ventilated. In the noise modelling calculations, an attenuation of 5dB through an open window at these low frequencies has been assumed. This is a conservative assumption as research has shown that the attenuation could be more than 5dB. This assumption provides a worst-case noise intrusion and gives the design a small degree of safety in meeting the criteria.*
- 2.5.3 *The criteria for low frequency noise levels at residential façades are therefore 52dBLeq and 46dBLeq in the octave bands centred at 63Hz and 125Hz respectively. These are free-field noise levels with no façade correction applied.*

2.6 Background Noise Survey

- 2.6.1 Arup has performed a noise survey in order to determined background noise levels LA90 on the building site (Appendix B of “The Factory Stage 2 Acoustic Design Report”, ref, R01_SJS, 8 April 2016). The outcome of this survey is:

- LA90 = 55 dBA during daytime (07:00-23:00)
 - LA90 = 48 dBA during night-time (23:00-07:00).
- 2.6.2 These values also are included in section 9.51 of the Deloitte report “Factory, Manchester. Environmental Statement – Volume 1”, October 2016. We have been informed that the council have rejected these levels for the compliance assessments and therefore an updated background survey was undertaken at MP1 on top of the platform next to the residential block. Measurements were undertaken from 18:00 on 6th to 23:00 on 15th December 2023. Measurement periods during condition 13 testing and on Sunday night 8th /9th December 2023, for condition 14 and 19 testing have been excluded from the noise survey. A photograph of the equipment is presented at Appendix C.
- 2.6.3 Construction work was undertaken during daytime working hours and stopped at 18:00 each day, therefore measurements from 18:00 to 02:00 have been used to set baseline limits. It is considered measurements at this position are representative of the closest receptors and will be similar, if slightly lower than levels at other locations and will therefore be applied as the baseline.
- 2.6.4 The sound level meter was set to record all broadband and statistical A weighted metrics including L90 and Leq as well as and centre frequency octave band measurements. Measurements were simultaneously made of 1 minute and 1hour time intervals. Measurements were obtained using the following instrumentation complying with the Type 1 specification of IEC 60651, IEC 61260 and IEC 61672;
- Brüel and Kjaer 2250 Integrated SLM Serial Nos 2827259
 - Brüel and Kjaer 4231 Field Calibrator 3001533
- 2.6.5 The equipment was calibrated using a B&K 4231 field calibrator both before and after the survey and no significant drift was observed. Full calibration certificates are available upon request. Measurements were supplemented with timed audio recordings to enable post measurement analysis and any evening/night periods that have contained any audio indication of construction noise excluded. Full measurement data, including audio recordings, is available upon request.
- 2.6.6 Further details are presented in Appendix A. Weather conditions were monitored using Met office data and were generally conducive for monitoring purposes.
- 2.6.7 The modal sound level and range of sound level metrics required by MCC technical guidance are detailed in Table 1 below. Measurements align with the DEFRA strategic noise mapping contours (see Appendix D) and the background noise survey undertaken by Arup and detailed in The Factory Stage 2 Acoustic Design Report, ref, R01_SJS, 8 April dated 2016 and both indicate that the general acoustic environment is acoustically vibrant and dominated by transportation noise sources.

Table 1. MP1 Background Measurement

Time	LAeq	LCeq	LAF90	LZF90 63HZ	LZF90 125HZ	LZF90 250HZ	LZF90 500HZ	LZF90 1KHZ	LZF90 2KHZ	LZF90 4KHZ
18:00-23:00	57 (56-62)	64 (61-75)	55 (51-59)	55 (49-57)	54 (49-56)	53 (49-54)	50 (47-56)	50 (48-55)	43 (42-50)	32 (29-44)
23:00-02:00	57 (52-62)	63 (59-71)	53 (46-56)	52 (47-53)	51 (47-53)	49 (44-52)	49 (44-52)	50 (42-53)	41 (36-49)	28 (23-43)

2.7 Overall Noise Level

2.7.1 In addition, for residential buildings (Northwest Tower and North Tower) the overall A-weighted noise breakout level must be 10 dB below the background noise level (LA90). Based on the background noise survey this has led to the following criteria for the maximally allowed sound level at the façade of the North Tower and the Northwest Tower.

- Daytime (18:00-23.00h): $55 - 10 = 45$ dB(A).
- Night-time (23.00-02.00h): $53 - 10 = 43$ dB(A).

2.8 Entertainment Noise Limits

2.8.1 The resultant external noise limits are detailed at Table 2 below.

Table 2. Entertainment Noise Limits

Time	LAeq	LZeq 63HZ	LZeq 125HZ
Daytime 12:00-23:00 (external)	45	52	46
Night-time 23:00-02:00 (external)	43	52	46
Internal Day and Night low frequency noise limit	NA	47	41

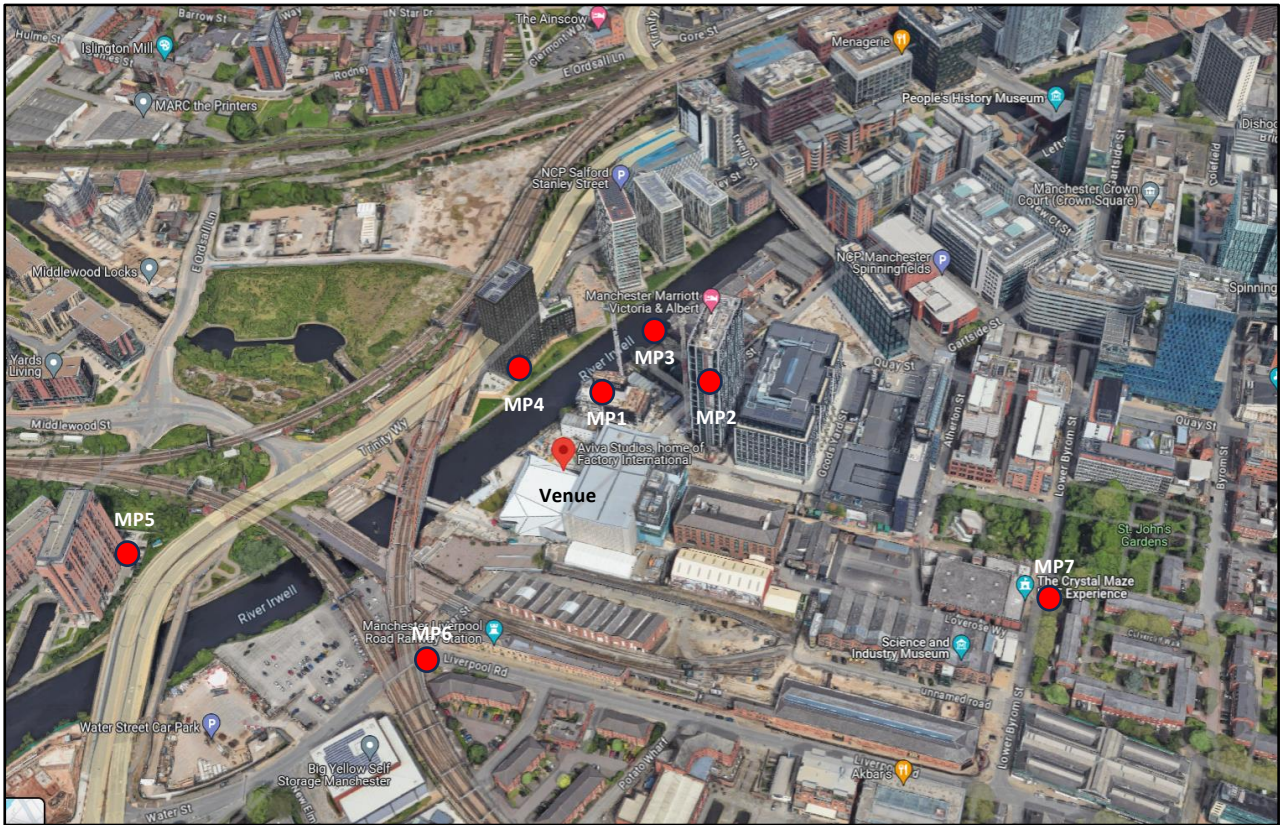
2.8.2 The closest residential properties to the venue are the newly constructed Tower 1 to the north and the tower to the northwest, residential apartment block on Stanley Steet and flats at the junction of Water Street and Liverpool Rd. It is considered that compliance with proposed noise level limits at these locations will be, by definition, be compliant at more distant receptors such as Culvercliffe Walk and Left Bank, which are also screened by existing buildings. However, MCC have requested that assessment is undertaken at other locations around the perimeter of the site, and these are detailed in Table 2 and Figure 3 below.

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Table 3. Noise Monitoring Locations

Noise Monitoring Locations
MP1 Northwest Tower
MP2 Tower 1 (internal)
MP3 Marriot Hotel
MP4 Stanley Street
MP5 Wilburn Basin
MP6 Junction of Liverpool Rd & Water St
MP7 Culvercliffe Walk

Figure 3. Noise Assessment Locations



3. Venue Testing

- 3.1.1 A venue sound test was undertaken on the Wednesday 6th December 2023. Semi permanent noise monitoring equipment (B&K 2250) was set up at MP1 on the platform opposite the Northwest Tower and MP2 internally within Flat 403 within Tower 1, overlooking the venue.
- 3.1.2 Measurements were also undertaken within the Foyer and at 5m from the northern and western entrances to building. An additional sound monitoring system was installed at the FOH position. During the testing it was evident that there was minimal noise breakout which was audible / measurable at the NSR's and therefore high levels of music noise were played through the main PA to establish the measured level difference, inside to outside, which was above prevailing ambient sound levels at the proxy locations. These measurements were then used to predict the received music level at the NSR's which would assist with setting maximum internal levels to ensure compliance with condition 13 requirements.
- 3.1.3 Photographs of the equipment are detailed at Appendix A.

4. Results

- 4.1.1 Three assessment scenarios were undertaken with the entrance doors.
- Doors fully closed.
 - Two sets of outer doors open.
 - Two sets of outer and inner doors open.
- 4.1.2 High levels of amplified music were played through the in-house sound system, which included an additional sub-bass set. A typical Electronic Dance Music (EDM) track (Delilah by Fred Again) which contained high levels of low frequency content and a suitable dynamic range, was looped and played continuously during the assessment and is considered to represent a worse case use of the space.

Table 3 below presents the noise calculations for the MP1 Northwest Tower location, further results for each location are detailed at Appendix A.

Table 4. MP1 NW Tower Music Noise Predictions

MP1 NW Tower Main Entrance: 5m from Doors					MP1 NW Tower Main Entrance: 5m from Doors					MP1 NW Tower Main Entrance: 5m from Doors				
All Doors Closed					Outer Doors Open					Both Door Sets Open				
L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125	
[dB]	[dB]	[dB]	[dB]		[dB]	[dB]	[dB]	[dB]		[dB]	[dB]	[dB]	[dB]	
Internal Level EDM 21:05 Leq,1min	101	111	110	99	Internal Level EDM 21:20	101	111	110	100	Internal Level EDM 21:17	102	111	110	99
Measured Level at 21:05 Leq,1min	59	75	74	60	Measured Level at 21:20 Leq,1min	63	78	77	67	Measured Level at 21:17 Leq,1min	73	81	78	72
Ambient	56	65	59	55	Ambient	56	65	59	55	Ambient	56	65	59	55
Music Noise Level	56	75	74	58	Music Noise Level	59	80	79	62	Music Noise Level	73	87	86	71
Distance Attenuation to NW Tower (70m)	23	23	23	23	Distance Attenuation to NW Tower (70m)	23	23	23	23	Distance Attenuation to NW Tower (70m)	23	23	23	23
Predicted Level at MP1	33	52	51	35	Predicted Level at MP1	36	57	56	39	Predicted Level at MP1	50	64	63	48
MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46
Level Diff	-12	-3	-1	-11	Level Diff	-9	2	4	-7	Level Diff	5	9	11	2
Max internal level Day	113	114	111	110	Max internal level Day	110	109	106	107	Max internal level Day	97	102	99	97
Recommended Internal Post 23.00	94	102	99	97	Recommended Internal Post 23.00	94	102	99	97	Recommended Internal Post 23.00	94	102	99	97
Inside Outside	45	36	36	41	Inside Outside	42	31	31	38	Inside Outside	29	24	24	28
Music Noise Level	49	66	63	56	Music Noise Level	52	71	68	59	Music Noise Level	66	78	75	69
Distance Attenuation to NW Tower (70m)	23	23	23	23	Distance Attenuation to NW Tower (70m)	23	23	23	23	Distance Attenuation to NW Tower (70m)	23	23	23	23
Predicted Level at MP1	26	43	40	33	Predicted Level at MP1	29	48	45	36	Predicted Level at MP1	43	55	52	46
MCC Requirements Night	43	55	52	46	MCC Requirements Night	43	55	52	46	MCC Requirements Night	43	55	52	46
Level Diff	-17	-12	-12	-13	Level Diff	-14	-7	-7	-10	Level Diff	0	0	0	0

4.1.3 The results have been used to determine the maximum internal music noise level which will comply with the requirements of condition 13 for the daytime and the night-time situations. Table 4 below details the maximum internal levels for the worst-case scenario of both sets of doors open situation. In all other situations, doors fully closed and outer door open, the predicted music noise breakout is significantly below the condition 13 requirements.

Table 5. Maximum FOH Limits Levels

Maximum Internal FOH Levels	L _{Aeq}	L _{Ceq}	63	125
Both Door Sets Open	[dB]	[dB]	[dB]	[dB]
Max FOH level Day	97	102	99	97
Max FOH level 23:00-02:00	94	102	99	97

4.1.4 Realistically the event space will not require music noise above 94dB(A) and 102dB(C) to operate effectively.

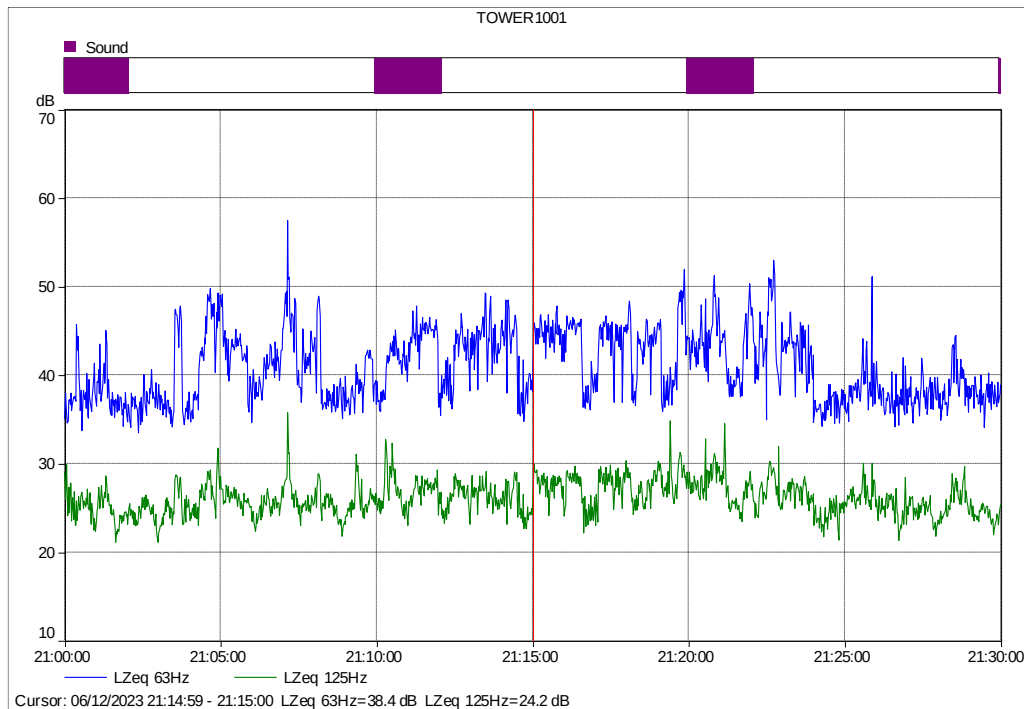
4.2 Validation Assessment

4.2.1 The external meter on the platform opposite the Northwest Tower and the internal meter at Room 403 in Tower 1 have also been analysed for validation purposes. Music noise was only periodically audible at very low level at the Platform location due to high levels of extraneous transportation noise and therefore was not used for assessment purposes as the degree of uncertainty was too high.

4.2.2 The internal results from room 403 were however able to be used and Figure 4 below presents part of the time profile during the assessment period and does indicate a change in level at 63Hz with increase in music noise. The results have therefore been assessed as part of the validation exercise.

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Figure 4. Tower 1 Room 403 21:00 to 21:30 63Hz and 125Hz 1 Second Time Profile



4.2.3 Table 5 below details the internal noise assessment based on the measured levels within Room 403 and the worst-case scenario of internal and external door sets open.

Table 6. Room 403 Internal Noise Assessment 63Hz and 125Hz

Tower 1 Room 403	63	125
Both Door Sets Open	[dB]	[dB]
Internal Level EDM 21:17	110	99
Room, 403 21:17 Windows closed	44	28
Ambient without music	36	24
Music Noise Level	43	26
Window Open Predicted (+5dB)	48	31
MCC Requirements	47	41
Level Diff	1	-10
Proposed Internal Limit	99	97
Predicted Internal Windows Open	37	29
MCC Requirements	47	41
Level Diff	-10	-12

4.2.4 The assessment indicates that for the proposed FOH limit levels, internal noise levels with windows partially open will be below MCC 63Hz and 125Hz internal noise level requirements by 10dB and 12dB respectively.

5. Sound Control Procedures

5.1 Sound Monitoring Control

- 5.1.1 The music sound levels at the mixing desk position within the Foyer have been continually monitored using B&K 2245 and Noisy venue noise monitoring system for events up to the end of 2023. The system provides the sound engineer with a traffic light display system on a tablet next to the sound meter so they can ensure that performances do not exceed the guideline limit derived from the Foyer noise assessment. Pre and post 23.00 limits can be set, and the system is designed so that limits can change automatically at predetermined times. (see inset for FOH engineer display system).

Figure 5. FOH Noisy Venue Noise Monitoring System Set Up



- 5.1.2 For future events FI will monitor sound levels at FOH using SMART audio and/or a hand held sound level meter.

5.2 Community Engagement

- 5.2.1 Should complaints of music noise arise during events, the details will be logged by the onsite Event Management Team and passed onto a member of the FI team who will undertake a spot check (where practicable) to check against guideline criteria. Where an intervention will be necessary to ensure MNL's are compliant, instruction will be relayed to the relevant sound engineer. Details of community comment /complaint information are provided below.

- Website page which includes some information about all events planned at the venue not just the confirmed ones: <https://factoryinternational.org/aviva-studios/visit/neighbours/>

- Dedicated inbox for local residents to email us with enquiries neighbours@factoryinternational.org
- Phone number provided to contact the venue directly with any issues – this is a landline or re-directed to the Duty Front of House Manager on events: 0161 843 8900

5.2.2 FI has established a Neighbours Forum who will meet regularly to discuss any issues that local residents are facing and will be able to seek feedback from operational teams.

5.2.3 A template complaint/comment form is presented at Appendix C.

5.3 Patron Noise

5.3.1 Patron noise during ingress and egress can, if not managed effectively, cause noise disturbance to the surrounding community. Factory International are experienced at logistical crowd management and the following measures are a brief overview of some of the measures that will be undertaken to limit impact from patron noise. Further details will be provided within the event management plan.

- Routing to avoid ingress/egress past residential areas where practicable.
- Marshalling of audience to ensures quick ingress and egress.
- Signage to inform audience of behavioural requirements.
- Training of marshals to encourage good behaviour in audience.

6. Conclusions

6.1.1 Three Spires Acoustics Ltd have undertaken a noise assessment of breakout of noise from the use of the Foyer area for entertainment events at Factory International, Water Street, Manchester, M3 4JQ. The assessment has been used to derive maximum interval FOH limit level in order to comply with the requirements of condition 13 of planning consent 130034/JO/2021.

6.1.2 The Foyer noise assessment has considered different situations with entrance doors open and closed and established front of house limiting criteria which will achieve MCC requirements for pre and post 11pm situations.

6.1.3 Validation testing has been undertaken which indicates that the proposed limiting criteria will result in compliance with condition 13.

6.1.4 It is therefore considered that this report demonstrates that condition 13 of planning consent 130034/JO/2021 has been suitable complied with and therefore maybe discharged.

Appendix A: Results

Table 7. Main Entrance Music Noise Predictions

MP1 NW Tower Main Entrance: 5m from Doors					MP1 NW Tower Main Entrance: 5m from Doors					MP1 NW Tower Main Entrance: 5m from Doors				
All Doors Closed					Outer Doors Open					Both Door Sets Open				
	L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125
	[dB]	dB	[dB]	[dB]		[dB]	dB	[dB]	[dB]		[dB]	dB	[dB]	[dB]
Internal Level EDM 21:05 Leq,1min	101	111	110	99	Internal Level EDM 21:20	101	111	110	100	Internal Level EDM 21:17	102	111	110	99
Measured Level at 21:05 Leq,1min	59	75	74	60	Measured Level at 21:20 Leq,1min	63	78	77	67	Measured Level at 21:17 Leq,1min	73	81	78	72
Ambient	56	65	59	55	Ambient	56	65	59	55	Ambient	56	65	59	55
Music Noise Level	56	75	74	58	Music Noise Level	59	80	79	62	Music Noise Level	73	87	86	71
Distance Attenuation to NW Tower (70m)	23	23	23	23	Distance Attenuation to NW Tower (70m)	23	23	23	23	Distance Attenuation to NW Tower (70m)	23	23	23	23
Predicted Level at MP1	33	52	51	35	Predicted Level at MP1	36	57	56	39	Predicted Level at MP1	50	64	63	48
MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46
Level Diff	-12	-3	-1	-11	Level Diff	-9	2	4	-7	Level Diff	5	9	11	2
Max internal level Day	113	114	111	110	Max internal level Day	110	109	106	107	Max internal level Day	97	102	99	97
Recommended Internal Post 23.00	94	102	99	97	Recommended Internal Post 23.00	94	102	99	97	Recommended Internal Post 23.00	94	102	99	97
Inside Outside	45	36	36	41	Inside Outside	42	31	31	38	Inside Outside	29	24	24	28
Music Noise Level	49	66	63	56	Music Noise Level	52	71	68	59	Music Noise Level	66	78	75	69
Distance Attenuation to NW Tower (70m)	23	23	23	23	Distance Attenuation to NW Tower (70m)	23	23	23	23	Distance Attenuation to NW Tower (70m)	23	23	23	23
Predicted Level at MP1	26	43	40	33	Predicted Level at MP1	29	48	45	36	Predicted Level at MP1	43	55	52	46
MCC Requirements Night	43	55	52	46	MCC Requirements Night	43	55	52	46	MCC Requirements Night	43	55	52	46
Level Diff	-17	-12	-12	-13	Level Diff	-14	-7	-7	-10	Level Diff	0	0	0	0
MP2 Tower 1 Main Entrance: 5m from Doors					MP2 Tower 1 Main Entrance: 5m from Doors					MP2 Tower 1 Main Entrance: 5m from Doors				
All Doors Closed					Outer Doors Open					Both Door Sets Open				
	L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125
	[dB]	dB	[dB]	[dB]		[dB]	dB	[dB]	[dB]		[dB]	dB	[dB]	[dB]
Internal Level EDM 21:05 Leq,1min	101	111	110	99	Internal Level EDM 21:20	101	111	110	100	Internal Level EDM 21:17	102	111	110	99
Measured Level at 21:05 Leq,1min	59	75	74	60	Measured Level at 21:20 Leq,1min	63	78	77	67	Measured Level at 21:17 Leq,1min	73	81	78	72
Ambient	56	65	59	55	Ambient	56	65	59	55	Ambient	56	65	59	55
Music Noise Level	56	75	74	58	Music Noise Level	59	80	79	62	Music Noise Level	73	87	86	71
Distance Attenuation to MP2 (130m)	28	28	28	28	Distance Attenuation to MP2 (130m)	28	28	28	28	Distance Attenuation to MP2 (130m)	28	28	28	28
Predicted Level at MP2	28	47	46	30	Predicted Level at MP2	31	52	51	34	Predicted Level at MP2	45	59	58	43
MCC Requirements	45	55	52	46	MCC Requirements	48	55	52	46	MCC Requirements	45	55	52	46
Level Diff	-17	-8	-6	-16	Level Diff	-17	-3	-1	-12	Level Diff	0	4	6	-3
Max internal level Day	118	119	116	115	Max internal level Day	118	114	111	112	Max internal level Day	102	107	104	102
Recommended Internal Post 23.00	94	102	99	97	Recommended Internal Post 23.00	94	102	99	97	Recommended Internal Post 23.00	94	102	99	97
Inside Outside	45	36	36	41	Inside Outside	42	31	31	38	Inside Outside	29	24	24	28
Music Noise Level	49	66	63	56	Music Noise Level	52	71	68	59	Music Noise Level	66	78	75	69
Distance Attenuation to MP2 (130m)	28	28	28	28	Distance Attenuation to MP2 (130m)	28	28	28	28	Distance Attenuation to MP2 (130m)	28	28	28	28
Predicted Level at MP2	21	38	35	28	Predicted Level at MP2	24	43	40	31	Predicted Level at MP2	38	50	47	41
MCC Requirements Night	43	55	52	46	MCC Requirements Night	38	55	52	46	MCC Requirements Night	43	55	52	46
Level Diff	-22	-17	-17	-18	Level Diff	-14	-12	-12	-15	Level Diff	-6	-5	-5	-5
MP3 Marriot Hotel Main Entrance: 5m from Doors					MP3 Marriot Hotel Main Entrance: 5m from Doors					MP3 Marriot Hotel Main Entrance: 5m from Doors				
All Doors Closed					Outer Doors Open					Both Door Sets Open				
	L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125
	[dB]	dB	[dB]	[dB]		[dB]	dB	[dB]	[dB]		[dB]	dB	[dB]	[dB]
Internal Level EDM 21:05 Leq,1min	101	111	110	99	Internal Level EDM 21:20	101	111	110	100	Internal Level EDM 21:17	102	111	110	99
Measured Level at 21:05 Leq,1min	59	75	74	60	Measured Level at 21:20 Leq,1min	63	78	77	67	Measured Level at 21:17 Leq,1min	73	81	78	72
Ambient	56	65	59	55	Ambient	56	65	59	55	Ambient	56	65	59	55
Music Noise Level	56	75	74	58	Music Noise Level	59	80	79	62	Music Noise Level	73	87	86	71
Distance Attenuation to MP3 (150m)	30	30	30	30	Distance Attenuation to MP3 (150m)	30	30	30	30	Distance Attenuation to MP3 (150m)	30	30	30	30
Predicted Level at MP3	26	45	44	28	Predicted Level at MP3	29	50	49	32	Predicted Level at MP3	43	57	56	41
MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46
Level Diff	-19	-10	-8	-18	Level Diff	-16	-5	-3	-14	Level Diff	-2	2	4	-5
Max internal level Day	120	121	118	117	Max internal level Day	117	116	113	114	Max internal level Day	104	109	106	104
Recommended Internal Post 23.00	94	102	99	97	Recommended Internal Post 23.00	94	102	99	97	Recommended Internal Post 23.00	94	102	99	97
Inside Outside	36	36	41		Inside Outside	42	31	31	38	Inside Outside	29	24	24	28
Music Noise Level	66	63	56		Music Noise Level	52	71	68	59	Music Noise Level	66	78	75	69
Distance Attenuation to MP3 (150m)	30	30	30		Distance Attenuation to MP3 (150m)	30	30	30	30	Distance Attenuation to MP3 (150m)	30	30	30	30
Predicted Level at MP3	36	33	26		Predicted Level at MP3	22	41	38	29	Predicted Level at MP3	36	48	45	39
MCC Requirements Night	55	52	46		MCC Requirements Night	43	55	52	46	MCC Requirements Night	43	55	52	46
Level Diff	-19	-19	-20		Level Diff	-21	-14	-14	-17	Level Diff	-2	-7	-7	-7
MP4 Stanley Street Main Entrance: 5m from Doors					MP4 Stanley Street Main Entrance: 5m from Doors					MP4 Stanley Street Main Entrance: 5m from Doors				
All Doors Closed					Outer Doors Open					Both Door Sets Open				
	L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125
	[dB]	dB	[dB]	[dB]		[dB]	dB	[dB]	[dB]		[dB]	dB	[dB]	[dB]
Internal Level EDM 21:05 Leq,1min	101	111	110	99	Internal Level EDM 21:20	101	111	110	100	Internal Level EDM 21:17	102	111	110	99
Measured Level at 21:05 Leq,1min	59	75	74	60	Measured Level at 21:20 Leq,1min	63	78	77	67	Measured Level at 21:17 Leq,1min	73	81	78	72
Ambient	56	65	59	55	Ambient	56	65	59	55	Ambient	56	65	59	55
Music Noise Level	56	75	74	58	Music Noise Level	59	80	79	62	Music Noise Level	73	87	86	71
Distance Attenuation to MP4 (110m)	27	27	27	27	Distance Attenuation to MP4 (110m)	27	27	27	27	Distance Attenuation to MP4 (110m)	27	27	27	27
Predicted Level at MP4	29	48	47	31	Predicted Level at MP4	32	53	52	35	Predicted Level at MP4	46	60	59	44
MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46
Level Diff	-16	-7	-5	-15	Level Diff	-13	-2	0	-11	Level Diff	1	5	7	-2
Max internal level Day	117	118	115	114	Max internal level Day	114	113	110	111	Max internal level Day	101	106	103	101
Recommended Internal Post 23.00	102	99	97		Recommended Internal Post 23.00	94	102	99	97	Recommended Internal Post 23.00	94	102	99	97
Inside Outside	36	36	41		Inside Outside	42	31	31	38	Inside Outside	29	24	24	28
Music Noise Level	66	63	56		Music Noise Level	52	71	68	59	Music Noise Level	66	78	75	69
Distance Attenuation to MP4 (110m)	27	27	27		Distance Attenuation to MP4 (110m)	27	27	27	27	Distance Attenuation to MP4 (110m)	27	27	27	27
Predicted Level at MP4	39	36	29		Predicted Level at MP4	25	44	41	32	Predicted Level at MP4	39	51	48	42
MCC Requirements Night	55	52	46		MCC Requirements Night	43	55	52	46	MCC Requirements Night	43	55	52	46
Level Diff	-16	-16	-17		Level Diff	-18	-11	-11	-14	Level Diff	-5	-4	-4	-4

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Table 8. Water St Bridge Entrance Music Noise Predictions

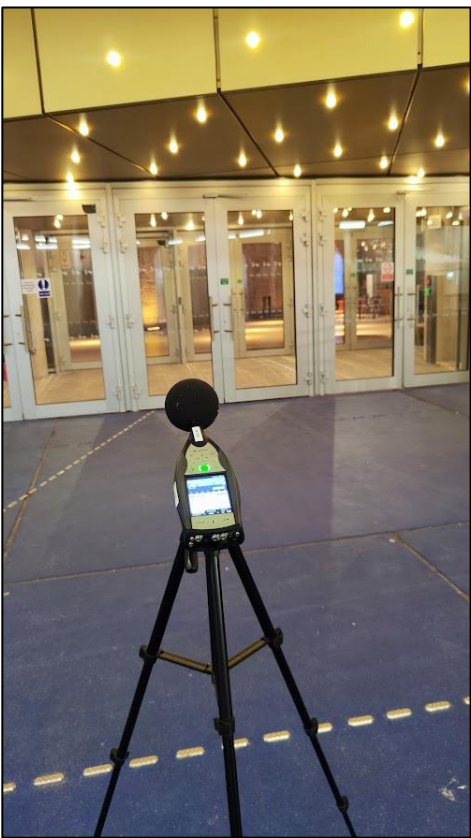
MP4 Stanley Street Water St Bridge Entrance: 5m from Doors					MP4 Stanley Street Water St Bridge Entrance: 5m from Doors					MP4 Stanley Street Water St Bridge Entrance: 5m from Doors				
	L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125
All Doors Closed	[dB]	[dB]	[dB]	[dB]	Outer Doors Open	[dB]	[dB]	[dB]	[dB]	Both Door Sets Open	[dB]	[dB]	[dB]	[dB]
Internal Level EDM 21:05 Leq,1min	101	111	110	99	Internal Level EDM 21:20	101	111	110	100	Internal Level EDM 21:17	102	111	110	99
Measured Level at 21:05 Leq,1min	54	75	74	57	Measured Level at 21:20 Leq,1min	60	80	79	62	Measured Level at 21:17 Leq,1min	73	87	86	71
Ambient	53	59	54	49	Ambient	53	59	54	49	Ambient	53	59	54	49
Music Noise Level	54	75	74	56	Music Noise Level	59	80	79	62	Music Noise Level	73	87	86	71
Distance Attenuation to Stanley Street (125m)	28	28	28	28	Distance Attenuation to Stanley Street (125m)	28	28	28	28	Distance Attenuation to Stanley Street (125m)	28	28	28	28
Predicted Level at MP4	26	47	46	28	Predicted Level at MP4	31	52	51	34	Predicted Level at MP4	45	59	58	43
MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46
Level Diff	-19	-8	-6	-18	Level Diff	-14	-3	-1	-12	Level Diff	0	4	6	-3
Max internal level	120	119	116	117	Max internal level	115	114	111	112	Max internal level	102	107	104	102
Recommended Internal	94	102	99	97	Recommended Internal	94	102	99	97	Recommended Internal	94	102	99	97
Inside Outside	36	36	43		Inside Outside	42	31	31	38	Inside Outside	29	24	24	28
Music Noise Level	66	63	54		Music Noise Level	52	71	68	59	Music Noise Level	66	78	75	69
Distance Attenuation to Stanley Street (125m)	28	28	28		Distance Attenuation to Stanley Street (125m)	28	28	28	28	Distance Attenuation to Stanley Street (125m)	28	28	28	28
Predicted Level at MP4	38	35	26		Predicted Level at MP4	24	43	40	31	Predicted Level at MP4	38	50	47	41
MCC Requirements Night	55	52	46		MCC Requirements Night	43	55	52	46	MCC Requirements Night	43	55	52	46
Level Diff	-17	-17	-20		Level Diff	-19	-12	-12	-15	Level Diff	-6	-5	-5	-5
MP5 Wilburn Basin Water St Bridge Entrance: 5m from Doors					MP5 Wilburn Basin Water St Bridge Entrance: 5m from Doors					MP5 Wilburn Basin Water St Bridge Entrance: 5m from Doors				
	L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125
All Doors Closed	[dB]	[dB]	[dB]	[dB]	Outer Doors Open	[dB]	[dB]	[dB]	[dB]	Both Door Sets Open	[dB]	[dB]	[dB]	[dB]
Internal Level EDM 21:05 Leq,1min	101	111	110	99	Internal Level EDM 21:20	101	111	110	100	Internal Level EDM 21:17	102	111	110	99
Measured Level at 21:05 Leq,1min	54	75	74	57	Measured Level at 21:20 Leq,1min	60	80	79	62	Measured Level at 21:17 Leq,1min	73	87	86	71
Ambient	53	59	54	49	Ambient	53	59	54	49	Ambient	53	59	54	49
Music Noise Level	54	75	74	56	Music Noise Level	59	80	79	62	Music Noise Level	73	87	86	71
Distance Attenuation to Wilburn Basin (270m)	35	35	35	35	Distance Attenuation to Wilburn Basin (270m)	35	35	35	35	Distance Attenuation to Wilburn Basin (270m)	35	35	35	35
Predicted Level at MP5	19	40	39	21	Predicted Level at MP5	24	45	44	27	Predicted Level at MP5	38	52	51	36
MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46
Level Diff	-26	-15	-13	-25	Level Diff	-21	-10	-8	-19	Level Diff	-7	-3	-1	-10
Max internal level	127	126	123	124	Max internal level	122	121	118	119	Max internal level	109	114	111	109
Recommended Internal	94	102	99	97	Recommended Internal	94	102	99	97	Recommended Internal	94	102	99	97
Inside Outside	36	36	43		Inside Outside	42	31	31	38	Inside Outside	29	24	24	28
Music Noise Level	66	63	54		Music Noise Level	52	71	68	59	Music Noise Level	66	78	75	69
Distance Attenuation to Wilburn Basin (270m)	35	35	35		Distance Attenuation to Wilburn Basin (270m)	35	35	35	35	Distance Attenuation to Wilburn Basin (270m)	35	35	35	35
Predicted Level at MP5	31	28	19		Predicted Level at MP5	17	36	33	24	Predicted Level at MP5	31	43	40	34
MCC Requirements Night	55	52	46		MCC Requirements Night	43	55	52	46	MCC Requirements Night	43	55	52	46
Level Diff	-24	-24	-27		Level Diff	-26	-19	-19	-22	Level Diff	-7	-12	-12	-12
MP6 Water Street Junction Water St Bridge Entrance: 5m from Doors					MP6 Water Street Junction Water St Bridge Entrance: 5m from Doors					MP6 Water Street Junction Water St Bridge Entrance: 5m from Doors				
	L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125		L _{Aeq}	L _{Ceq}	63	125
All Doors Closed	[dB]	[dB]	[dB]	[dB]	Outer Doors Open	[dB]	[dB]	[dB]	[dB]	Both Door Sets Open	[dB]	[dB]	[dB]	[dB]
Internal Level EDM 21:05 Leq,1min	101	111	110	99	Internal Level EDM 21:20	101	111	110	100	Internal Level EDM 21:17	102	111	110	99
Measured Level at 21:05 Leq,1min	54	75	74	57	Measured Level at 21:20 Leq,1min	60	80	79	62	Measured Level at 21:17 Leq,1min	73	87	86	71
Ambient	53	59	54	49	Ambient	53	59	54	49	Ambient	53	59	54	49
Music Noise Level	54	75	74	56	Music Noise Level	59	80	79	62	Music Noise Level	73	87	86	71
Distance Attenuation to Water St (130m)	28	28	28	28	Distance Attenuation to Water St (130m)	28	28	28	28	Distance Attenuation to Water St (130m)	28	28	28	28
Predicted Level at MP6	26	47	46	28	Predicted Level at MP6	31	52	51	34	Predicted Level at MP6	45	59	58	43
MCC Requirements	45	55	52	46	MCC Requirements	45	55	52	46	MCC Requirements Day	45	55	52	46
Level Diff	-19	-8	-6	-18	Level Diff	-14	-3	-1	-12	Level Diff	0	4	6	-3
Max internal level	120	119	116	117	Max internal level	115	114	111	112	Max internal level	102	107	104	102
Recommended Internal	94	102	99	97	Recommended Internal	94	102	99	97	Recommended Internal	94	102	99	97
Inside Outside	36	36	43		Inside Outside	42	31	31	38	Inside Outside	29	24	24	28
Music Noise Level	66	63	54		Music Noise Level	52	71	68	59	Music Noise Level	66	78	75	69
Distance Attenuation to Water St (130m)	28	28	28		Distance Attenuation to Water St (130m)	28	28	28	28	Distance Attenuation to Water St (130m)	28	28	28	28
Predicted Level at MP6	38	35	26		Predicted Level at MP6	24	43	40	31	Predicted Level at MP6	38	50	47	41
MCC Requirements Night	55	52	46		MCC Requirements Night	43	55	52	46	MCC Requirements Night	43	55	52	46
Level Diff	-17	-17	-20		Level Diff	-19	-12	-12	-15	Level Diff	-6	-5	-5	-5

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Table 9. Background Monitoring Results

PLATFORM002		Report									
Wednesday	Stop	L _{Aeq}	L _{Ceq}	LAF90.0	LZF90.0 63 Hz	LZF90.0 125 Hz	LZF90.0 250 Hz	LZF90.0 500 Hz	LZF90.0 1 kHz	LZF90.0 2 kHz	LZF90.0 4 kHz
06/12/2023 18:00	06/12/2023 19:00	58	70	54	56	54	53	50	50	44	31
06/12/2023 19:00	06/12/2023 20:00	57	73	54	56	54	53	50	50	44	30
06/12/2023 20:00	06/12/2023 21:00	57	75	53	55	53	53	50	50	43	30
06/12/2023 21:00	06/12/2023 22:00	57	74	53	55	53	52	50	50	43	30
06/12/2023 22:00	06/12/2023 23:00	57	73	53	54	53	52	50	50	43	30
PLATFORM003		Report									
Thursday	Stop	L _{Aeq}	L _{Ceq}	LAF90.0	LZF90.0 63 Hz	LZF90.0 125 Hz	LZF90.0 250 Hz	LZF90.0 500 Hz	LZF90.0 1 kHz	LZF90.0 2 kHz	LZF90.0 4 kHz
06/12/2023 23:00	07/12/2023 00:00	57	68	52	53	52	52	49	49	42	29
07/12/2023 00:00	07/12/2023 01:00	55	71	51	52	51	51	48	47	41	28
07/12/2023 01:00	07/12/2023 02:00	54	70	50	50	51	51	47	46	40	28
07/12/2023 17:00	07/12/2023 18:00	66	73	59	58	56	56	54	54	51	43
07/12/2023 18:00	07/12/2023 19:00	58	70	55	55	53	52	50	51	47	39
07/12/2023 19:00	07/12/2023 20:00	57	68	55	55	53	52	51	51	46	37
07/12/2023 20:00	07/12/2023 21:00	59	66	56	53	52	53	53	53	46	37
07/12/2023 21:00	07/12/2023 22:00	58	64	54	55	52	52	50	51	46	35
07/12/2023 22:00	07/12/2023 23:00	59	64	55	54	52	52	50	51	46	36
PLATFORM004		Report									
Friday	Stop	L _{Aeq}	L _{Ceq}	LAF90.0	LZF90.0 63 Hz	LZF90.0 125 Hz	LZF90.0 250 Hz	LZF90.0 500 Hz	LZF90.0 1 kHz	LZF90.0 2 kHz	LZF90.0 4 kHz
07/12/2023 23:00	08/12/2023 00:00	59	64	54	54	53	52	50	51	46	35
08/12/2023 00:00	08/12/2023 01:00	57	63	53	53	52	52	49	50	44	33
08/12/2023 01:00	08/12/2023 02:00	56	63	53	52	52	51	49	50	44	33
08/12/2023 02:00	08/12/2023 03:00	55	62	52	52	51	51	48	48	42	32
08/12/2023 18:00	08/12/2023 19:00	59	67	57	56	54	53	52	53	48	41
08/12/2023 19:00	08/12/2023 20:00	61	66	57	56	54	53	52	53	49	41
08/12/2023 20:00	08/12/2023 21:00	61	68	59	56	54	54	55	55	50	44
08/12/2023 21:00	08/12/2023 22:00	61	67	57	55	53	53	52	54	49	43
08/12/2023 22:00	08/12/2023 23:00	62	68	58	55	53	53	52	54	50	44
PLATFORM005		Report									
Saturday	Stop	L _{Aeq}	L _{Ceq}	LAF90.0	LZF90.0 63 Hz	LZF90.0 125 Hz	LZF90.0 250 Hz	LZF90.0 500 Hz	LZF90.0 1 kHz	LZF90.0 2 kHz	LZF90.0 4 kHz
08/12/2023 23:00	09/12/2023 00:00	62	68	57	56	53	53	52	53	49	43
09/12/2023 00:00	09/12/2023 01:00	59	65	56	54	52	52	51	52	48	40
09/12/2023 01:00	09/12/2023 02:00	59	66	55	53	51	51	49	51	47	41
09/12/2023 17:00	09/12/2023 18:00	70	90	61	61	58	57	56	57	54	46
09/12/2023 18:00	09/12/2023 19:00	74	93	63	65	60	58	57	58	56	52
09/12/2023 19:00	09/12/2023 20:00	73	92	62	65	60	58	58	58	55	51
09/12/2023 20:00	09/12/2023 21:00	73	92	63	66	60	58	58	58	56	52
09/12/2023 21:00	09/12/2023 22:00	70	89	62	63	58	56	57	57	55	50
09/12/2023 22:00	09/12/2023 23:00	72	91	62	63	58	56	56	58	55	49
PLATFORM006		Report									
Sunday	Stop	L _{Aeq}	L _{Ceq}	LAF90.0	LZF90.0 63 Hz	LZF90.0 125 Hz	LZF90.0 250 Hz	LZF90.0 500 Hz	LZF90.0 1 kHz	LZF90.0 2 kHz	LZF90.0 4 kHz
09/12/2023 23:00	10/12/2023 00:00	70	89	62	63	57	56	57	58	55	49
10/12/2023 00:00	10/12/2023 01:00	70	89	61	61	56	55	55	57	53	47
10/12/2023 01:00	10/12/2023 02:00	66	84	58	57	53	52	52	54	50	43
10/12/2023 02:00	10/12/2023 03:00	60	74	55	52	50	50	49	51	47	37
10/12/2023 18:00	10/12/2023 19:00	61	66	57	55	53	53	52	53	49	40
10/12/2023 19:00	10/12/2023 20:00	62	68	58	56	53	53	52	54	51	44
10/12/2023 20:00	10/12/2023 21:00	62	69	57	55	52	51	51	53	50	45
10/12/2023 21:00	10/12/2023 22:00	62	69	58	55	52	52	52	54	51	44
10/12/2023 22:00	10/12/2023 23:00	64	74	59	56	53	53	53	55	53	49
PLATFORM007		Report									
Monday	Stop	L _{Aeq}	L _{Ceq}	LAF90.0	LZF90.0 63 Hz	LZF90.0 125 Hz	LZF90.0 250 Hz	LZF90.0 500 Hz	LZF90.0 1 kHz	LZF90.0 2 kHz	LZF90.0 4 kHz
10/12/2023 23:00	11/12/2023 00:00	66	81	58	57	54	53	53	54	50	44
11/12/2023 00:00	11/12/2023 01:00	63	80	54	52	48	48	48	50	46	39
11/12/2023 01:00	11/12/2023 02:00	59	76	51	52	48	46	45	47	44	37
11/12/2023 18:00	11/12/2023 19:00	58	64	54	54	53	52	50	51	45	34
11/12/2023 19:00	11/12/2023 20:00	59	64	54	53	52	52	50	51	45	33
11/12/2023 20:00	11/12/2023 21:00	58	63	53	52	51	52	49	50	44	32
11/12/2023 21:00	11/12/2023 22:00	57	63	53	52	52	51	48	49	43	31
11/12/2023 22:00	11/12/2023 23:00	56	63	51	51	51	50	47	48	42	29
PLATFORM008		Report									
Start	Stop	L _{Aeq}	L _{Ceq}	LAF90.0	LZF90.0 63 Hz	LZF90.0 125 Hz	LZF90.0 250 Hz	LZF90.0 500 Hz	LZF90.0 1 kHz	LZF90.0 2 kHz	LZF90.0 4 kHz
11/12/2023 23:00	12/12/2023 00:00	55	63	51	51	50	50	47	47	41	29
12/12/2023 00:00	12/12/2023 01:00	57	64	49	50	49	50	45	44	38	26
12/12/2023 01:00	12/12/2023 02:00	54	64	48	48	48	49	44	43	39	28
12/12/2023 18:00	12/12/2023 19:00	56	62	52	51	49	50	47	48	43	32
12/12/2023 19:00	12/12/2023 20:00	57	62	52	51	49	50	47	49	43	32
12/12/2023 20:00	12/12/2023 21:00	57	62	52	49	49	50	47	48	43	32
12/12/2023 21:00	12/12/2023 22:00	58	62	51	49	49	50	47	48	43	31
12/12/2023 22:00	12/12/2023 23:00	57	61	52	50	49	51	48	49	44	31
PLATFORM009		Report									
Start	Stop	L _{Aeq}	L _{Ceq}	LAF90.0	LZF90.0 63 Hz	LZF90.0 125 Hz	LZF90.0 250 Hz	LZF90.0 500 Hz	LZF90.0 1 kHz	LZF90.0 2 kHz	LZF90.0 4 kHz
12/12/2023 23:00	13/12/2023 00:00	56	62	51	48	48	49	47	47	42	30
13/12/2023 00:00	13/12/2023 01:00	54	59	50	47	48	48	46	46	41	28
13/12/2023 01:00	13/12/2023 02:00	53	59	48	46	47	47	45	44	39	28
13/12/2023 18:00	13/12/2023 19:00	58	66	53	52	56	50	49	50	44	31
13/12/2023 19:00	13/12/2023 20:00	58	65	53	51	54	49	48	50	44	30
13/12/2023 20:00	13/12/2023 21:00	58	64	53	50	54	49	48	50	44	30
13/12/2023 21:00	13/12/2023 22:00	57	62	52	50	52	49	48	49	43	29
13/12/2023 22:00	13/12/2023 23:00	57	62	52	50	52	50	48	49	43	29
PLATFORM010		Report									
Start	Stop	L _{Aeq}	L _{Ceq}	LAF90.0	LZF90.0 63 Hz	LZF90.0 125 Hz	LZF90.0 250 Hz	LZF90.0 500 Hz	LZF90.0 1 kHz	LZF90.0 2 kHz	LZF90.0 4 kHz
13/12/2023 23:00	14/12/2023 00:00	57	63	52	49	53	51	48	48	42	29
14/12/2023 00:00	14/12/2023 01:00	54	61	50	49	52	49	46	46	40	26
14/12/2023 01:00	14/12/2023 02:00	52	59	47	49	52	49	44	42	36	23
14/12/2023 18:00	14/12/2023 19:00	60	64	55	55	53	53	51	52	46	33
14/12/2023 19:00	14/12/2023 20:00	60	65	56	54	52	53	51	53	47	33
14/12/2023 20:00	14/12/2023 21:00	59	63	55	53	52	53	50	52	46	32
14/12/2023 21:00	14/12/2023 22:00	58	63	55	53	52	53	50	52	45	32
14/12/2023 22:00	14/12/2023 23:00	59	63	55	53	51	53	50	52	46	32
PLATFORM011		Report									
Start	Stop	L _{Aeq}	L _{Ceq}	LAF90.0	LZF90.0 63 Hz	LZF90.0 125 Hz	LZF90.0 250 Hz	LZF90.0 500 Hz	LZF90.0 1 kHz	LZF90.0 2 kHz	LZF90.0 4 kHz
14/12/2023 23:00	15/12/2023 00:00	58	63	54	52	51	53	51	51	45	31
15/12/2023 00:00	15/12/2023 01:00	57	61	53	51	50	52	48	50	43	30
15/12/2023 01:00	15/12/2023 02:00	55	60	51	50	50	51	47	48	41	28
15/12/2023 18:00	15/12/2023 19:00	59	65	55	57	55	53	52	52	46	34
15/12/2023 19:00	15/12/2023 20:00	59	65	57	57	54	54	53	53	47	36
15/12/2023 20:00	15/12/2023 21:00	62	67	59	56	54	54	56	55	50	39
15/12/2023 21:00	15/12/2023 22:00	60	65	56	55	54	53	52	53	47	36
15/12/2023 22:00	15/12/2023 23:00	62	66	57	55	53	53	52	54	48	36

Appendix B: Equipment Photographs



Appendix C: Noise Complaint/Comment Template

Factory International	Noise Complaint/Comment
Date and Time Complaint Received	
Name of Complainant	
Address of Complainant	
Telephone number and email of complainant	
Location of noise disturbance (address)	
Time disturbance noted	
Nature of complaint(Vocal, Bass, Music in General- Inside or outside)	
Additional Comment	
Visit Requested	
Action Taken	

Appendix D: DEFRA Noise Maps

Figure 6. DEFRA Noise Map LAeq,16hr

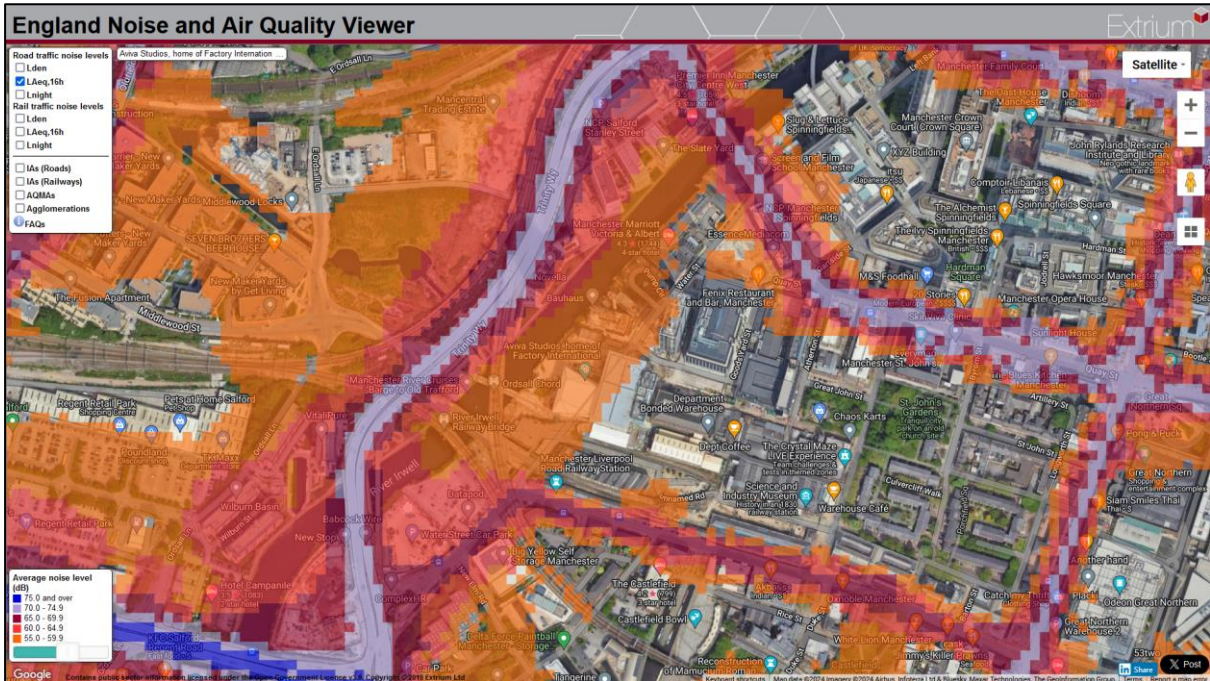
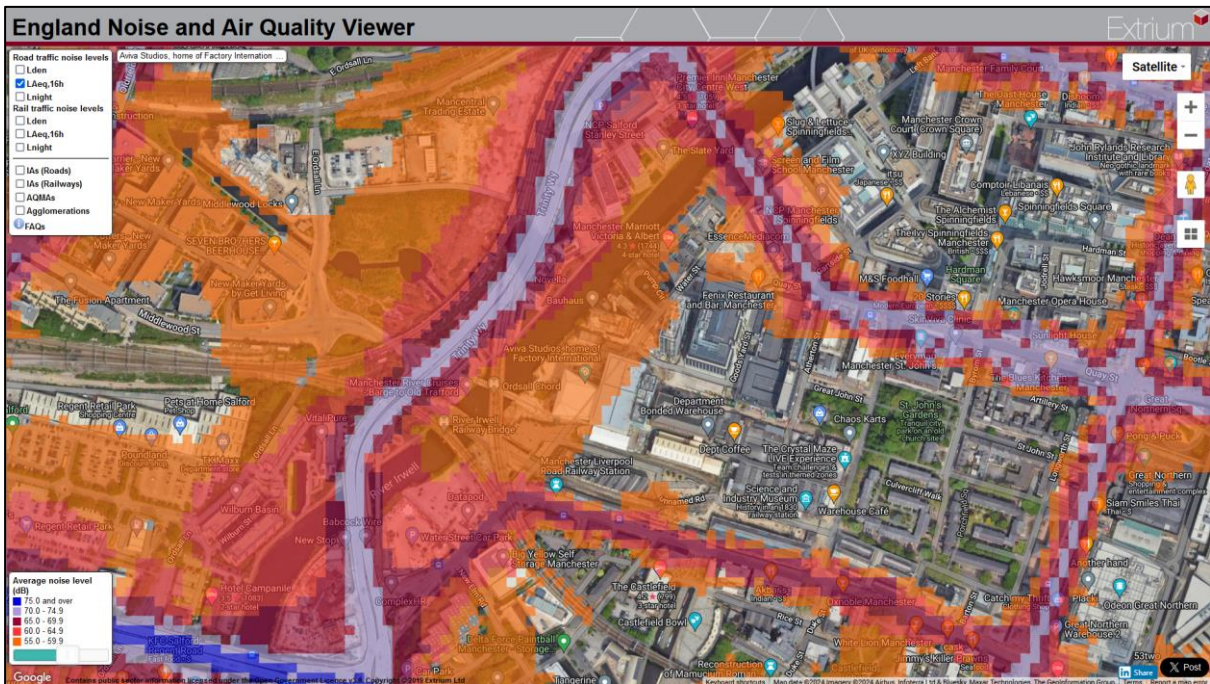


Figure 7. DEFRA Noise Map LAeq,8hr



Appendix E: Glossary of Terms

‘A’ weighting (dB(A)): A frequency dependent correction which weights sound to correlate with the sensitivity of the human ear to sounds of different frequencies.

Ambient Noise: A measure of the typical noise (excluding any unusual events) present at a site, or in a room. This is usually described in terms of $L_{Aeq,T}$.

Audible: Sound that can be heard or is perceptible by the human ear.

Background Noise: A measure of the underlying noise (excluding any unusual events) which is present at a site before a new noise source is introduced. This is usually described in terms of the LA_{90} level: the sound pressure level exceeded for 90% of the time.

Decibel (dB): A unit used for many acoustic quantities to indicate the level of sound with respect to a reference level.

External Amenity Space: An outdoor area near to a residential building which is designed and intended primarily for leisure and recreational use by the occupants of the dwelling. This will include gardens, patios, balconies, roof gardens and terraces.

Hertz: The tonal quality of a sound is described and measured in terms of the frequency content and is commonly expressed as octave or third octave bands, the latter being the division of the octave bands into three for finer analysis, across the frequency spectrum. The smaller the octave band or third octave band centre frequency number defined in terms of Hz, the lower the sound. For example 63 Hz is lower than 500 Hz and is perceived as a deeper sound. The attenuation due to air absorption and natural barriers increases with frequency i.e. low frequencies are always the most difficult to control

Inaudible: Sound that cannot be heard or is imperceptible to the human ear.

$LA_{90,T}$: Sound pressure level exceeded for 90% of the measurement period “T” or ‘background level’.

$L_{Aeq,T}$: Equivalent continuous sound pressure level measured over the time period “T”

L_{Amax} : The maximum RMS A weighted sound pressure level

Music Noise Level (MNL): The L_{eq} of music noise measured at a particular location.

Noise: Unwanted sound.

Noise assessment: A basic evaluation of an acoustic environment by a suitably qualified person to assist in the determination of a planning application..

Noise impact: the noise level of the source under consideration, and/or any change in noise levels due to the scheme, and/or the relationship between the noise level of the source under consideration and a descriptor of the existing noise climate; at a receptor or group of receptors.

Noise effect: the consequence of the noise impact e.g. annoyance, sleep disturbance, speech interference, disruption of learning/teaching, health consequences, fauna displacement etc. Noise

impact and noise effect are related to each other and the noise effect is related to the magnitude of the noise impact as well as other factors e.g. sensitivity of the receptor, duration of the noise, how frequently it occurs, the time of day or night it occurs, whether the noise is temporary, reversible or permanent etc.

Noise level (Lp): the logarithmic measure of the RMS sound pressure of a sound relative to a reference value that represents the threshold of hearing. It is measured in decibels (dB) e.g. $L_p = 20 \lg(p/p_0)$ dB re 20 μ Pa for air.

Noise sensitive premises / developments: Principally comprising residential premises, hospitals, schools and hotels. Other premises and sites may be deemed to be noise sensitive depending upon circumstances.

Typical sound pressure levels

