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Depot Mayfield Platform Area B

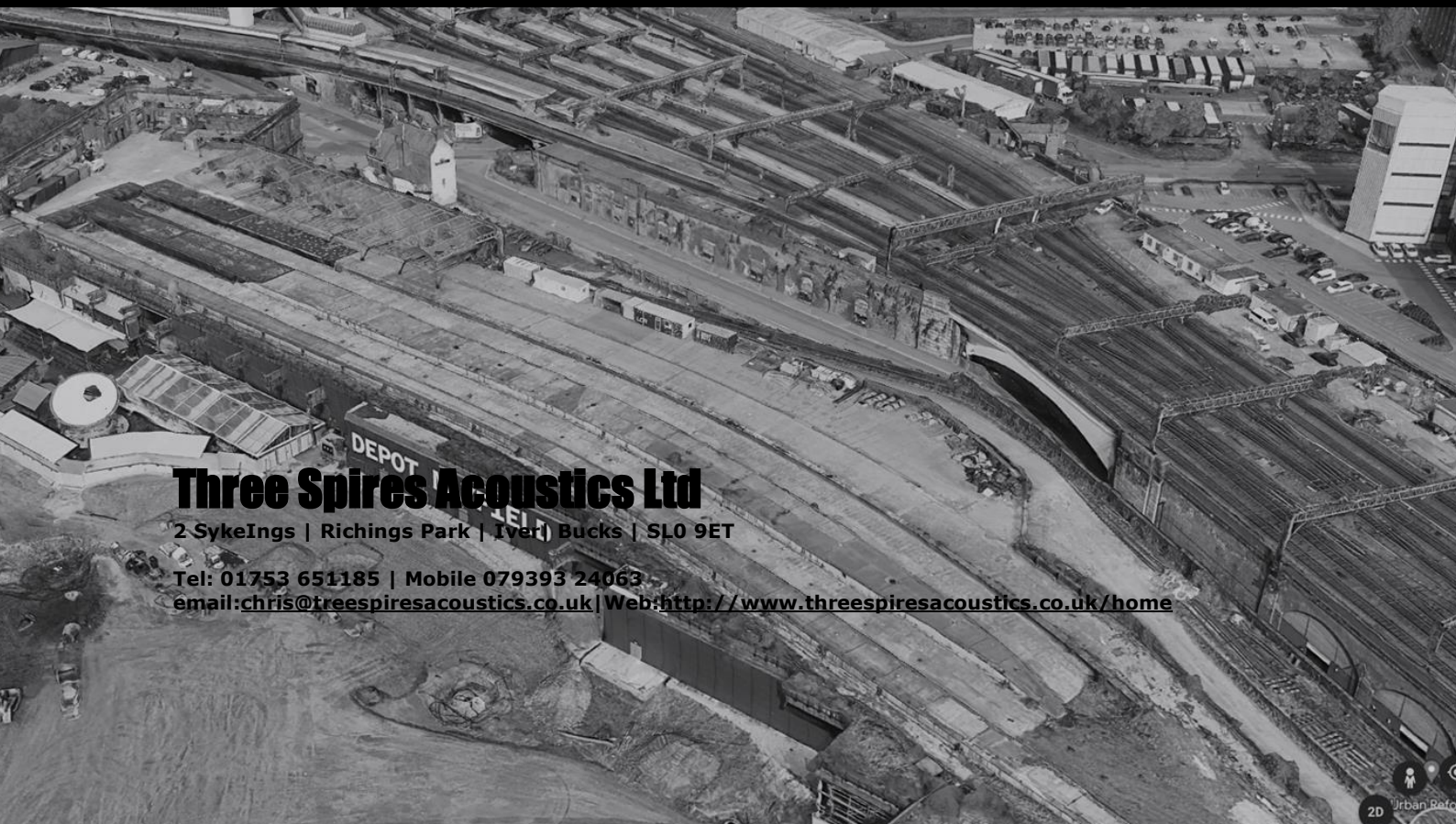
11 Baring Steet

Manchester

M1 2PY

Noise Impact Assessment

For: Engine No4



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DEPOT MAYFIELD PLATFORM AREA B

NOISE IMPACT ASSESSMENT

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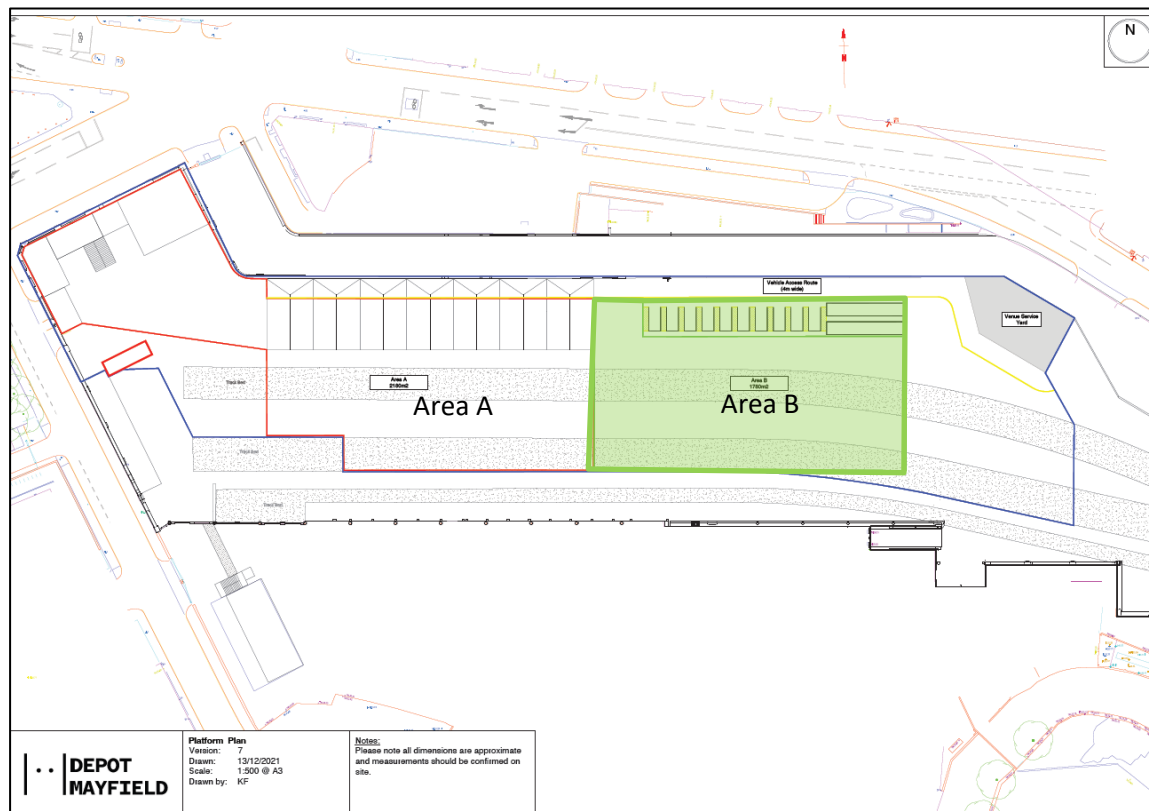
1. Introduction

- 1.1.1 Three Spires Acoustics Ltd (TSA) have been commissioned by Engine No4 to provide a Noise Impact Assessment for the Depot Mayfield Platform Area B, which is an event space located on the roof of Mayfield Depot, 11 Baring St, Manchester, M1 2PY.
- 1.1.2 This document has been requested by the client in order to discharge planning consent Condition 6 attached to permission 134588/FO/2022 regarding the use of Area B for entertainment events.

1.2 Depot Mayfield Platform Area B

- 1.2.1 The Depot Mayfield Platform site is split into two areas, A and B. Area A consists of a temporary cinema construction on top of the existing Depot Mayfield Venue, which is operated by Backyard Cinema. Area B will be utilized as an events space, allowing for seasonal specific events or temporary exhibitions and managed by Broadwick Live as overall operators of Depot Mayfield. Area B events and exhibitions will typically finish before 23:15. I understand the area however, has permission for use until 3am.
- 1.2.2 The exact events have yet to be confirmed but may include performances such as cabaret, theatre and cultural events contained within a temporary lightweight structure. A plan of area A and B is presented at Figure 1 below.

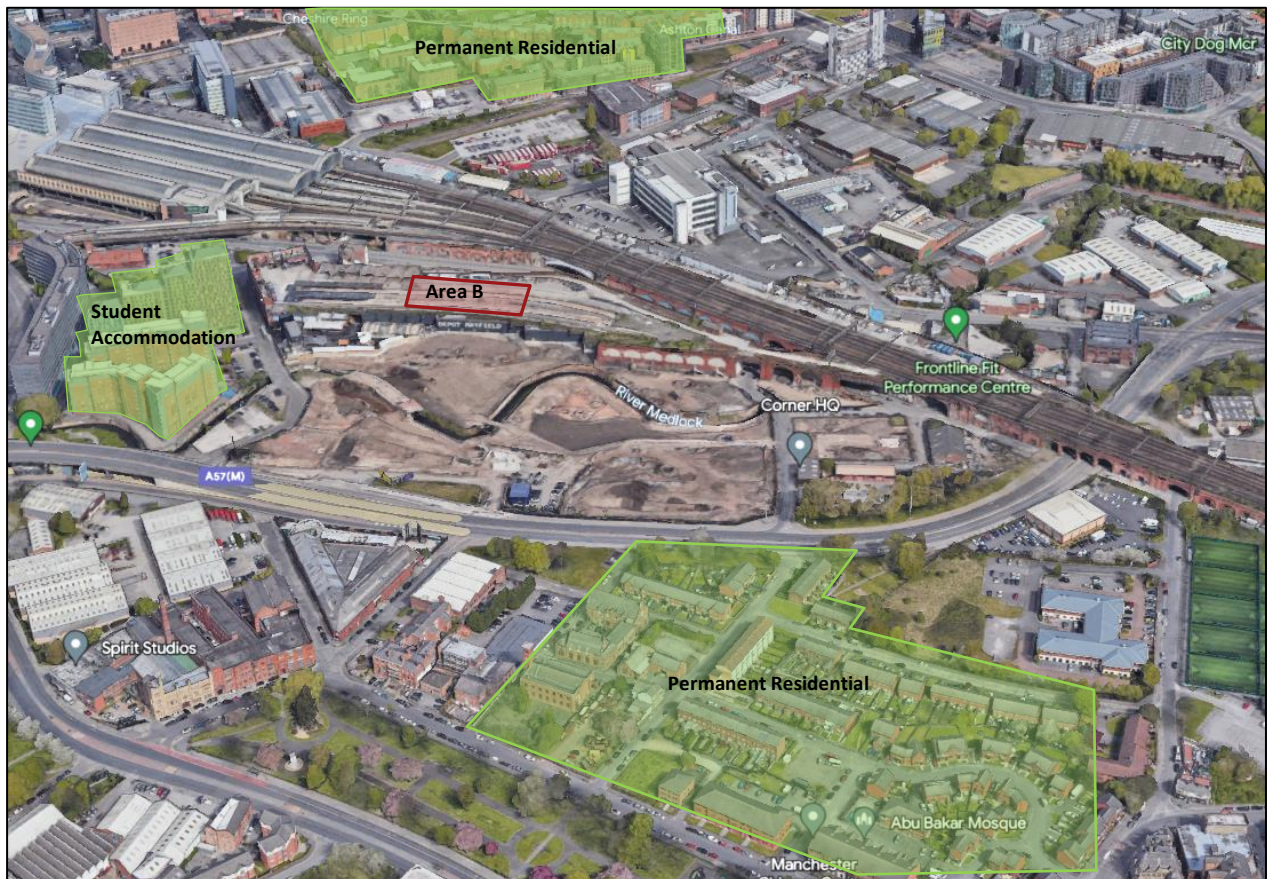
Figure 1. Plan of Depot Mayfield Platform Area A & B



1.3 Noise Sensitive Receptors (NSR)

- 1.3.1 Depot Mayfield is located on Baring Street, Manchester, M1. It is bounded by Baring Street to the west, Temperance Street to the east, and Fairfield Street to the north. The area surrounding the site is both industrial and commercial in nature with various industrial buildings to the east of the site and some bars and restaurants nearby. Transportation noise sources, including rail noise from Manchester Piccadilly Station and road noise from the A57(M) and A635 Mancunian Way dominate the acoustic environment.
- 1.3.2 The nearest noise sensitive receptor is the Unite Students, Piccadilly Point student accommodation building located approximately 150m to the south-west from the mid point of Area B. There are other residential receptors to the south at Cotter Street (350m) and Ardwick Green (440m) and to the north at Fair Street (320m).
- 1.3.3 A Google Earth aerial photograph of the site and location of NSR's is presented in Figure 1 below.

Figure 2. Event Site Aerial Photograph



2. Planning Consent

- 2.1.1 Temporary planning consent for application reference 134588/FO/2022 was issued to Mayfield Development Partnership by the local planning authority at Manchester City Council on 27/01/2023 for.

Part retention and part temporary change of use for a three-year period of rooftop area of Mayfield Depot to allow for use as a cinema (retention), event space and ancillary leisure uses, with supporting food and beverage offer (retention) (Sui Generis use) and installation of temporary structures, including for access and associated works

- 2.1.2 Condition 6, reproduced below, requires discharge before the first use of Area B

(6) Notwithstanding the recommendation within the Mayfield Depot Cinema, Manchester Noise Survey and Noise Impact Assessment Mayfield Depot Cinema R01C Client: Broadwick Live Dated: 5/12/2022 by DbX Acoustics before the operation of Area B as shown in Dwg MAY-K002 RO stamped as received on 17-01-23 commences , details of how the spaces will be acoustically insulated and treated to limit the break out of noise shall be submitted for approval in writing by the City Council, as Local Planning Authority. This shall include a noise study of the premises and a scheme of acoustic treatment.

Where entertainment noise is proposed the LAeq (entertainment noise) shall be controlled to 10dB below the LA90 (without entertainment noise) in each octave band at the facade of the nearest noise sensitive location, and internal noise levels at structurally adjoined residential properties in the 63HZ and 125Hz octave frequency bands shall be controlled so as not to exceed (in habitable rooms) 47dB and 41dB, respectively. The scheme proposed may need to include different measures such as acoustic lobbies at access and egress points of the premises, acoustic treatment of the building structure, sound limiters linked to sound amplification equipment and specified maximum internal noise levels.

The approved noise insulation scheme shall be completed before any of the approved uses commence. Prior to the use of this area commencing a post completion report to verify that all of the recommended mitigation measures have been installed and effectively mitigate any potential adverse noise impacts in adjacent residential accommodation arising directly from the proposed development shall be submitted and agreed in writing by the City Council as local planning authority. Prior to occupation any non compliance shall be suitably mitigated in accordance with an agreed scheme.

- 2.1.3 Reason - To secure a reduction in noise in order to protect future residents from noise nuisance, pursuant to policies SP1 and DM1 of the Core Strategy and saved UDP Policy DC26.

2.2 Manchester City Council – Planning & Noise Technical Guidance (October 2022)

- 2.2.1 This document sets out Manchester City Council's requirements with regard to current guidance and policy, with the aspiration that new developments achieve the highest standards without compromising the health and wellbeing of residents.
- 2.2.2 The guidance states, *A planning application for a new entertainment venue that is structurally detached from other building uses should demonstrate that music noise from the proposal will not be 'audible' in nearby residential properties, assuming that the residential properties in question have their windows open. The criterion here is.*
- 2.2.3 *"Entertainment noise (LAeq,5min) should be controlled to 5dB below the typical background noise level (LA90) in each octave band at the nearest noise sensitive location".*
- 2.2.4 *The guidance also includes 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:*
- 2.2.5 *'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,5min), respective*
- 2.2.6 The initial planning application was accompanied by a Noise Impact Report undertaken by dBx Acoustics reference R01C dated 05/12/2022 and included a noise impact assessment of the proposed cinema within Area A and a preliminary assessment of Area B.
- 2.2.7 dBx applied the MCC criteria (5dB below typical background) detailed at 2.2.3 above, for the assessment of the cinema in Area A and I understand that this has been consented by the LPA. However, Condition 6 related to Area B, now includes a condition requiring an entertainment noise criteria of 10dB below typical background criteria. This is considered inconsistent with both MCC technical guidance and the consent for Area A.
- 2.2.8 Therefore to provide a consistency of approach, noise impact will be assessed against the MCC criteria for structurally detached event spaces i.e 5dB below typical background criteria.

2.3 Noise Impact Assessment

- 2.3.1 In order to discharge Condition 6 and supplement the information within the dBx report it is proposed to provide a set of noise limiting criteria, based on MCC technical requirements, and minimum temporary structure sound insulation performance requirements for a range of event types which can be incorporated into a Noise Management Plan for Area B and as contractual obligations for end users. This can be tested and validated, including cumulative impact from Area A and B, when events are undertaken in the summer of 2023.

2.4 Typical Entertainment Levels

- 2.4.1 Indicative noise levels for background music, cabaret performance and live amplified music, from previous assessments undertaken by TSA & dBx are detailed in Table 1 below and these will be used for assessment at noise sensitive receptors.

Table 1. Indicative Typical Noise Levels Measured Temporary Event Spaces

Source	LAeq,T (dB)	Octave Band Centre Frequency (Hz)						
		63	125	250	500	1K	2K	4K
Background Music	75	75	72	71	74	70	66	55
Cabaret / Theatre /Acoustic Performances	88	84	84	85	85	84	78	70
Amplified Live Acts	95	98	94	89	88	87	82	75

2.5 Background Data

- 2.5.1 The MCC criteria is based on existing background noise levels, therefore background noise levels provided within the dBx survey will be used along with previous measurement data undertaken TSA for the Depot Mayfield site. Table 2 below provides a summary of the background measurement data and the derived MCC requirements for the pre and post 23.00 situations. Note that only post 23.00 data is available for NSR2 Ardwick Green.

Table 2. Summary of Measured External Background Noise Levels and Subsequent Limits at NSRs

Source Location	Noise Metric	Octave Band Centre Frequency (Hz)						
		63	125	250	500	1K	2K	4K
NSR1 Unite Student Day/Eve	L90	56	49	49	50	53	48	37
Derived Limit Day/Eve	Leq	51	44	44	45	48	43	32
NSR3 Cotter Street Day/Eve	L90	61	54	53	54	58	52	40
Derived Limit Day/Eve	Leq	56	49	48	49	53	47	35
NSR1 Unite Student Night	L90	51	46	44	44	45	41	32
Derived Limit Night	Leq	46	41	39	39	40	36	27
NSR2 Ardwick Green	L90	49	44	38	37	37	31	32
Derived Limit Night	Leq	44	40	33	32	32	26	27
NSR3 Cotter Street Night	L90	48	41	42	40	42	37	24
Derived Limit Night	Leq	43	36	37	35	37	32	19

- 2.5.2 Applying the data in Table 1 and Table 2 above, the following equation can be rearranged to determine the approximate minimum sound reduction performance of the temporary structure to achieve the MCC technical requirements.

2.5.3 $SPL_{ext} = SPL_{int} - SRI + 10\log(S) - 20\log(r) - 14$

SPL_{ext} is the external noise level at receptor (r)

SPL_{int} is the reverberant internal level from Table 2

Where S is the area of the partition (temp structure facing receiver nominal area of 25mx5m)

r is the distance from the structure to the NSR

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2.5.4 Tables 3 and 4 below present the predicted levels and minimum temporary structure building sound reduction performance requirements for Cabaret and Live Music pre and post 23.00 situations.

Table 3. Noise Predictions for Cabaret Events Up to 23.00

NSR1 Student Accommodation	63	125	250	500	1KHz	2KHz	4KHz
	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Reverberant Internal Level Cabaret	84	85	85	85	85	80	70
Distance Attenuation 150m 10log (S)-20Log (r)-14	37	37	37	37	37	37	37
Barrier Correction (line of sight)	0	0	0	0	0	0	0
Level at NSR1	47	48	48	48	48	43	33
MCC Requirement (5dB below background) Day 07:00-23:00	51	44	44	45	48	43	32
Level Difference / Minimum SRI of Temporary Structure	-4	4	4	3	0	0	1
NSR 3 Cotter Street	63	125	250	500	1KHz	2KHz	4KHz
	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Reverberant Internal Level Cabaret	84	85	85	85	85	80	70
Distance Attenuation 350m 10log (S)-20Log (r)-14	44	44	44	44	44	44	44
Barrier Correction (line of sight)	0	0	0	0	0	0	0
Level at NSR3	40	41	41	41	41	36	26
MCC Requirement (5dB below background) Day 07:00-23:00	56	49	48	49	53	47	35
Level Difference / Minimum SRI of Temporary Structure	-16	-8	-7	-8	-12	-11	-9

Table 4. Noise Predictions for Live Amplified Music Events Up to 23.00

NSR1 Student Accommodation	63	125	250	500	1KHz	2KHz	4KHz
	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Reverberant Internal Level Live Music	98	94	89	88	87	82	75
Distance Attenuation 150m 10log (S)-20Log (r)-14	37	37	37	37	37	37	37
Barrier Correction (line of sight)	0	0	0	0	0	0	0
Level at NSR1	61	57	52	51	50	45	38
MCC Requirement (5dB below background) Day 07:00-23:00	51	44	44	45	48	43	32
Level Difference / Minimum SRI of Temporary Structure	10	13	8	6	2	2	6
NSR 3 Cotter Street	63	125	250	500	1KHz	2KHz	4KHz
	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
Reverberant Internal Level Live Music	98	94	89	88	87	82	75
Distance Attenuation 350m 10log (S)-20Log (r)-14	44	44	44	44	44	44	44
Barrier Correction (line of sight)	0	0	0	0	0	0	0
Level at NSR3	54	50	45	44	43	38	31
MCC Requirement (5dB below background) Day 07:00-23:00	56	49	48	49	53	47	35
Level Difference / Minimum SRI of Temporary Structure	-2	1	-3	-5	-10	-9	-4

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- 2.5.5 As can be seen from Table 3, above, for the daytime situation up to 11pm, predicted cabaret noise at the NSR's is marginally above the MCC requirements, with a maximum exceedance of 4dB at 125Hz and 250Hz at NSR1 Student Accommodation. It is considered that the sound insulation performance of most lightweight structures including acoustic lined marquees and Spigeltents would be able to provide suitable sound reduction performance to achieve the requisite reductions.
- 2.5.6 Table 4 above indicates, for the amplified live music situation, a greater degree of sound insulation, up to 13dB in the 125Hz octave band, will be required for the temporary event structure or music noise levels limited to those applied for Cabaret performances or a combination of both.
- 2.5.7 Table 5 present the predicted levels and minimum temporary structure building sound reduction performance requirements for Cabaret events pre and post 23.00 situations.

Table 5. Noise Predictions for Cabaret Events Post 23.00

NSR1 Student Accommodation	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1KHz [dB]	2KHz [dB]	4KHz [dB]
Reverberant Internal Level Cabaret	84	85	85	85	85	80	70
Distance Attenuation 150m 10log (S)-20Log (r)-14	37	37	37	37	37	37	37
Barrier Correction (line of sight)	0	0	0	0	0	0	0
Level at NSR1	47	48	48	48	48	43	33
MCC Requirement (5dB below background) Night 23:00-07:00	46	41	39	39	40	36	27
Level Difference / Minimum SRI of Temporary Structure	1	7	9	9	8	7	6
NSR 2 Ardwick Green	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1KHz [dB]	2KHz [dB]	4KHz [dB]
Reverberant Internal Level Cabaret	84	85	85	85	85	80	70
Distance Attenuation 440m 10log (S)-20Log (r)-14	46	46	46	46	46	46	46
Barrier Correction (line of sight)	0	0	0	0	0	0	0
Level at NSR2	38	39	39	39	39	34	24
MCC Requirement (5dB below background) Night 23:00-07:00	44	40	33	32	32	26	27
Level Difference / Minimum SRI of Temporary Structure	-6	-1	6	7	7	8	-3
NSR 3 Cotter Street	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1KHz [dB]	2KHz [dB]	4KHz [dB]
Reverberant Internal Level Cabaret	84	85	85	85	85	80	70
Distance Attenuation 350m 10log (S)-20Log (r)-14	44	44	44	44	44	44	44
Barrier Correction (line of sight)	0	0	0	0	0	0	0
Level at NSR3	40	41	41	41	41	36	26
MCC Requirement (5dB below background) Night 23:00-07:00	43	36	37	35	37	32	19
Level Difference / Minimum SRI of Temporary Structure	-3	5	4	6	4	4	7

- 2.5.8 For the post 11pm situation predicted cabaret noise at the NSR's is above the MCC requirements, with a maximum exceedance of 9dB at 250Hz and 500Hz at NSR1 Student Accommodation. It is considered that the sound insulation performance of most lightweight structures including acoustic lined marquees and Spigeltents would not be able to provide suitable sound reduction performance and a more robust structure such as the Tata Trimapanel steel panel system used for the cinema may have to be installed. Appendix A provides the manufacturers data sheet for this product. Alternatively internal level reductions would need to be made to achieve the same, however its is likely that these would likely result in significant negative entertainment level reductions.
- 2.5.9 Table 6 present the predicted levels and minimum temporary structure building sound reduction performance requirements for Live Music events pre and post 23.00 situations

Table 6. Noise Predictions for Amplified Music Events Post 23.00

NSR1 Student Accommodation	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1KHz [dB]	2KHz [dB]	4KHz [dB]
Reverberant Internal Level Live Music	98	94	89	88	87	82	75
Distance Attenuation 150m 10log (S)-20Log (r)-14	37	37	37	37	37	37	37
Barrier Correction (line of sight)	0	0	0	0	0	0	0
Level at NSR1	61	57	52	51	50	45	38
MCC Requirement (5dB below background) Night 23:00-07:00	46	41	39	39	40	36	27
Level Difference / Minimum SRI of Temporary Structure	15	16	13	12	10	9	11
NSR 2 Ardwick Green	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1KHz [dB]	2KHz [dB]	4KHz [dB]
Reverberant Internal Level Live Music	98	94	89	88	87	82	75
Distance Attenuation 440m 10log (S)-20Log (r)-14	46	46	46	46	46	46	46
Barrier Correction (line of sight)	0	0	0	0	0	0	0
Level at NSR2	52	48	43	42	41	36	29
MCC Requirement (5dB below background) Night 23:00-07:00	44	40	33	32	32	26	27
Level Difference / Minimum SRI of Temporary Structure	8	8	10	10	9	10	2
NSR 3 Cotter Street	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1KHz [dB]	2KHz [dB]	4KHz [dB]
Reverberant Internal Level Live Music	98	94	89	88	87	82	75
Distance Attenuation 350m 10log (S)-20Log (r)-14	44	44	44	44	44	44	44
Barrier Correction (line of sight)	0	0	0	0	0	0	0
Level at NSR3	54	50	45	44	43	38	31
MCC Requirement (5dB below background) Night 23:00-07:00	43	36	37	35	37	32	19
Level Difference / Minimum SRI of Temporary Structure	11	14	8	9	6	6	12

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- 2.5.10 Table 6 above indicates for the live amplified music situation a greater degree of sound insulation, up to 16dB in the 125Hz octave band. It is therefore recommended that amplified music events are limited to a finish time of 23:00.

2.6 Area A & B Cumulative Impact

- 2.6.1 An assessment of the overall noise impact when taking into account noise breakout from the cinema in Area A, the small bar in Area B as well as the event space (cabaret use) in Area B is presented in Table 7 and 8, below.

Table 7. NSR1 Cumulative Noise Impact Up to 23:00 (Cabaret)

NSR1 Student Accommodation	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1KHz [dB]	2KHz [dB]	4KHz [dB]
Area A Cinema	39	39	36	33	32	27	20
Area B Bar	37	34	33	36	32	28	17
Area B Cabaret	47	48	48	48	48	43	33
Sum	48	49	48	48	48	43	33
MCC Limit Pre 23:00	51	44	44	45	48	43	32
Level Difference	-3	5	4	3	0	0	1

Table 8. NSR1 Cumulative Noise Impact Post 23:00 (Cabaret)

NSR1 Student Accommodation	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1KHz [dB]	2KHz [dB]	4KHz [dB]
Area A Cinema	39	39	36	33	32	27	20
Area B Bar	37	34	33	36	32	28	17
Area B Cabaret	47	48	48	48	48	43	33
Sum	48	49	48	48	48	43	33
MCC Limit Post 23:00	46	41	39	39	40	36	27
Level Difference	2	8	9	9	8	7	6

- 2.6.2 It can be seen that with all three areas operating simultaneously, MCCs noise limits would be marginally exceeded for the up to 11pm situation and more significantly exceeded for the post 23:00 situation. It is noted that due to the sound insulation performance of the cinema event space and the significantly lower levels for background music at the small bar, received noise levels are typically 10dB below the predicted noise compared to the cabaret event space (without mitigation). This indicates that there would be very limited contribution from the other sources compared to the cabaret noise. It is therefore, considered that with appropriate event space building sound reduction performance specification as detailed above, the MCC requirements for both pre and post 23:00 hrs situations can be achieved.
- 2.6.3 Tables 9 and 10 below provide the cumulative assessment for the live music pre and post 23.00 situation.

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Table 9. NSR1 Cumulative Noise Impact Up to 23:00 (Live Amplified Music)

NSR1 Student Accommodation	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1KHz [dB]	2KHz [dB]	4KHz [dB]
Area A Cinema	39	39	36	33	32	27	20
Area B Bar	37	34	33	36	32	28	17
Area B Amplified Live Music	61	57	52	51	50	45	38
Sum	61	57	52	51	50	45	38
MCC Limit Pre 23:00	51	44	44	45	48	43	32
Level Difference	10	13	8	6	2	2	6

Table 10. NSR1 Cumulative Noise Impact Post 23:00 (Live Amplified Music)

NSR1 Student Accommodation	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1KHz [dB]	2KHz [dB]	4KHz [dB]
Area A Cinema	39	39	36	33	32	27	20
Area B Bar	37	34	33	36	32	28	17
Area B Amplified Live Music	61	57	52	51	50	45	38
Sum	61	57	52	51	50	45	38
MCC Limit Post 23:00	46	41	39	39	40	36	27
Level Difference	15	16	13	12	10	9	11

- 2.6.4 Tables 9 and 10 above indicate for the cumulative assessment, including live amplified music, with all three areas operating simultaneously, the MCCs noise limits would be exceeded by up to 13dB in the 125Hz octave band for the up to 11pm situation and by 16dB in the 125Hz octave band for the post 11pm situation. It would be necessary therefore, to either provide a robust temporary structure to achieve the performance standard, as in the Tables above, or limit the sound levels within the event space or a combination of the two, in order to achieve MCC requirements. It is recommended that live amplified music performances finish by 23.00.

2.7 Inaudibility

- 2.7.1 Regarding inaudibility, the MCC guidance suggests, for structurally connected premises, internal noise levels at residential properties in the 63Hz and 125Hz octave frequency bands shall be controlled so as not to exceed (in habitable rooms) 47dB and 41dB, respectively. The results for the Cabaret events, once attenuation by a partially open window is taken into account, would result in levels below the MCC requirements at 63Hz and 125Hz and therefore, low frequency noise can be considered to be inaudible or indiscernible above typical ambient noise levels. This is considered an important point because Condition 6 requirements of 10dB below background, compared to the MCC guidance limit of 5dB below background maybe unreasonable if the inaudibility criteria is achieved.

- 2.7.2 For the amplified music situation low frequency music noise will be audible at low level and therefore further attenuation, in the form of robust structure or reduced internal sound levels or a combination of both, will be required.

2.8 Plant Noise

- 2.8.1 Air heating and cooling will be required for the event spaces within Area B and it will be necessary to ensure that noise from plant and equipment is controlled to achieve MCC requirements and also not add to the cumulative impact. It is therefore recommended that plant noise is limited to at least no greater than 10dB(A) below the LA90 (prevailing acoustic environment)
- 2.8.2 We have been informed that HPAC90 high performance air conditioner plant will be installed at the rear of the temporary event space structure. Manufacturers specification is detailed at Appendix B. There is no spectral data available for the plant, however a single figure A Weighted level of 75dB(A) at 3m is specified and has been applied in predictive calculations for the night-time situation at the NSR's. This has included 10dB of barrier attenuation for NSR1 as plant will be obscured (no line of sight) by the event structure and the cinema structure, and no barrier attenuation for NSR2 and NSR3. The resultant plant noise is presented in Table 11 below.
- 2.8.3 The results indicate that in all situations that plant noise will be between 11 and 17dB(A) below the background noise levels and therefore will achieve MCC technical requirements.

Table 11. Predicted Plant Noise at NSR's

Location	Plant Noise	Distance	Barrier	Resultant	Background	Level
	Attenuation	Attenuation	Level	Modal	Diff	
NSR1 Student Accommodation 150m	75	34	-10	31	48	-17
NSR2 Ardwick Green 440m	75	43	0	32	43	-11
NSR3 Cotter St 350m	75	41	0	34	49	-15

3. Noise Management Plan

- 3.1.1 It is recommended that a comprehensive noise management system, including sound system design, monitoring and community engagement is implemented to promote the local authority requirements and ensure that the licence holder and promoters are committed to a continual improvement strategy.

4. Summary & Conclusions

- 4.1.1 Three Spires Acoustics Ltd have undertaken a noise assessment for the Area B event space on top of Mayfield Depot, Fairfield Street, Manchester.
- 4.1.2 Noise predictions have been undertaken which confirm that with.

1. For Cabaret events which finish by 23:00 the construction of the temporary event structure such as an acoustic lined marquee or Spigeltent, would be suitable to control noise breakout to achieve MCC requirements, including cumulative impact.
 2. For Cabaret events which finish after 23:00 a more robust temporary event structure construction will be required which achieves the minimum performance requirements detailed in Table 8.
 3. For amplified live music events which finish by 23:00 a more robust temporary event space construction will be required which achieves the minimum performance requirements detailed in Table 9 and for events which finish after 23.00 Table 10 requirements will need to be achieved or a significant reduction in internal levels or a combination of both.
- 4.1.3 Validation testing can be undertaken for the cumulative situation during the summer of 2023 when both Area A and B are in operation.
- 4.1.4 Plant noise predictive calculations have been undertaken which indicates plant noise at NSR's will be between 11 and 17dB(A) below the modal background level at the NSR's and therefore comply with MCC technical requirements.
- 4.1.5 It is therefore considered that this report adequately demonstrates that, subject to the minimum sound reduction performance requirements detailed in Section 2 of this report, the proposed temporary event space in Area B will comply with planning requirements and promote the Licensing Act 2003 objective of the prevention of public nuisance and Manchester City Council's Planning and Noise Guidance.

Appendix A: Trimapenl Acoustic Specification

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Specification details for Trimapanel® micro-rib

OVERVIEW

BENEFITS

SYSTEM INFORMATION

PLATINUM® PLUS SYSTEM GUARANTEE

THERMAL AND FIRE PERFORMANCE

ACOUSTIC PERFORMANCE

The acoustic performance of the Trimapanel® micro-rib system has been predicted using software developed by the Department of Applied Acoustics, University of Salford, under a research contract funded by the Metal Cladding and Roofing Manufacturers Association (MCRMA). The results below are based on a 70mm core.

Frequency (Hz)	SRI Values (dB)*	Frequency (Hz)	SRI Values (dB)*
100	12.5	800	27.6
125	14	1000	29.3
160	15.7	1250	31
200	17.3	1600	33
250	20.6	2000	34.7
315	22.4	2500	36.5
400	24	3150	36.7
500	25.8	4000	34.6
630	27.6	5000	32.1

*The predicted sound reduction index values should only be used to provide guidance for preliminary design and/or appraisal of cladding systems. Weighted S.R.I Rw = 28.9dB

If you have any questions or for further information [click here to contact us](#).

Appendix B: Plant Noise Specification

HPAC90 HIGH PERFORMANCE AIR CONDITIONER

The HPAC90 offers enormous versatility by providing up to 90kW of hot or cold air. The high performance unit features two inlet and outlet portals, giving customers the option to recirculate cold air for critical cooling. The HPAC 90 is a fully portable unit and features fork lift slots and lifting to aid manoeuvrability. These high capacity units can operate unattended and are perfect for providing climate control to large volume spaces that include factories, workshops, film sets and event spaces.

SPECIFICATIONS

Nominal cooling duty	90 kW 307,080 btu
Nominal heating duty	90 kW 307,080 btu
Air flow (Max)	15,000 m ³ /h
Typical cooled area	2000 m ³
Power supply	415 v 3 ph N+E RUN 84 A
Plug type	BS4343 125 A 5 Pin
Noise level (max)	75.2 dBA @ 3 metres
Weight	1,640 kg
Dimensions (L x W x H)	2,280 x 2,030 x 2,450 mm
Duct length (max)	48 metres
Duct Diameter	600 mm
Control	Automatic thermostat*
Average power consumption	48.4 kW/h

*Capable of operating down to 10°C

FEATURES

- Heat Pump technology - can be used for cooling or heating
- 48m distribution length - for versatility of location
- Automatic thermostat – can change from cooling to heating
- Variable speed fan for high capacity air flows
- Very high capacity unit - 90kw from a 90 amp power supply
- Designed with fork lift slots and lifting eyes – for easy manoeuvrability
- Compact unit – can be used in restricted areas
- Air recirculation – increases efficiency by using the returned air rather than outside air

Appendix C: 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 $LA_{eq,T}$.

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’.

$LA_{eq,T}$: 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 Leq 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

Depot Mayfield Platform Area B – Noise Impact Assessment

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

