MURRAY ACOUSTICS

Transmission Building Manchester

Noise Impact Assessment

21036-RP-NIA-01 Rev A

22 June 2026

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Document Reference	Revision	Date	Author	Comments
21036-RP-NIA-01	-	09 April 2026	**Jamie Murray MIOA** Director	-
21036-RP-NIA-01	A	22 June 2026	**Jamie Murray MIOA** Director	Included broadband level for noise limits

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The conclusions and recommendations contained in this report are based on the information available at the time of writing, including any data, drawings, or specifications provided by the client or other parties. Murray Acoustics Ltd accepts no responsibility for any inaccuracies in information provided by others.

The assessment is based on the specific conditions, equipment selections, and site layouts described herein. Any changes to these may require the assessment to be reviewed and updated.

This report does not purport to provide legal advice. The findings represent the professional opinion of Murray Acoustics Ltd and do not constitute a guarantee of compliance with any statutory or regulatory requirements.

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1.0 Introduction

1.1 Overview

Murray Acoustics Ltd has been commissioned to undertake a noise impact assessment of the proposed roof terrace works at Transmission Building, 6 Atherton St, Manchester M3 3GS.

The proposed works comprise the introduction of an external amenity space for use by building tenants, including a teapoint facility, canopy structure, planting and loose seating for up to 80 users. The terrace will also include provision for low-level background audio to support general amenity use and occasional tenant events.

This report sets out the assessment methodology, findings, and recommended mitigation measures where relevant, and has been prepared to support the planning application submission to Manchester City Council.

1.2 Site Description

Transmission Building is a ten-storey commercial office building located on Atherton Street within the St John's neighbourhood of Manchester, forming part of the wider Enterprise City development on the former Granada Studios site. The building sits within the Castlefield Conservation Area.

The proposed roof terrace works are located at tenth-floor level on the southern elevation of the building, adjacent to an existing external plant enclosure. The terrace is currently finished with paved slab flooring and is enclosed by a glass balustrade. Access is retained via the existing lift lobby to the north of the building, with a secondary external fire escape stair to the south.

The surrounding area is mixed-use in character. To the west lies Manchester Goods Yard and, beyond, Aviva Studios (Factory International). To the south are leisure uses associated with the Science and Industry Museum. Residential receptors are located to the north-east of the site, comprising the Bauhaus apartments on Atherton Street. These receptors are considered representative of the nearest noise sensitive receptors (NSRs) in the context of this assessment.

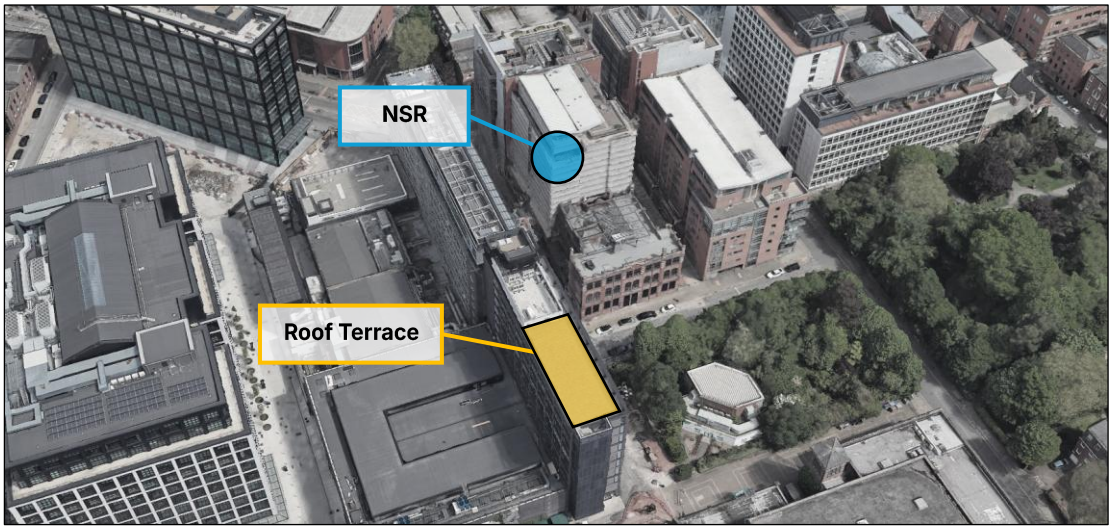


Figure 1.1 Site location plan

1.3 Development Proposals

The proposed development comprises works to the existing roof terrace at tenth-floor level to convert an underused external space into a shared amenity for building tenants. The principal elements are as follows:

- A new freestanding canopy structure adjacent to the existing plant enclosure, comprising a fixed solid-panelled section over a new teapoint and a retractable fabric section over adjoining seating
- A new teapoint / bar facility beneath the fixed canopy
- Fixed and mobile planters with associated planting
- Loose furniture settings providing capacity for up to 80 users
- Provision for low-level background audio and power supply to support general amenity use and occasional tenant events

The terrace is intended to be available to building tenants during normal business hours (08:00 – 18:00), with provision for occasional events to continue until 22:00. Access outside of designated hours is not permitted and is controlled by existing building security arrangements.

The proposed roof terrace layout is shown in the figure below, reproduced from the Proposed Landscape Plan prepared by Space Invader Design (Ref: 25034-(90)003).

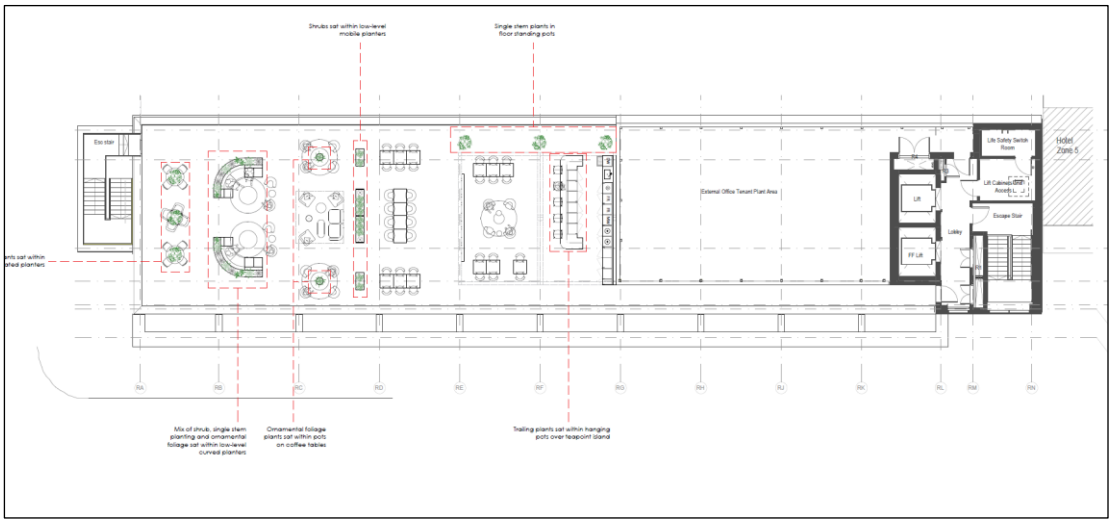


Figure 1.2 Development proposals

Full details of the proposed development are set out in the Design & Access Statement prepared by Space Invader Design (April 2026).

1.4 Assessment Scope

This assessment has been prepared having regard to the Manchester City Council Planning and Noise Technical Guidance (October 2022) and considers the following elements:

- A baseline environmental noise survey to establish existing background sound levels at a position representative of the nearest noise sensitive receptors
- Assessment of noise arising from the use of the proposed audio equipment (entertainment noise) in accordance with the criteria set out in Section 3.7.1.2 of the MCC Planning and Noise Technical Guidance

- Assessment of noise arising from the use of the terrace by up to 80 people, having regard to the methodology of BS 4142:2014+A1:2019 and the criteria set out in Section 3.7.1.5 of the MCC Planning and Noise Technical Guidance
- Recommendations for mitigation where required to achieve compliance with the above criteria

Note that no night-time operations are proposed and therefore assessment is limited to daytime and evening periods only.

2.0 Assessment Guidance & Requirements

2.1 Local Authority Guidance

The development falls within the jurisdiction of Manchester City Council (**MCC**). MCC have published Planning and Noise Technical Guidance (October 2022) which sets out the Council's expectations for the assessment of noise within the planning process, together with specific numerical criteria for a range of development types.

The MCC guidance adopts the noise exposure hierarchy set out in the National Planning Practice Guidance, and requires that developments aim to achieve noise levels below the Lowest Observed Adverse Effect Level (LOAEL), or where this is not achievable, that mitigation is provided to reduce levels to the lowest practicable level below the Significant Observed Adverse Effect Level (SOAEL).

For the proposed development, the following sections of the MCC guidance are considered relevant:

Section 3.7.1.2 Entertainment Venues. MCC require that noise arising from entertainment venues (including those utilising recorded or amplified music via loudspeakers) is controlled to prevent adverse impact at nearby noise-sensitive receptors. For new entertainment uses that are structurally detached from noise sensitive receptors, the applicable criterion is that entertainment noise ($L_{eq,5min}$) should be controlled to 5 dB below the typical background sound level (L_{90}) in each octave band at the nearest noise sensitive location. This criterion is applied on the assumption that residential properties have their windows open.

Section 3.7.1.5 Industrial / Commercial Developments. MCC require that noise from commercial developments is assessed in accordance with BS 4142:2014+A1:2019 and that the design objective is to achieve a rating level of 5 dB (L_{Aeq}) below the typical background sound level (L_{A90}) at the nearest noise sensitive location. Whilst noise from people using an external amenity space does not fall strictly within the scope of BS 4142, the methodology of the standard is considered to provide an appropriate framework for assessing such noise, and the –5 dB design objective is adopted in this assessment as consistent with the wider MCC approach.

Both criteria are referenced to the typical background sound level, derived in accordance with Appendix A of the MCC guidance.

2.2 BS 4142 Assessment Methodology

BS 4142:2014+A1:2019 *'Methods for rating and assessing industrial and commercial sound'* (herein **BS 4142**) provides a method for assessing the likelihood of adverse impact from industrial and commercial sound sources at nearby noise-sensitive receptors.

The assessment compares the rating level of the source in question against the prevailing background sound level at the receptor location. The rating level is derived from the measured or predicted specific sound level, with corrections applied where the sound has distinctive characteristics such as tonality, impulsivity, or intermittency.

The difference between the rating level and the background sound level provides an initial estimate of impact. A difference of around +10 dB or more is likely to be an indication of

a significant adverse impact, depending on context. A difference of around +5 dB is likely to be an indication of an adverse impact, depending on context. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on context. These initial estimates are then considered in context, taking account of factors such as the absolute noise levels, the character of the existing acoustic environment, the sensitivity of the receptor, and the nature and frequency of the sound.

3.0 Environmental Noise Survey

3.1 Procedure

Continuous automated noise measurements were undertaken from 15:30 hours on 01 April 2026 until 10:15 hours on 07 April 2026 at 1No measurement position on site.

Weather conditions were generally dry with light winds and therefore suitable for the measurement of environmental noise, with the exception of some brief periods of adverse weather on the evening of 04 April 2026. Periods affected by adverse weather have been excluded from all analysis.

The measurement procedure complied with ISO 1996-2:2017 Acoustics *'Description, measurement and assessment of environmental noise - Part 2: Determination of environmental noise levels'* and BS 4142.

3.2 Noise Climate

Upon set up and collection of the survey equipment, the general noise climate was noted to be typical of an urban area and dominated by road traffic noise from the surrounding road network. For the avoidance of doubt, noise from the existing rooftop plant area was not audible at the measurement position.

3.3 Measurement Position

The chosen measurement position **MP1** is highlighted on Figure 3.1 below. The position was in clear view of the NSR and was chosen to be representative of noise levels at the nearest NSR.

The microphone was positioned approximately 1 m above the rooftop parapet over the Transmission Building core/stairwell in **free-field** conditions.

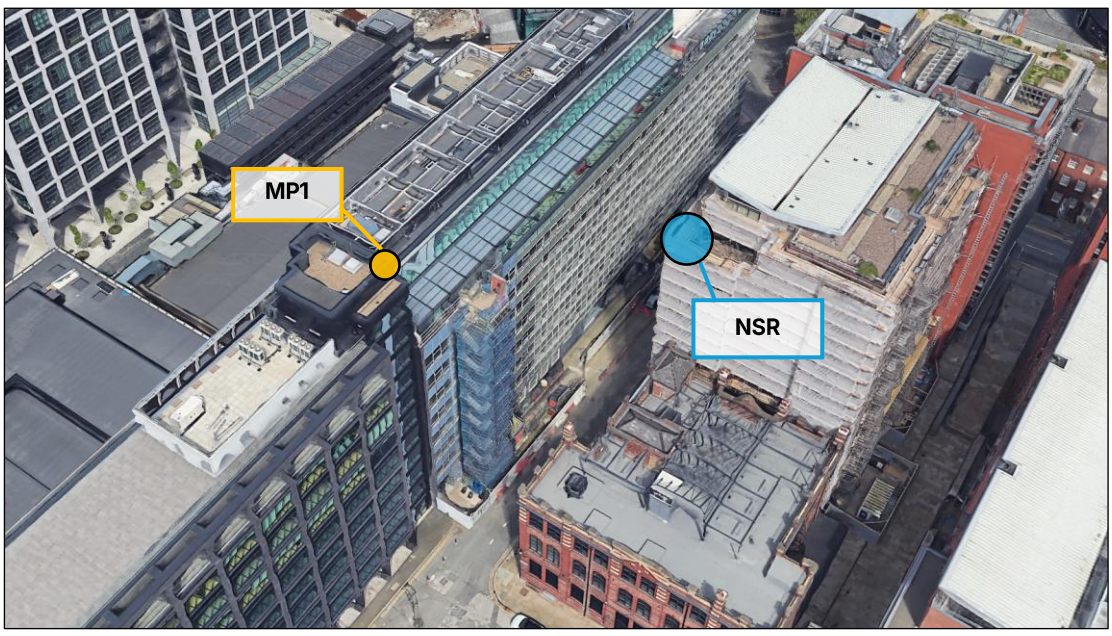


Figure 3.1 Survey measurement positions

3.4 Equipment

The equipment calibration was verified before and after use and no abnormalities were observed. The equipment used is described within Table 3.1.

Table 3.1 Survey equipment information

Equipment	Serial No.	Calibration Date	Certificate Ref.
Class 1 Sound Level Meter Svantek Type 971A	173141	19 Jan 2026	1516680-2
Preamplifier Svantek SV18A	163626		
Free-field Microphone ACO 7152	96756		
Class 1 Acoustic Calibrator Svantek SV33B	182123	30 Jan 2026	C182123-1

3.5 Results

The full measured sound levels throughout the survey duration are presented as a time history graph in Appendix A – Environmental Noise Survey Results. A summary of the sound levels, as used in all subsequent assessment, are presented below.

Note that these are **free-field** sound levels, with background sound levels derived in accordance with Appendix A of the MCC Planning and Noise Technical Guidance. A table showing the derivation is provided in Appendix A – Environmental Noise Survey Results.

Table 3.2 Summary of noise survey results (broadband)

Period	$L_{Aeq,T}$	Typical $L_{A90,T}$
Daytime 07:00 – 19:00	55 dB	51 dB
Evening 19:00 – 23:00	56 dB	51 dB

Table 3.3 Summary of noise survey results (octave band)

Period	Typical Background Sound Level (dB L_{90}) At Octave Band Centre Frequency (Hz)						
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**
Daytime 07:00 – 19:00	68	59	52	48	47	41	32
Evening 19:00 – 23:00	69	60	50	45	45	40	32

4.0 Music Noise Assessment

4.1 Criteria

The MCC Planning and Noise Technical Guidance (Section 3.7.1.2) sets specific criteria for the assessment of noise from venues utilising amplified audio. For new uses that are structurally detached from nearby noise sensitive receptors, the applicable criterion is:

"Entertainment noise ($L_{Aeq,5min}$) should be controlled to 5 dB below the typical background noise level (L_{A90}) in each octave band at the nearest noise sensitive location."

This criterion is applied on the assumption that residential properties have their windows open and is assessed on an octave-band basis rather than as a single broadband value. In practice, the 63 Hz and 125 Hz octave bands are typically the controlling frequencies, reflecting the difficulty of containing low-frequency sound and the disproportionate annoyance associated with bass content.

Based on the measured background sound levels, the applicable octave band limits at the nearest NSR are as set out below.

Table 4.1 Octave band noise limits at NSR from music noise

Period	Operational Noise Level Limit at NSR (dB L_{eq}) At Octave Band Centre Frequency (Hz)							dBA
	63	125	250	500	1k	2k	4k	
Daytime 07:00 – 23:00	63	54	45	40	40	35	27	45

4.2 Methodology and Assessment Parameters

At the current stage of the design, fixed loudspeaker positions, quantities and specifications have not been confirmed. A detailed source-by-source noise model is therefore not appropriate, and the assessment instead focuses on establishing the operational noise level limits as set out in Table 4.1.

To facilitate further context both for the applicant and the Local Authority, permissible music noise levels within the rooftop terrace have been estimated and expressed as a maximum swept-average sound pressure level across the terrace. The swept-average level represents the spatially-averaged sound pressure level across the usable area of the terrace, as might typically be measured during commissioning of the installed system. This average level is intended only to provide guidance as to the noise level that may be expected within the area, and the overriding criteria as the design develops shall be the octave band noise limits at the NSR as set out in Table 4.1.

The permissible swept-average level has been derived by working back from the limits at the nearest NSR set out in Table 4.1, accounting for:

- Distance attenuation between the terrace and the nearest NSR, taken as approximately 60 m
- A maximum distance from any loudspeaker of approximately 10 m
- Full screening afforded by the strategic placement of loudspeakers to benefit from the intervening built form, applied as a frequency-dependent barrier correction

4.3 Assessment

On the basis of the above, the maximum permissible swept-average octave band sound pressure level across the terrace, as estimated within our assessment, is presented in Table 4.2 below.

Table 4.2 Maximum permissible swept-average sound pressure level across terrace

Area	Permissible Swept-Average Sound Level (dB L_{eq}) At Octave Band Centre Frequency (Hz)							dBA
	63	125	250	500	1k	2k	4k	
Roof Terrace	85	76	69	65	68	64	59	72

The above would readily permit background music but would not be anticipated to be capable of facilitating heavier amplified music.

The above is in line with the applicant's intended operation of the space and should therefore permit the proposed development to be operated as intended.

It must be noted that the noise levels provided in Table 4.2 are intended to provide guidance on feasibility only and would be subject to further review once fixed loudspeaker positions, quantities and specifications have been confirmed. At this stage, the focus, and the overriding requirement, shall be for music noise to comply with the limits set out in Table 4.1 at the nearest NSR as the design develops.

5.0 Patron / Occupant Noise Assessment

5.1 Criteria

The MCC Planning and Noise Technical Guidance (Section 3.7.1.5) sets a design objective that the rating level of commercial/amenity noise sources should be 5 dB below the typical background sound level (LA90) at the nearest noise sensitive receptor.

Whilst noise from occupants of an external amenity space does not fall strictly within the scope of BS 4142, the methodology of the standard is considered to provide an appropriate framework for assessing such noise, including the application of acoustic feature corrections for any tonal, impulsive or intermittent characteristics.

Based on the measured background sound levels, the applicable rating level limit at the nearest NSR is as set out below.

Table 5.1 Patron / occupant noise limit at NSR

Period	Typical $L_{A90,T}$	Rating Level Limit at NSR
Daytime 07:00 – 23:00	51 dB	46 dB

5.2 Methodology and Assessment Parameters

The sound power level of the occupants of the terrace has been calculated on the basis of the following assumptions:

- A maximum occupancy of 80 persons
- Approximately 50% of occupants are assumed to be speaking at any given time, with the remaining occupants listening. This is consistent with typical conversational dynamics in social settings and gives 40No simultaneous talkers as a reasonable worst case.
- Each talker is assumed to speak at a "raised" vocal effort, corresponding to a sound pressure level of 65 dB L_{Aeq} at 1 m on-axis per ANSI S3.5:1997 (R2020). This represents a conservative worst case, accounting for the Lombard effect whereby talkers instinctively raise their voices in the presence of background sound.
- Averaged over all directions (i.e. not on-axis), the free-field sound pressure level per talker at 1 m is taken as 63 dB L_{Aeq}, reflecting the random orientation of talkers within a social group.
- The corresponding sound power level per talker is therefore L_{wA} = 71 dB, based on hemispherical radiation at 1 m reference distance.
- The sound power level has been applied at the centroid of the seating area on the proposed terrace, as shown on the Proposed Landscape Plan. Noise propagation to the nearest NSRs has been calculated in accordance with ISO 9613-2, accounting for geometric spreading, air absorption and ground effect where applicable.
- A conservative screening correction has been applied for ‘glancing’ screening of -5 dB based on the surrounding built form.

5.3 Assessment

On the basis of the above, the specific sound level at the nearest NSR has been calculated for full occupancy of the terrace (80 persons). The assessment is presented below.

Table 5.2 Sound levels at NSR from terrace occupants

Description	NSR
Speech Sound Level at 1 m (L_{Aeq})	63 dB
Quantity Correction (40No)	+16 dB
Distance Correction (60 m)	-36 dB
Barrier Correction (Glancing)	-5 dB
Specific Level at NSR ($L_{Aeq,1h}$)	38 dB
Acoustic Feature Correction	+3 dB
Rating level at NSR ($L_{Ar,1h}$)	41 dB
Noise Emission Limit at NSR ($L_{Ar,1h}$)	46 dB
Compliance	✓

A +3 dB acoustic feature correction has been applied to account for the intermittent character of conversational speech, which may be perceived as containing discrete events (laughter, raised voices, exclamations) against the prevailing background sound environment. No correction has been applied for tonality or impulsivity, as neither feature is considered characteristic of general conversational noise from a mixed group of occupants.

As shown above, the predicted rating level for full occupancy of the terrace falls below the MCC design objective of 5 dB below the typical background sound level at the nearest NSR during the assessment period. The proposed use of the terrace by up to 80No occupants is therefore considered to comply with the requirements of MCC, and no mitigation is required in respect of occupancy noise.

6.0 Conclusion

Murray Acoustics Ltd has undertaken a noise impact assessment of the proposed roof terrace works at Transmission Building, Atherton Street, Manchester, in accordance with the Manchester City Council Planning and Noise Technical Guidance (October 2022) to support the planning application submission.

A baseline environmental noise survey was undertaken between 01 April 2026 and 07 April 2026 at a position representative of the nearest noise sensitive receptors, comprising the Bauhaus apartments to the north-east of the site. Both broadband and octave band background sound levels were derived in accordance with Appendix A of the MCC guidance.

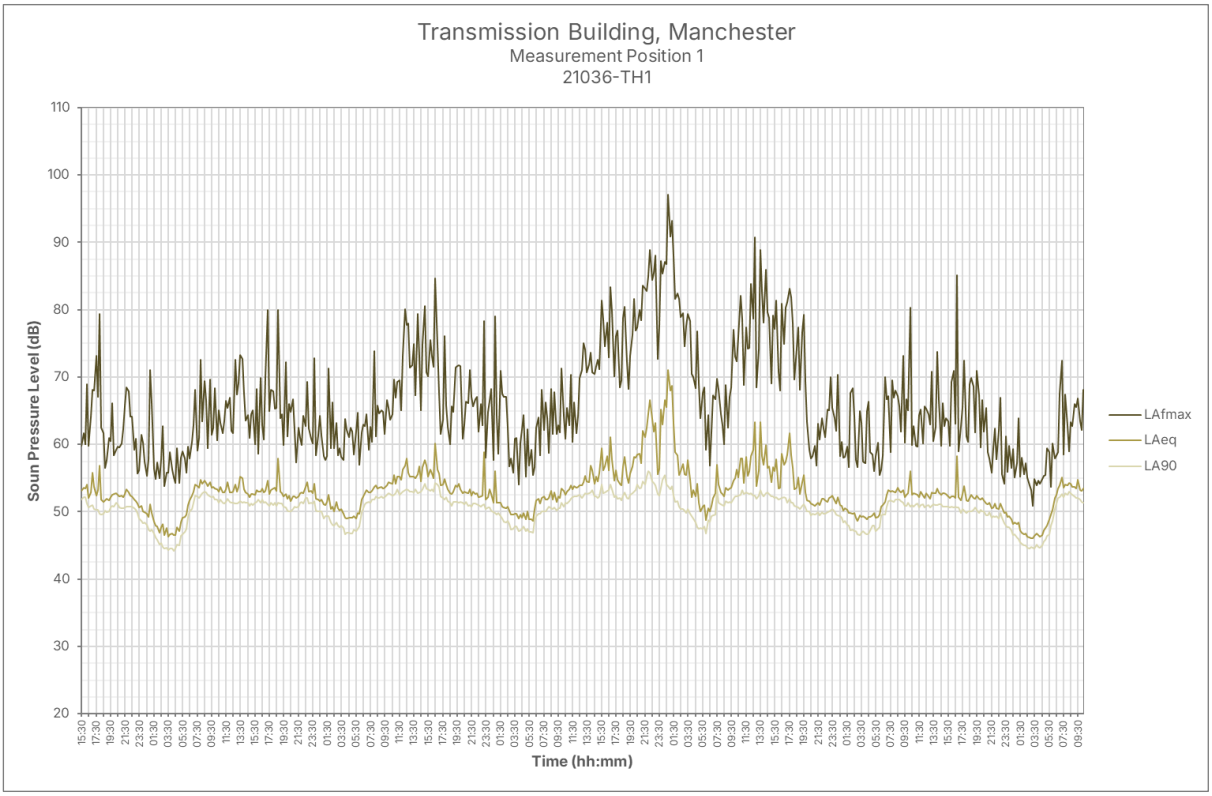
The assessment has considered the two principal sources of noise associated with the proposed development:

Noise from the use of background audio equipment on the terrace has been assessed against the criteria set out in Section 3.7.1.2 of the MCC guidance. Whilst fixed loudspeaker positions, quantities and specifications are not yet confirmed at this stage of the design, octave band noise emission limits at the nearest noise sensitive receptor have been established. To provide further context for both the applicant and the Local Authority, the corresponding maximum permissible swept-average sound pressure levels across the terrace have been derived. These permissible levels are considered sufficient to facilitate the use of background audio in line with the applicant's intended operation of the space, whilst complying with the MCC requirements at the nearest receptor.

Noise from the use of the terrace by up to 80 occupants has been assessed having regard to the methodology of BS 4142:2014+A1:2019 and the design objective set out in Section 3.7.1.5 of the MCC guidance. The assessment demonstrates that the predicted rating level at the nearest noise sensitive receptor for full occupancy of the terrace is 41 dB $L_{Ar,1h}$, which falls 5 dB below the rating level limit of 46 dB $L_{Ar,1h}$. The proposed use of the terrace by up to 80 occupants is therefore considered to comply with the requirements of the MCC guidance, and no mitigation is required in respect of occupancy noise.

Subject to the appropriate design, specification and management of the background audio system, the proposed development is considered to be capable of complying with the requirements of Manchester City Council and is not expected to give rise to adverse impact at the nearest noise sensitive receptors through the intended use.

Appendix A – Environmental Noise Survey Results



Assessment of Typical L_{A90} per MCC Guidance								
Time	**01-Apr**	**02-Apr**	**03-Apr**	**04-Apr**	**05-Apr**	**06-Apr**	**07-Apr**	**Average**
07:00	-	51.3	51.4	49.7	49.5	50.8	52.2	51
07:15	-	52.4	51.5	50	49.6	51.6	52.6	51
07:30	-	52.3	51.3	50	53.3	51.7	52.2	52
07:45	-	52.1	51.8	50	51.4	51.6	52.7	52
08:00	-	52.4	51.8	50.4	51.1	51.5	52.5	52
08:15	-	52.8	52.3	50.8	51	51.8	53	52
08:30	-	53	52	50.5	50.9	51.8	52.8	52
08:45	-	52.9	52	50.4	51.6	51.8	52.5	52
09:00	-	52.5	52.3	50.7	51.4	51.6	52.3	52
09:15	-	52.3	52.1	50.2	51.5	51.3	52.1	52
09:30	-	52.2	52.2	50.5	51.4	50.9	52.1	52
09:45	-	52.3	52.5	50.5	51.9	50.9	51.8	52
10:00	-	51.8	52.8	51.3	52.3	51.4	51.5	52
10:15	-	51.8	52.6	50.8	52.3	50.8	51.4	52
10:30	-	51.4	52.4	51.3	52.4	51	-	52
10:45	-	51.8	52.5	51.2	52.5	50.8	-	52
11:00	-	51.4	52.7	51.6	53.2	51.1	-	52

Assessment of Typical L_{A90} per MCC Guidance								
Time	**01-Apr**	**02-Apr**	**03-Apr**	**04-Apr**	**05-Apr**	**06-Apr**	**07-Apr**	**Average**
11:15	-	51.2	53.3	51.9	52.6	51.2	-	52
11:30	-	51.5	52.5	52.2	52.9	50.7	-	52
11:45	-	51.9	52.8	52.3	52.7	51	-	52
12:00	-	51.5	53	52.3	52.6	51.1	-	52
12:15	-	51.4	53.2	52.4	52.8	50.7	-	52
12:30	-	51.4	53.4	52.5	52.4	50.9	-	52
12:45	-	51.2	53.2	52	52.4	51	-	52
13:00	-	51.2	53	52.4	51.9	50.7	-	52
13:15	-	51.3	53	52.8	52.4	50.9	-	52
13:30	-	51.6	52.9	52.6	53.2	51.1	-	52
13:45	-	51.3	53.3	52.7	52.6	51	-	52
14:00	-	51.5	52.7	52.9	52.3	51	-	52
14:15	-	51.4	52.9	53.2	52.8	51.1	-	52
14:30	-	51.3	53	52.3	52.9	51.1	-	52
14:45	-	50.9	53.4	52.3	52.6	50.8	-	52
15:00	-	51.2	54.2	52.1	52.3	50.8	-	52
15:15	-	51	53.5	52.3	52.3	50.8	-	52
15:30	51.8	51.3	53.4	54	52.1	50.8	-	52
15:45	52.2	51.5	53.1	52.8	52.2	50.7	-	52
16:00	52.2	51.8	53.3	52.9	51.8	50.8	-	52
16:15	51.2	51.3	53	53.1	51.9	50.7	-	52
16:30	50.6	51.8	54.3	53.2	52	50.8	-	52
16:45	50.9	51.3	54.1	54	52.2	50.6	-	52
17:00	51	51.5	53.7	53.3	52.1	50.7	-	52
17:15	50.4	51.1	52.3	52.2	51.3	49.8	-	51
17:30	50.3	50.9	52	52.4	51.9	50.4	-	51
17:45	50.3	51.3	51.8	51.9	51.4	50.2	-	51
18:00	49.7	51	52.2	52.1	51.3	49.8	-	51
18:15	49.6	51.3	51.6	51.7	50.9	50	-	51
18:30	49.7	50.9	51.3	52.4	50.8	50.1	-	51
18:45	50.2	51.4	50.9	52.9	50.7	50	-	51
19:00	49.9	51.2	51.5	52	50.4	50.3	-	51
19:15	50.1	51.2	51.5	51.9	50.9	50.6	-	51
19:30	50.6	50.8	51.5	52.5	51.1	50.3	-	51
19:45	50.9	50.6	51.4	52.7	50.7	49.8	-	51
20:00	50.8	50.2	51.5	53	50.1	50.3	-	51
20:15	51.4	50	51.4	53.2	50	50	-	51
20:30	51.1	50	51.1	54	49.5	50	-	51
20:45	50.6	50.4	51.5	53.5	49.7	49.5	-	51
21:00	50.5	50.8	50.9	53.6	49.6	49.5	-	51
21:15	50.5	50.7	51	54.5	49.7	49.9	-	51
21:30	50.7	50.8	50.8	54.1	49.9	49.1	-	51

Assessment of Typical L_{A90} per MCC Guidance								
Time	**01-Apr**	**02-Apr**	**03-Apr**	**04-Apr**	**05-Apr**	**06-Apr**	**07-Apr**	**Average**
21:45	50.8	51.3	51.2	55.2	49.5	49.3	-	51
22:00	50.8	51.5	51.2	56	49.9	49.2	-	51
22:15	50.8	51.2	51.1	55.8	49.7	49.3	-	51
22:30	50.8	52	51	54.5	49.7	49	-	51
22:45	50.5	52	50.8	54.3	49.9	49.8	-	51
23:00	50.3	51.2	51	53.9	50.1	49.1	-	51
23:15	49.8	51.3	51.1	52.6	50.2	48.3	-	51
23:30	49	51.2	50.4	52.4	50.4	48	-	50
23:45	48.7	51.6	50.6	53.6	50.1	47.7	-	50
00:00	48.3	50.2	50.7	54.8	49.6	47.7	-	50
00:15	48.4	50.1	50.2	55.4	49.5	47.3	-	50
00:30	48.1	50	49.9	54.1	49.4	46.5	-	50
00:45	47.4	50	49.8	53.8	49.1	46.7	-	49
01:00	47.1	49	49.6	53.3	48.4	46.2	-	49
01:15	47.4	49.3	49.8	53.8	48.6	45.9	-	49
01:30	46.8	49.4	49.3	52.4	48.1	45.5	-	49
01:45	46.2	49.3	49	51.5	48	45.3	-	48
02:00	45.8	48.4	48.5	51.6	47.3	45	-	48
02:15	45.1	48.1	48.4	50.8	47.4	45	-	47
02:30	45.4	48	48.7	50.4	47.1	44.7	-	47
02:45	44.8	48.4	48.2	50.4	47.1	44.6	-	47
03:00	44.6	48	47.4	50.2	46.7	44.8	-	47
03:15	44.7	47.7	47.5	49.8	46.5	44.7	-	47
03:30	44.3	48	47.8	50.4	46.9	44.5	-	47
03:45	44.5	47.6	47.8	49.7	47.1	45.1	-	47
04:00	44.5	46.7	47.1	49.3	46.8	44.8	-	47
04:15	44.2	46.9	47.3	49	46.6	44.7	-	46
04:30	44.5	46.9	47.5	48.4	46.8	45	-	47
04:45	45.1	46.8	47.8	47.7	47.2	45.6	-	47
05:00	45	46.8	47.1	47.5	47.9	45.8	-	47
05:15	46.4	47.4	47.5	47.6	47.9	46.4	-	47
05:30	46.6	47.1	47	47.5	47.1	46.7	-	47
05:45	47	47.5	47	47.8	47.5	48	-	47
06:00	47.5	47.8	46.9	46.8	47.7	48.6	-	48
06:15	49.2	49.9	48.8	48.8	49.5	50.4	-	49
06:30	50	50.5	49.3	48.5	49.6	51.2	-	50
06:45	50.4	51.1	49.7	49.3	49.6	52	-	50