

ACOUSTICS CENTRAL



Market Place, Manchester

Noise Impact Assessment

20250508-0 R1

Market Place, Manchester

Noise Impact Assessment

20250508-0 R1

MP Manchester Holdings Ltd

3-4 Station Approach
Marylebone Road
London
NW1 5LD

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20250508-0 R1 TH01 & TH02

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Appendix A

Glossary of Acoustics Terms

Appendix B

Document Naming and Version Control Policy

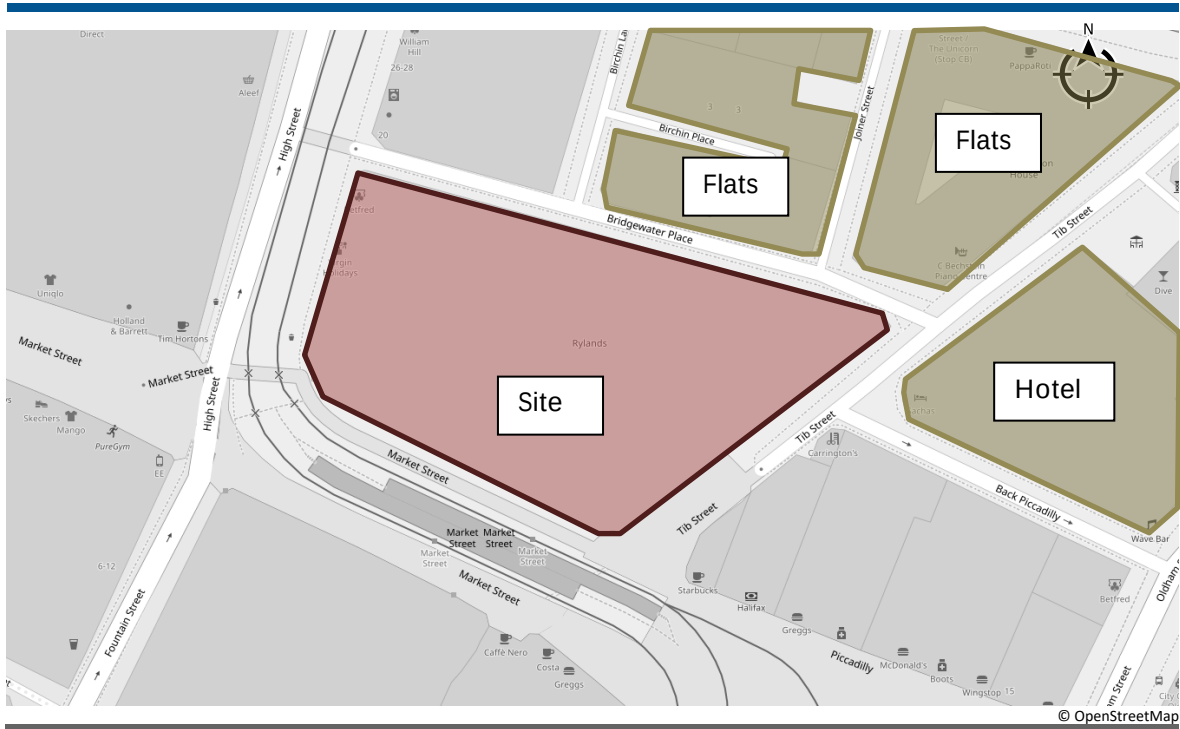
1 Introduction

- 1.1 Planning permission has been granted for the use of the ground floor and basement at the former Debenhams building in Manchester for use as a Foodhall (via the main planning permission and a S73 amendment). Condition 27 of the S73 requires details of opening hours to be submitted.
- 1.2 It is proposed to open the development until midnight. Acoustics Central have been instructed to undertake a noise impact assessment to support the proposed opening hours.
- 1.3 This report sets out the methodology and results of a noise survey undertaken at the site, along with the assessment of patron and music noise within the newly proposed hours of operation, and any conclusions and recommendations arising from the assessments.
- 1.4 The report is necessarily technical in nature; however, every effort has been made to make it as clear as possible. In this regard, the Glossary of Acoustics Terms attached as Appendix A gives further explanation on relevant acoustics terminology used within the report.

2 Site Location

- 2.1 The development site is located on basement and ground floor levels of the Rylands Building, Market Street, Manchester. Market Street runs along the southern boundary of the site and beyond this are multistorey commercial buildings. High Street runs along the western boundary of the site and beyond this is the Arndale Centre which is a commercial building.
- 2.2 Bridgewater Place runs along the northern boundary of the site, beyond this is a mixture of commercial and residential buildings. Tib Street runs along the eastern boundary of the site and beyond this are commercial buildings and the Britannia Sachas Hotel.

2.3 The site and closest noise sensitive premises are shown below:



F1 Site Location Plan

2.4 As detailed above the nearest dwellings are located to the north and north east of site.

3 Policy and Guidance

3.1 Planning Conditions

3.1.1 Planning condition 27 of the S73 approval is reproduced below:

27) Before use of each of the ground floor and basement units commences details of the proposed opening hours shall be submitted to and approved in writing by the City Council as local planning authority. The units shall be not be operated outside the hours approved in discharge of this condition.

Reason - In interests of residential amenity in order to reduce noise and general disturbance in accordance with saved policy DC26 of the Unitary Development Plan for the City of Manchester and policies SP1 and DM1 of the Core Strategy.

3.2 Manchester City Council, Planning and Noise Technical Guidance - Oct 2022

3.2.1 The following guidance is provided within Manchester City Council's Planning and Noise Technical Guidance with respect to noise from music venues which are not structurally connected to the noise sensitive building:

There is a lack of consensus on an assessment method for noise levels within habitable rooms with regard to entertainment noise. The design aim, however, should be to design to 'inaudible*'. The building structure is therefore key and will usually involve a high performing solution in loud music venues.

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:

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

- 3.2.2 Manchester City Council have stated that the assessment of music noise breakout must be undertaken with the doors to the venue open to take account of noise when patrons are moving into/out of the venue.

3.3 Patron Noise

- 3.3.1 Noise from people leaving the premises is expected to be limited to people talking. Guidance for the assessment of noise is found in the Institute of Environmental Management and Assessment "Guidelines for Environmental Noise Impact Assessment" (IEMA 2014).

- 3.3.2 Section 7.2 of this document advises:

"For some particular situations, guidance does exist that can assist with the assessment process, but generally there is no precise guidance that is available regarding determining the overall significance of the noise impact."

"In some situations, the conclusion about the degree of the impact will be clear and straightforward; but in others it is likely that, ultimately, a professional judgement will have to be made by the assessor. It must be remembered that the effects of noise are primarily subjective, and while it is desirable to include as much objectivity as possible into the assessment process in order to obtain consistency, there should be no concern in allowing professional judgement to come in the final analysis."

- 3.3.3 In order to quantitatively evaluate the potential effects of these noise sources (i.e. pedestrians talking), it is considered appropriate to undertake a comparative assessment. This is done by comparing L_{Aeq} ambient noise levels from the operation of the development to the L_{Aeq} ambient noise levels in the absence of this noise source. This methodology is widely used in the acoustics industry and an example basis can be found in the Guidelines for Noise Impact Assessment (Consultation Draft) produced by the Institute of Environmental Management and Assessment and the Institute of Acoustics in 2002. The following effect descriptors are used:

Change in Noise Level (dB L_{Aeq})	Impact Description
0.0	None
0.1 to 2.9	Minor
3.0 to 4.9	Moderate
5.0 to 9.9	Substantial
10.0 and more	Major

T1 Noise Impact Descriptors

- 3.3.4 The presentation of changes in sound level to one decimal place in the table is not a reflection of the accuracy of any assessment undertaken but rather serves to provide a clear threshold between adjacent impact descriptors.
- 3.3.5 The predicted noise levels will be free-field values to allow for direct comparison with the measured ambient level values.
- 3.3.6 Once a noise level change has been identified an examination must also be made of other factors, which may not be adequately taken into consideration by assessing noise level changes alone. These factors include:
- the averaging time period used,
 - the time of day,
 - the frequency of event occurrence,
 - the nature and spectral characteristics of the noise source being examined,
 - the subjective character of the noise being examined and of the general noise climate.
- 3.3.7 The site is located in a city centre location with a significant amount of pedestrian foot traffic passing at all times and so people leaving the development are not considered to be introducing a new character of noise source.
- 3.3.8 It is proposed that the change in $L_{Aeq,1 \text{ hour}}$ noise level due to people leaving the development should not exceed + 3 dB, in line with a typical description of a Minor Impact.

4 Environmental Noise Survey

4.1 General

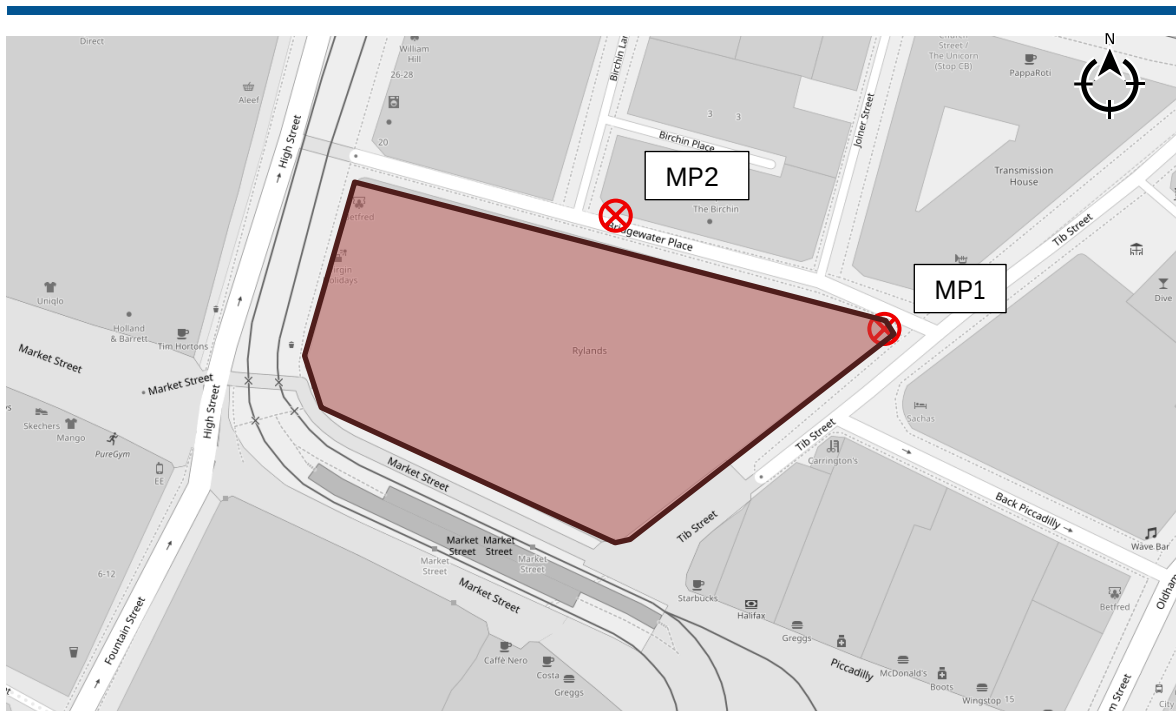
- 4.1.1 In order to quantify the noise levels at and around the site, an environmental noise survey was carried out, commencing on Monday 16th June 2025 and concluding on Wednesday 18th June 2025.

4.2 Guidance and Standards

- 4.2.1 The survey instrumentation, methodology and reporting of results has been carried out following guidance contained within British Standard 7445-1:2003 - *'Description and measurement of environmental noise - Part 1: Guide to quantities and procedures'*,

4.3 Measurement Positions

- 4.3.1 Noise measurements were made at two positions to the north side of the building. These positions are illustrated on the following figure, and a description given below.



F2 Measurement position location

- **MP1** The sound level meter microphone was mounted on the northeastern corner of the site, approximately 4m above ground level. Measurements made at this position were intended to quantify the general existing noise climate currently experienced by sensitivities on Tib Street.
- **MP2** The sound level meter microphone was mounted in the middle of the northern boundary, approximately 4m above ground level. Measurements made at this position were intended to

quantify the general existing noise climate currently experienced by the nearest sensitivities on Bridgewater Place.

4.4 Noise Monitoring Equipment

4.4.1 All noise measurements were made with the equipment detailed in the following table.

Item	Manufacturer	Type
Sound Level Analyser (x2)	NTi Audio	XL2-TA
Microphone (x2)	NTi Audio	MC230
Pre-Amp (x2)	NTi Audio	MA220
Acoustic Calibrator	Castle	GA607

T2 Equipment used during unattended noise survey.

4.4.2 The sound level analysers presented in the above table conform to the Type 1 specification as given in BS EN 61672-1:2003 - *'Electroacoustics - Sound level meters - Part 1: Specifications'*. The calibrator presented in the above table conforms to the Class 1 specification as specified in IEC 60942:2003 - *'Electroacoustics - Sound calibrators'*.

4.5 Traceable Calibration

4.5.1 The measurement instrumentation, including sound level analysers, preamplifiers and microphones have undergone traceable calibration by either a competent laboratory or the equipment manufacturer within the last two years. The acoustic calibrator has undergone traceable calibration by either a competent laboratory or the equipment manufacturer within the last year. The calibration certificates for the above equipment can be provided on request.

4.5.2 A field calibration check was undertaken on the noise measurement equipment before and after the survey to ensure a consistent and acceptable level of accuracy was maintained. No significant drift was noted to have occurred.

4.6 Data Recorded

4.6.1 Noise data was recorded over consecutive 15-minute periods in all relevant indices, including L_{Aeq} , L_{A90} , and $L_{Amax,F}$ ¹. See attached Appendix A for an explanation of noise units used.

4.6.2 Octave band data for each of the above indices was also recorded at all positions, the filters for which met the requirements of BS EN 61260:1996, Class 1.

4.7 Meteorological Conditions

4.7.1 The weather conditions when setting up and collecting the equipment was hot with clear skies and no wind.

¹ Maximum A-weighted sound pressure level using time-weighting "F" and "S". As stated in BS EN 61672-1:2003 Design-goal time constants are 0,125 s for time-weighting F (Fast) and 1 s for time weighting S (Slow).

4.8 Results

- 4.8.1 The noise climate at the site when setting up and collecting the equipment during daytime hours was dominated by noise by construction on the development site. Observations of the noise climate around the site, made prior to the survey, are that it is dominated by a mixture of vehicle noise (including trams on Market Street) and noise from people walking past and talking.
- 4.8.2 The results of the noise survey are shown on attached time histories 20250508-0 R1 TH01 & TH02 for positions MP1 and MP2 respectively. The hourly noise levels measured between 21:00 and 23:00 are shown below:

	MP1	MP2
Period	$L_{Aeq, 1h}$	$L_{Aeq, 1h}$
2100-2200	52	61
2200-2300	53	61
2300-0000	52	60

T3 Measured $L_{Aeq, 1hour}$ noise levels

- 4.8.3 The representative octave band background noise levels up to 00:00 at both measurement positions are shown below:

Location	Representative Background Noise Level (L ₉₀ , dB) @ Octave							dB(A)
	Band Center Frequency (Hz)							
	63	125	250	500	1k	2k	4k	
Bridge Street	55	46	43	43	40	35	26	45
Tib Street	52	50	49	49	47	44	36	52

T4 Octave band background noise levels (L_{90} , dB)

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Controls

- 5.2.6 At the end of the evening Door Supervisors will help to expedite the dispersal of patrons with their actions by encouraging patrons to leave gradually via the appropriate exits at the end of the night to try and avoid large numbers of patrons all leaving at the same time. They will also remind people to leave quietly and ask patrons not to assemble or loiter outside the premises once they have left.
- 5.2.7 Due to the proximity of Entrance 3 to the adjacent flats, along with the lower noise levels measured in this location it is proposed that this entrance will not be used after 2100 except as an emergency exit.
- 5.2.8 At the closing time of the venue patrons will be asked to leave via the exit on the corner of High Street and Market Street to minimise disturbance to neighbours.

Noise Sources

- 5.2.9 Data in respect of noise levels generated by persons talking under different conditions can be found in BS EN ISO 9921-1:2003 Ergonomics – Assessment of speech communication. The standard considers the ambient noise level and presents a range of speech levels of increasing volume and gives guidance as to what speech levels would typically be employed to converse with a person standing close by.
- 5.2.10 Taking due account of the existing ambient noise levels measured during the survey, the corresponding sound pressure levels at 1m from the speaker, at each location are therefore taken to be as follows:

Vocal Effort	Level at 1m, dB(A)
Standard Voice	60
Raised Voice	66

T5 Voice effort noise levels

Noise Impact

- 5.2.11 The number of people entering or leaving the premises per hour is unknown and so as a worst case assessment it is assumed that 400 people would leave/enter the premises each hour between 2100 and 0000. It has been assumed that people would be evenly spread between the two entrances and so approximately 200 people per entrance per hour. This equates to 16-17 people per entrance in every 5 minutes.
- 5.2.12 As detailed above the main noise source is considered to be people talking when leaving the premises. Not everyone would be talking at the same time and door security would help in keeping voices to a minimum. As a reasonable worst case it is assumed that 1 out of 2 people would be talking at any one time. This is a worst case assessment as not all patrons will be in pairs, but larger groups when only 1 of the larger group is likely to be talking.

- 5.2.13 The door staff would also ensure that people will not loiter outside the entrance doors and so it is expected that people will essentially walk straight out of the venue and into Manchester City Centre.
- 5.2.14 The noise source for the people entering and leaving the venue is assumed to be within 5m of the entrance. After this point it is considered that people are no longer part of the venue and will be indeterminate from the wider public.

Results

- 5.2.15 The resultant noise levels have been calculated at the nearest window of the Sachas Hotel to the north east of the site. This is considered to be the only noise sensitive location with a direct line of sight to any of the entrance doors used after 21:00. The resultant noise levels at the hotel based on 400 people leaving or entering the premises each hour between 21:00 and 00:00 are shown below along with the existing ambient noise levels.

Location	Time period	Calculated $L_{Aeq,1h}$	Minimum Existing $L_{Aeq,1h}$	Total $L_{Aeq,1h}$	Difference
Hotel	21:00-22:00	35.6	61.2	61.2	0.0
Hotel	22:00-23:00	35.6	61.4	61.4	0.0
Hotel	23:00-00:00	35.6	59.6	59.6	0.0

T6 Assessed talking noise levels

- 5.2.16 The results above show that the increase in noise climate with 400 people leaving the premises is 0 dB and so is considered to be of no or minor impact.

5.3 Music Noise

Noise Limits

- 5.3.1 Noise limits for music noise breakout have been set at 5 dB below the background noise level L_{90} in each octave band as required by the Council and are provided below. These are set at the nearest flats on Bridge Street and the Sachas Hotel on Tib Street.

	Music Noise Limit ($L_{Aeq,5min}$, dB) @ Octave Band Centre Frequency (Hz)						
	63	125	250	500	1k	2k	4k
Bridge Street Flats	50	41	38	38	35	30	21
Sachas Hotel	47	45	44	44	42	39	31

T7 Music Noise Limits

Source Noise Levels

- 5.3.2 Music noise will be set at background noise levels. The noise levels used within the assessment are shown in the table below:

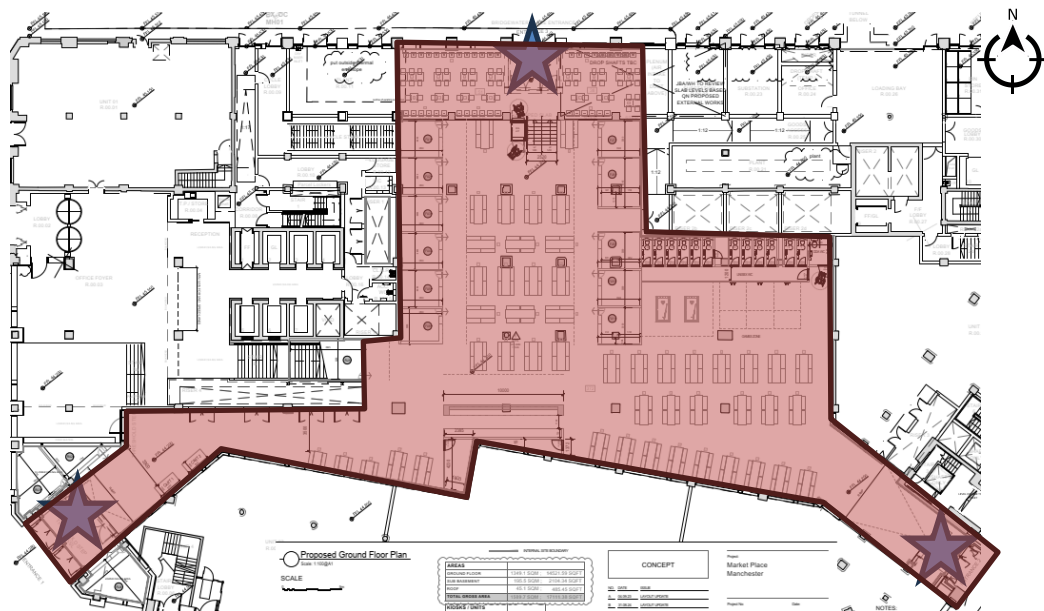
Noise Source	L _{Aeq,5min} @ Octave Band Centre Frequency (Hz)							L _{Aeq,T} dB(A)
	63	125	250	500	1k	2k	4k	
Music Noise	78	77	76	75	75	75	68	80

T8 Background music noise levels (L_{eq,5min})

- 5.3.3 The noise levels above have been increased from Acoustics Centrals standard background music noise levels by 5 dB(A) to provide a worst case assessment.

Assessment

- 5.3.4 Music noise levels breaking out of the development have been calculated to the nearest noise sensitive receptors.
- 5.3.5 The layout of Market Place is shown below, along with the three entrances. As shown the only external facades are located at and around the entrance doors to the space.



F4 Development plan

- 5.3.6 The assessment has been undertaken based on the operation between 21:00 and 00:00 to be representative of the worst-case times. Entrance doors 1 and 2 are set as open in the calculation and Entrance 3 is closed as this entrance will only be used for emergencies after 21:00.

- 5.3.7 The sound insulation of the northern façade has previously been set as part of BWB's Noise and Vibration Impact Assessment report ref MCP2087 as 28 dB R_w+C_{tr} . Indicative octave band performance values for the glazing have been set to meet this single figure performance and are shown below:

Location / Item	Apparent Sound Reduction R' (dB), Octave Band Centre Frequency (Hz)						
	63	125	250	500	1k	2k	4k
Windows and Doors							
Indicative glazing construction	16	22	22	26	34	35	35
To achieve R_w+C_{tr} 28 dB							

T9 Minimum building façade performance

- 5.3.8 The performance detailed in the table above must be achieved in its installed condition on-site. For the glazed elements this includes the effect of the frames and seals.
- 5.3.9 The noise levels at the assessment positions have been calculated taking account of the area of each façade element along with the sound reduction performance detailed above. Corrections have then been made to take account of the distance between the source and receiver.

Results

- 5.3.10 The resultant noise levels at the assessment positions are shown in the table below along with the noise limits.

Location	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	dB(A)
Bridge Street Flats	48	40	38	30	28	28	21	35
Limits	50	41	38	38	35	30	21	45
Sachas Hotel	41	40	39	38	38	38	31	43
Limits	47	45	44	44	42	39	31	52

T10 Assessed music noise levels

- 5.3.11 The results show that the requirements of Manchester City Council can be achieved on site.

5.4 Noise Limiter

- 5.4.1 Manchester City Council have requested that a noise limiter is installed on site to ensure that the noise limits are not exceeded at the nearest noise sensitive properties.
- 5.4.2 The limiter must be installed on the main PA system in the venue and will be set to meet the octave band noise limits at the nearest noise sensitive receptor as set out in table T7 above.

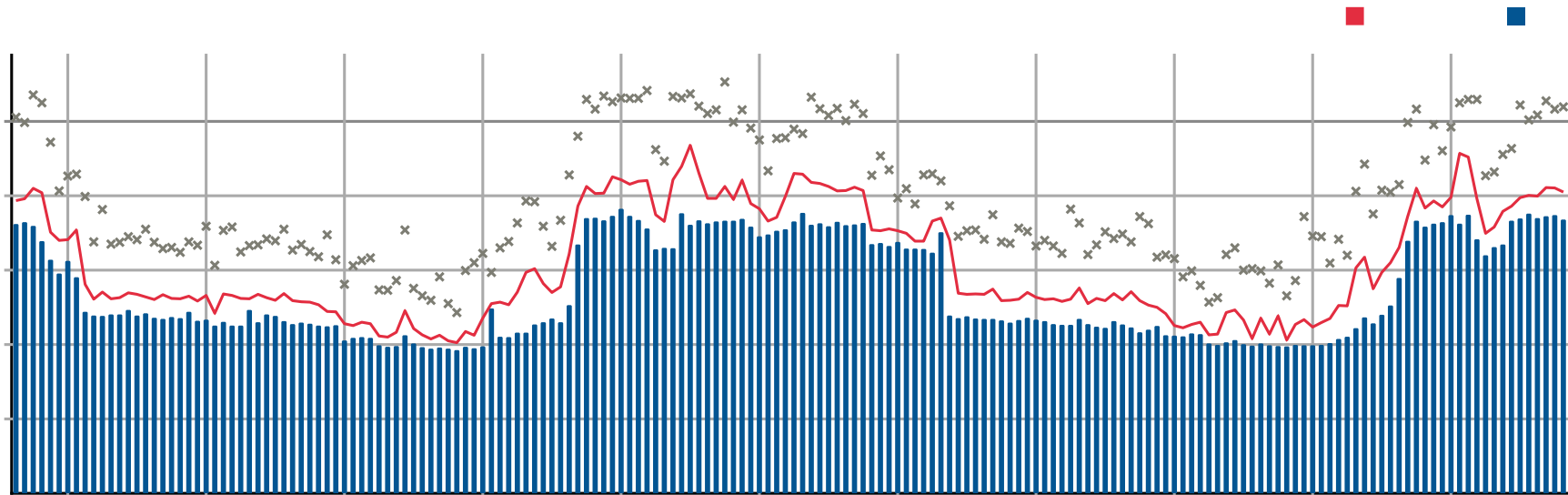
- 5.4.3 One way to demonstrate compliance with the limits above is to measure the internal levels next to the exits to the property and confirm that they meet the noise levels shown in table T8.
- 5.4.4 The specifics of the noise limiting system will be agreed at a later stage but the client agrees to install a noise limiting system.

6 Conclusion

- 6.1 Planning permission has been granted for the use of the ground floor and basement at the former Debenhams building in Manchester for use as a Foodhall (via the main planning permission and a S73 amendment). Condition 27 of the S73 requires details of opening hours to be submitted.
- 6.2 A noise survey has been undertaken on site, full details of which are provided within this report. The results of the noise survey have been used to assess the noise impact of the development when opening until midnight.
- 6.3 The noise impact assessment has shown that with the entrance to Bridgewater Street closed after 21:00 the noise impact between 21:00 and midnight from patrons is none or minor. The assessment also shows that MCC requirements for music noise will also be met even when the doors to the venue are open. Therefore noise is not considered to be a reason to limit the opening hours to before midnight.

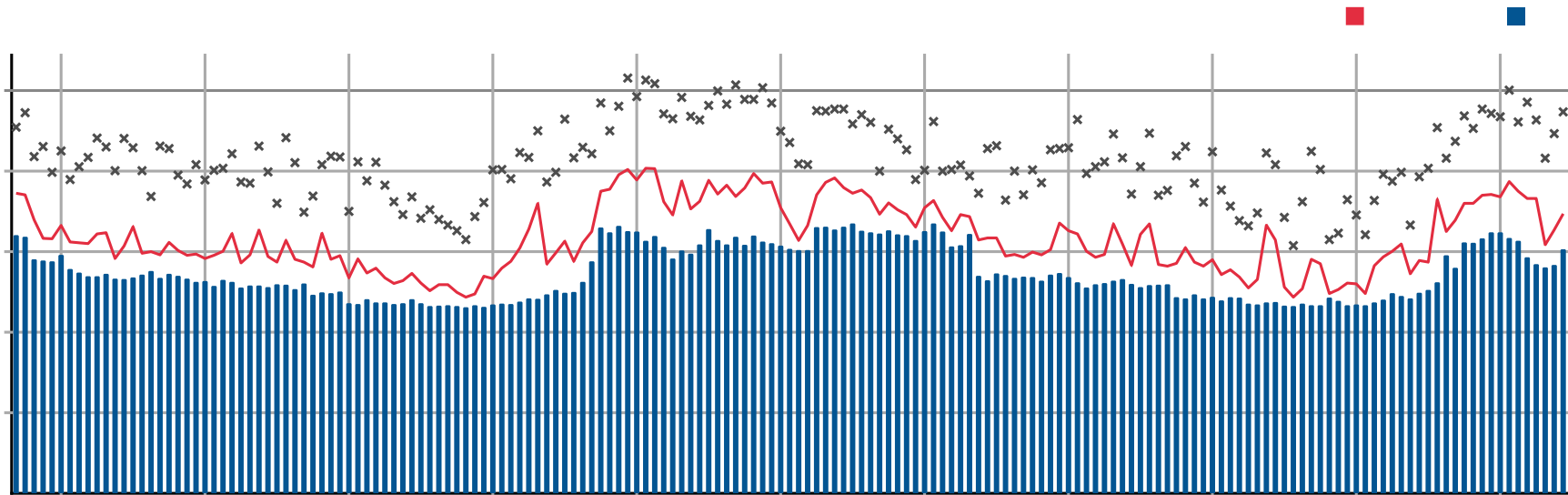
20250508-0 R1 TH01

Noise Levels Recorded at Position MP1, 16th – 18th June 2025



20250508-0 R1 TH02

Noise Levels Recorded at Position MP2, 16th – 18th June 2025



Appendix A

Glossary of Acoustics Terms – Noise Levels

Single Figures and Spectra

Generally speaking, the human ear is capable of hearing noise within the frequency range 20Hz to 20kHz. To make handling of data more meaningful and manageable, the range is often divided into 'bands', each of which covers a specific part.

For most acoustics applications, either octave or third-octave bands are used. Each band has a specific centre frequency which is used to identify it. When reported, the band centre frequency is given, along with the associated noise level, e.g. 63dB L_{eq} at 500Hz.

Noise levels can also be reported as single figure values where all energy contained within the measured frequency range is summed to provide a single figure. However, as the human ear does not hear noise at different frequencies with equal loudness, a weighting curve is often applied to levels before summing to account for this fact.

The most common curve is the A-weighting curve, and its use is denoted by including the letter 'A' with either the index e.g. 63dB L_{Aeq} , or with the decibel suffix (if the index is described elsewhere), e.g. 63dBA. 'B' and 'C' weighting curves may also be applied, depending on the application. A 'Z' is used to indicate a single figure where no weighting has been applied, e.g. 63dB L_{Zeq} .

Noise Level Indices

Noise level measurements can be made and reported in a variety of indices. The index is reported using the letter L to indicate Level, followed by, for example, abbreviations to represent the specifics of the index, and time intervals where applicable. The most commonly used are given below.

$L_{eq,T}$, (dB) - Equivalent Continuous Sound Pressure Level

The $L_{eq,T}$ value is the sound pressure level in decibels of a continuous steady sound that within a specified time interval, T, has the same mean-squared sound pressure as a sound that varies with time. It is often used as a descriptor of the ambient noise climate, and commonly seen as a single A-weighted figure $L_{Aeq,T}$.

L_{max} , (dB) - Maximum Sound Pressure Level

The L_{max} value is the highest recorded sound pressure level in decibels averaged across a specified time constant during a noise measurement of certain duration. Two time constants are used, Fast and Slow, where the time constants are 0.125s and 1s respectively. The time constant is denoted in the index, $L_{max,F}$ for Fast and $L_{max,S}$ for Slow. It is often used to identify transient events that have a high-level relative to the ambient noise climate, and commonly seen as a single A-weighted figure L_{Amax} .

$L_{10,T}$ (dB) - Equivalent Continuous Sound Pressure Level

The $L_{10,T}$ value is the sound pressure level in decibels that is exceeded for 10% of a given time interval, T. It is often used as a measurement of noise from transportation sources such as road and rail. It is commonly seen as a single A-weighted figure $L_{A10,T}$.

$L_{90,T}$ (dB) - Equivalent Continuous Sound Pressure Level

The $L_{90,T}$ value is the sound pressure level in decibels that is exceeded for 90% of a given time interval, T. It is often used as a descriptor of the background noise climate, and commonly seen as a single A-weighted figure $L_{A90,T}$.

Appendix B

Document Naming and Version Control Policy

All documents are issued with a unique number which comprises the principle 8-digit project and 1-digit subsection numbers, for example 20151203-0, and a reference indicating iteration of document type, for example R1 for Report 1, M2 for Memorandum 2 etc.

All documents employ version control through the use of a unique version number. The version numbers employ two levels of hierarchy, and use the format illustrated below:

V 1 . 2

Major Minor

Major

A major revision occurs when the report is revised to reflect significant changes in design strategy. For example, wide scale changes to building footprint or general arrangements, changes to principle construction type (e.g. masonry to lightweight), reselection of mechanical services plant etc. A change in strategy that takes place within the same RIBA work stage for example will prompt a major revision to a document.

Minor

A minor revision occurs when the report is revised to reflect minor changes to the design implementation. For example a change in the type of natural vent, extract fan, surface finish etc. to be used, on the project. Minor revisions will also occur when there is a change in wording of the report text.

Reporting

The Document History and Version Control table on the second page of each report identifies the versions through which the document has moved, along with the date, author that produced the version, and a description of its purpose or change.

Electronic File Naming

Reports issued electronically use the following format:

2012xxxx	-	x	Rx	Noise Assessment Report	v1.0	yyyy.mm.dd.pdf
Project Number		Subsection	Report Number	Report Name	Version	Date File Extension

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