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28 April 2026

Thaikhun, Spinningfields

Operational noise egress assessment

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A	23 Apr 26		SC	VdH
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Summary

Sandy Brown has been commissioned by Thai Leasure Group to provide acoustic advice in relation to the proposed development at Thaikhun, Spinningfields, Manchester.

An environmental noise survey has been carried out to determine the existing sound levels

Based on the requirements of the Local Authority and on the results of the noise survey, amplified sound from the operational uses of the development must be designed such that the cumulative noise level at nearby noise sensitive premises does not exceed spectra equivalent to $L_{Aeq,15min}$ 50 dB during the day, and $L_{Aeq,15min}$ 48 dB during the evening.

An assessment of operational noise associated with entertainment noise has been carried out and internal operational noise limits have been set. This is based on assumptions made for the roof and cladding constructions.

Typically Manchester City Council require lobbied doors to be included within the design when amplified sound is being used. As such lobbied doors have been included within the basis of the assessment.

To achieve the required internal noise limits, the sound system used would need to be in-house, with an electronic noise limiter required so that the internal limits are not exceed.

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1 Introduction

Sandy Brown has been commissioned by Thai Leisure Group to provide acoustic advice in relation to the proposed development at Thaikhun, Spinningfields, Manchester.

As part of this, an environmental noise survey is required, the purpose of which is to establish the existing sound levels on and around the site.

This report presents the survey method, results and an assessment of operational noise egress.

2 Proposed development

The proposed development comprises an "extension" to the existing Thaikhun restaurant which shall comprise the reorganisation and improvement of the external restaurant area, including the addition of a quick serve restaurant and the removal of existing canopy structure and erection of a new canopy structure at Thaikhun restaurant at The Avenue, Spinningfields, Manchester.

The design proposals show a mobile DJ booth with the following proposed operational times:

- Friday evenings 19:00–23:00
- Saturdays 12:00–15:00, 19:00–23:00 including bank holidays and Thai festival dates.

This proposal has been captured within our assessment.

2.1 Site description

The site location (outlined in red) in relation to its surroundings is shown in Figure 1.



Figure 1 Aerial view of the site and its surroundings (courtesy of Google Earth pro)

The site is close to the following premises:

- Commercial premises at the Avenue Spinningfields, including ground floor restaurant space with external seating highlighted in blue in Figure 1.
- Adjacent restaurant space at the Avenue Spinningfields with external seating areas highlighted in green in Figure 1.
- Residential premises on Wood Street, highlighted in yellow in Figure 1.

These receptors have been identified as the closest and most noise sensitive.

3 Noise survey method

An environmental noise survey has been carried out which comprised attended noise measurements at the site taken over contiguous 15 minute periods over the following times on 9 April 2026:

- 14:00 to 15:00 (daytime)
- 15:25 to 16:25 (daytime)
- 18:35 to 20:35 (evening)

The measurements and information provided in this report are in accordance with requirements of BS 7445, as referenced in Appendix A.

The microphone was mounted on a tripod approximately 1.5 m above the ground level and approximately 2 m from any other reflective surface.

The measurement position is indicated in Figure 1 as Position 1.

Details of the equipment used and the noise indices measured are provided in Appendix A.

3.1 Weather conditions

Weather conditions during the survey are described in Appendix A.

4 Assessment criteria

4.1 NPPF and NPSE

The National Planning Policy Framework, December 2024 and updated in February 2025 (NPPF) sets out the UK government's planning requirements. It supersedes previous guidance notes such as PPG24. No specific noise criteria are set out in the NPPF, or in the Noise Policy Statement for England (NPSE) 2010 to which it refers.

The NPPF, clause 198 states:

> *'Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*
>
> - *mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life.*
> - *identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.'*

and clause 200 states:

> *'Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent*

of change') should be required to provide suitable mitigation before the development has been completed.'

The NPSE states that its aims are as follows:

'Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *Avoid significant adverse impacts on health and quality of life*
- *Mitigate and minimise adverse impacts on health and quality of life and*
- *Where possible, contribute to the improvement of health and quality of life.'*

As such, neither document sets out specific acoustic criteria for new developments or expansions to existing sites, but they require consideration of the effect of existing noise on the new development and the effect of noise from the development on the surroundings.

4.2 NPPG 2014

The National Planning Practice Guidance (NPPG) is a web-based document which complements the NPPF and provides advice on how to deliver its policies. The document provides guidance on how to recognise when noise could be a concern and the factors that influence this, along with outline guidance on noise mitigation through engineering and design, etc.

4.3 BS 4142:2014+A1:2019

Guidance for noise emission from proposed new items of building services plant is given in BS 4142: 2014+A1:2019 '*Methods for rating and assessing industrial and commercial sound*'. BS 4142 provides a method for assessing noise from items such as building services plant against the existing background sound levels at the nearest noise sensitive.

BS 4142 suggests that if the noise level is 10 dB or higher than the existing background sound level, it is likely to be an indication of a significant adverse impact. If the level is 5 dB above the existing background sound level, it is likely to be an indication of an adverse impact. If the level does not exceed the background level, it is an indication of having a low impact. Guidance on corrections for attention catching features is provided in Appendix A.

4.4 Manchester City Council criteria

Manchester City Council (MCC) *Noise and Planning Guidance* dated October 2022 states the following:

"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 requirement is the key driver for the control of operational noise from Thaikhun in relation to new sources (such as the DJ booth). We understand that MCC define noise

sensitive receptors as both commercial (including other restaurants) and residential premises.

5 Noise survey results

5.1 Observations

The dominant noise sources observed at the site during the survey were pedestrians passing and conversing during the day and amplified music from The Oast House Stage during the evening. This is an external live music stage situated 30 m to the north-west.

5.2 Results

Noise levels and key noise sources recorded during the attended measurements are summarised in Table 1

Table 1 Noise levels and key noise sources from attended measurements

Start time	Sound pressure levels (dB)		Noise sources
	$L_{Aeq,15min}$	$L_{A90,15min}$	
14:00	54	51	Pedestrians talking, distant road traffic and just audible amplified music
14:15	53	51	As above
14:30	57	51	As above
14:45	55	51	As above
15:25	54	52	As above
15:40	55	51	Loud customers from nearby commercial units
15:55	54	52	Pedestrians talking, distant road traffic and just audible amplified music
16:10	55	52	As above
16:25	53	51	As above
18:35	61	55	Amplified music from The Oast House stage, some pedestrians passing by
18:50	62	57	As above

Start time	Sound pressure levels (dB)		Noise sources
	$L_{Aeq,15min}$	$L_{A90,15min}$	
19:05	61	55	Pedestrians loudly passing measurement position
19:20	59	55	Amplified music from The Oast House stage, some pedestrians passing by
19:35	61	56	As above
19:50	62	56	As above
20:05	63	55	As above
20:20	59	54	As above
20:35	57	55	As above

The average noise level varied between L_{Aeq} 53-63 dB, with a typical level of L_{Aeq} 55 dB during the daytime and L_{Aeq} 60 dB during the evening. The backgrounds varied between L_{A90} 51-57 dB, with the representative level determined as L_{A90} 51 dB.

Octave-band background (L_{90}) measurements are summarised in Appendix C.

5.3 Basic limits

Based on the above criteria and measurement results, noise egress from amplified sound associated with the development should not exceed the limits set out in Table 2,

Table 2 Maximum amplified sound levels incident to the nearest noise sensitive receptors

	Octave-band centre frequency (Hz) Maximum sound pressure level incident at noise sensitive receptors, L_{eq} (dB)							
	63	125	250	500	1k	2k	4k	8k
Daytime (07:00-19:00)	55	53	51	47	46	40	32	22
Evening (19:00-23:00)	54	52	48	44	43	39	33	23

These spectra are equivalent to broadband levels of $L_{Aeq,15min}$ 50 dB during the day and $L_{Aeq,15min}$ 48 dB during the evening. These values are 5 dB below the representative background noise level in each octave band.

6 Assessment

Calculations have been undertaken to determine the maximum internal operational noise limits to the proposed extension. The calculations take into account attenuation due to distance and assumed losses due to building envelope elements.

6.1 Entrance doors

The proposed entrance is shown in Figure 2.

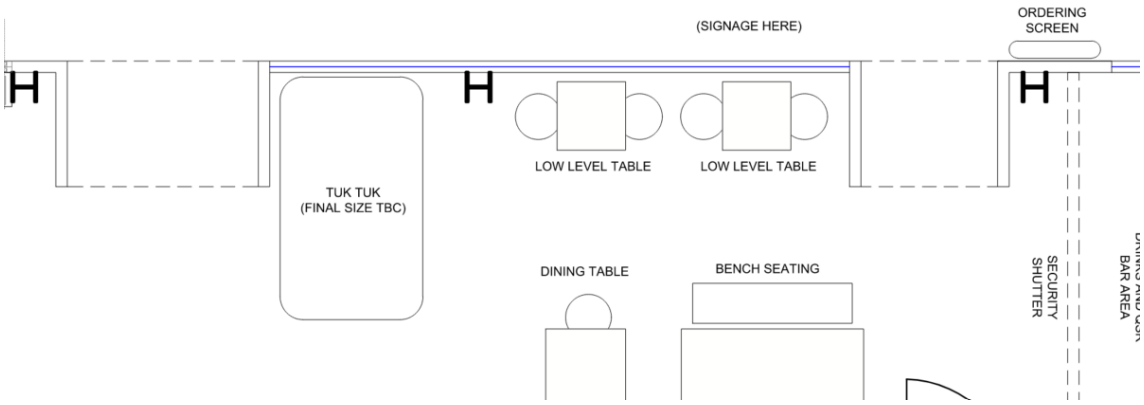


Figure 2 Excerpt of the proposed plan showing the proposed entrances

Doors are not indicated to the entrance area, however typically Manchester City Council require lobbied doors to be included within the design when amplified sound is being used. As such lobbied doors have been included within the basis of the assessment, although results including an open entrance have been carried out as part of the assessment verification.

6.2 Assumptions

It is understood that the building envelope is to comprise aluminium cladding, with glazed bi-fold doors. The assumed sound insulation performance spectra used as the basis of this assessment are presented in Table 3.

Table 3 Assumed sound insulation spectra used in the assessment

	In-situ sound reduction performance, R' (dB)								
	63	125	250	500	1k	2k	4k	8k	R'_w
Glazed bi-fold doors based on in-house test data	19	21	26	29	35	38	40	40	34
Aluminium cladding and roof[1]	19	17	25	35	41	47	50	53	36
Lobbied doors[2]	28	23	32	41	43	45	41	41	42

[1] Assumed 0.9 mm aluminium sheet with 100 mm mineral wool insulation and 0.9 mm steel inner lining

[2] The assumed performance is based on the overall expected performance of two lobbied doors rated at R_w 38 dB

6.3 Results

Based on the calculation assumptions set out above, maximum internal sound pressure limits have been set to ensure that the operational noise limits are met at nearby noise sensitive receptors.

The internal limits are summarised in Table 4.

Table 4 Maximum internal sound limits

	Octave-band centre frequency (Hz) Maximum internal sound pressure level sensitive , L_{eq} (dB)							
	63	125	250	500	1k	2k	4k	8k
Daytime (07:00-19:00)	80	75	82	86	91	89	83	74
Evening (19:00-23:00)	79	74	79	83	88	88	84	75

These limits are equivalent to L_{Aeq} 95 dB during the day and L_{Aeq} 93 dB during the evening. These would be suitable for amplified sound from a mobile DJ booth over and above normal dining noise levels (typically L_{Aeq} 80 dB). To comply with these limits it will be important that Thaikhun have an in-house sound system featuring a suitably calibrated noise limiter.

With these limits as the basis, to ensure that noise transfer to the adjacent restaurant space is suitably controlled, the separating walls (marked in green in Figure 3) should meet the minimum sound insulation performance requirements set out in Table 5.

Table 5 Minimum sound insulation performance requirement for separating partition

	Octave-band centre frequency (Hz) Minimum in-situ sound insulation performance, R'_w (dB)							
	63	125	250	500	1k	2k	4k	8k
Separating partition	22	19	28	36	42	47	50	50

This is equivalent to an overall sound insulation performance of R'_w+C_{tr} 31 dB. Which will require low frequency enhancement.

These performances would be considered achievable with aluminium lined cladding with an additional plasterboard or MDF lining with mineral fibre insulation within a 25 mm cavity.

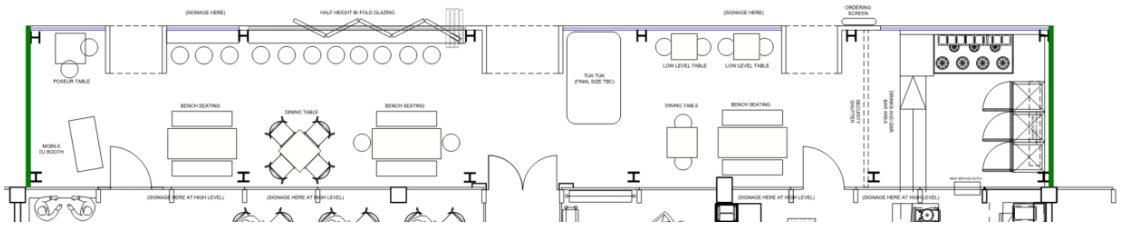


Figure 3 Location of separating partition

7 Conclusion

An environmental noise survey has been carried out to assess the existing background sound pressure level in the immediate vicinity of the site.

Based on the requirements of the Local Authority and on the results of the noise survey, amplified sound from the operational uses of the development must be designed such that the cumulative noise level at nearby noise sensitive premises does not exceed spectra equivalent to $L_{Aeq,15min}$ 50 dB during the day, and $L_{Aeq,15min}$ 48 dB during the evening.

An assessment of operational noise associated with entertainment noise has been carried out and internal operational noise limits have been set.

Typically Manchester City Council require lobbied doors to be included within the design when amplified sound is being used. As such lobbied doors have been included within the basis of the assessment.

To achieve the required internal noise limits, the sound system used would need to be in-house, with an electronic noise limiter required so that the internal limits are not exceed.

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Appendix A

Glossary of acoustic terms

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General terms

Airborne sound	Sound propagating through the air.
Airborne sound insulation	The ability of building elements or structures to reduce airborne sound transmission.
Frequency	The number of cycles per second. The unit of frequency is the Hertz (Hz). Frequency gives a sound its distinctive tone.
Frequency band	A continuous range of frequencies between stated upper and lower limits (see also 'Octave band' and 'One-third octave band').
Separating element	An element (such as a wall, floor, door, window) which separates buildings or parts of buildings.
Sound pressure level	A logarithmic measure of the effective sound pressure of a sound relative to a reference value, measured in decibels, dB. Sound pressure levels are dependent on the conditions under which they are measured.
Spectrum	The composition of a particular sound in terms of separate frequency bands.

Acoustic parameters

'A' weighting	Frequency weighting based on the frequency response of the human ear which has been found to correlate well with the subjective response to sound.
C_{tr}	The correction to a sound insulation quantity (such as R_w or $D_{nT,w}$) to take account of a specific sound spectrum with low frequency sound energy.
Decibel (dB)	A logarithmic unit used for many acoustic values to indicate the level with respect to a reference level
Hz	Hertz (Hz) is the unit of frequency (see also 'Frequency')
$L_{A90,T}$	The A-weighted sound pressure level exceeded 90% of the measurement period (T) over which a noise is measured (ie, the quietest 10% of the period). When not weighted it is denoted $L_{90,T}$. This parameter is generally considered to be representative of a constant noise source, or background noise level.

$L_{Aeq,T}$	Equivalent A-weighted sound pressure level of a steady noise that has the same acoustic energy as a fluctuating noise over the measurement period (T). When not weighted it is denoted $L_{eq,T}$.
Octave band	A frequency band in which the upper limit of the band is twice the frequency of the lower limit.
R'	Apparent sound reduction index. The on-site equivalent of the sound reduction index, R, which is measured in the presence of flanking paths. A higher numerical quantity represents a better performance.
R'_w	Apparent weighted sound reduction index. The on-site equivalent of the weighted sound reduction index, R_w. A higher numerical quantity represents a better performance.

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Appendix B

Survey details

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Reference standards

- BS 7445 Part 1: 2003 *Description and measurement of environmental noise, Part 1. Guide to quantities and procedures*
- BS 7445: Part 2: 1991 *Description and measurement of environmental noise, Part 2. Guide to the acquisition of data pertinent to land use*.

Equipment

The attended noise measurements were taken using a Rion NL 52 sound level meter.

Calibration details for the equipment used during the survey are provided in Table A1.

Table A1 Equipment calibration data

Equipment description	Type/serial number	Manufacturer	Calibration expiry	Calibration certification number
Sound level meter	NL-52/01143564	Rion	12 Dec 26	TCRT24/1898
Microphone	UC-59/10153	Rion	12 Dec 26	TCRT24/1898
Pre-amp	NH-25/43581	Rion	12 Dec 26	TCRT24/1898
Calibrator	NC-74/34257023	Rion	12 Dec 26	TCRT24/1895

[1] Calibration of the meters used for the measurements is traceable to national standards. Calibration certificates for the sound level meter(s) used in this survey are available upon request.

Calibration checks were carried out on the meters and their measurement chains at the beginning and end of the survey. No significant calibration deviation occurred.

Noise indices

Noise indices recorded included the following:

- $L_{Aeq,T}$ The A-weighted equivalent continuous sound pressure level over a period of time, T.
- $L_{AFmax,T}$ The A-weighted maximum sound pressure level that occurred during a given period, T, with a fast time weighting.
- $L_{A90,T}$ The A-weighted sound pressure level exceeded for 90% of the measurement period. Indicative of the background sound level.

Sound pressure level measurements are normally taken with an A-weighting (denoted by a subscript 'A', eg, L_{A90}) to approximate the frequency response of the human ear.

A more detailed explanation of these quantities can be found in BS 7445: Part 1: 2003 *Description and measurement of environmental noise, Part 1. Guide to quantities and procedures*.

Weather conditions

During the attended noise measurements, the weather was generally clear and dry and no rain occurred. Wind speeds were generally below 5 m/s.

These weather conditions are considered suitable for obtaining representative measurements.

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Appendix C

Octave-band background sound levels

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Table 6 Octave-band background sound pressure levels measured at Position 1

	Octave-band centre frequency (Hz) Background sound pressure level, L_{90} (dB)							
	63	125	250	500	1k	2k	4k	8k
14:00	55	53	51	48	46	41	33	24
14:15	55	53	51	47	46	40	32	22
14:30	55	53	52	48	46	41	33	22
14:45	55	53	51	48	46	41	34	24
15:00	56	56	55	52	51	48	44	39
15:25	56	53	51	48	47	42	35	26
15:40	56	53	51	48	47	41	34	23
15:55	56	54	51	48	47	42	35	24
16:10	55	54	51	48	46	41	33	24
16:25	55	53	51	47	46	40	33	24
18:35	58	58	53	50	49	45	37	25
Representative (daytime, 07:00-19:00)	55	53	51	47	46	40	32	22
18:50	58	58	54	51	50	48	40	28
19:05	58	57	53	50	49	46	38	28
19:20	58	57	53	50	49	45	37	26
19:35	59	58	54	50	49	46	38	27
19:50	59	59	54	50	48	45	37	27
20:05	58	58	53	49	48	46	39	29
20:20	59	57	53	49	48	44	38	28
20:35	65	60	53	49	48	46	41	32
Representative (evening, 19:00-23:00)	54	52	48	44	43	39	33	23

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