

Homebrew Tap Ltd

743 WILMSLOW ROAD

Acoustic Assessment



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1. Introduction

1.1. Purpose of Report

Peninsular Acoustics Limited has been commissioned by Homebrew Tap Ltd [the Client], to provide an Acoustic Assessment to support planning application ref: 145195/FO/2026, which relates to the change of use of an existing commercial unit at 743 Wilmslow Road [the Site], into a drinking establishment.

This report presents the findings of a noise impact assessment on nearby residential receptors from the proposed change of use.

This report is necessarily technical in nature and to assist the reader, an acoustic glossary is provided in Appendix A.

1.2. Scope of Works

The following scope of works has been undertaken:

- Consideration of appropriate standards and guidance to form a methodology for the assessment;
- An attended environmental sound survey has been undertaken to determine background sound levels representative of nearby residential receptors;
- External noise breakout from the Site has been assessed, considering the existing glazing, with mitigation measures identified where necessary;
- Limiting noise levels for any new external plant associated with the development have been determined based on representative background sound levels; and
- Sound insulation testing between ground floor commercial unit and first-floor residential dwelling has been carried out and an assessment of potential noise impact to the connected residential accommodation via the separating floor.

2. Site Description

2.1. Existing Site and Environs

The Site occupies a ground floor commercial unit within a mixed-use terrace fronting Wilmslow Road, with residential accommodation located directly above at first-floor level. There is a mixture of uses in the surrounding area, including restaurants, bars, retail premises and residential accommodation, positioned along a busy main road.

Adjoining the Site to one side is a footwear retail premises named Running Bear, with the commercial unit on the opposite side currently vacant.

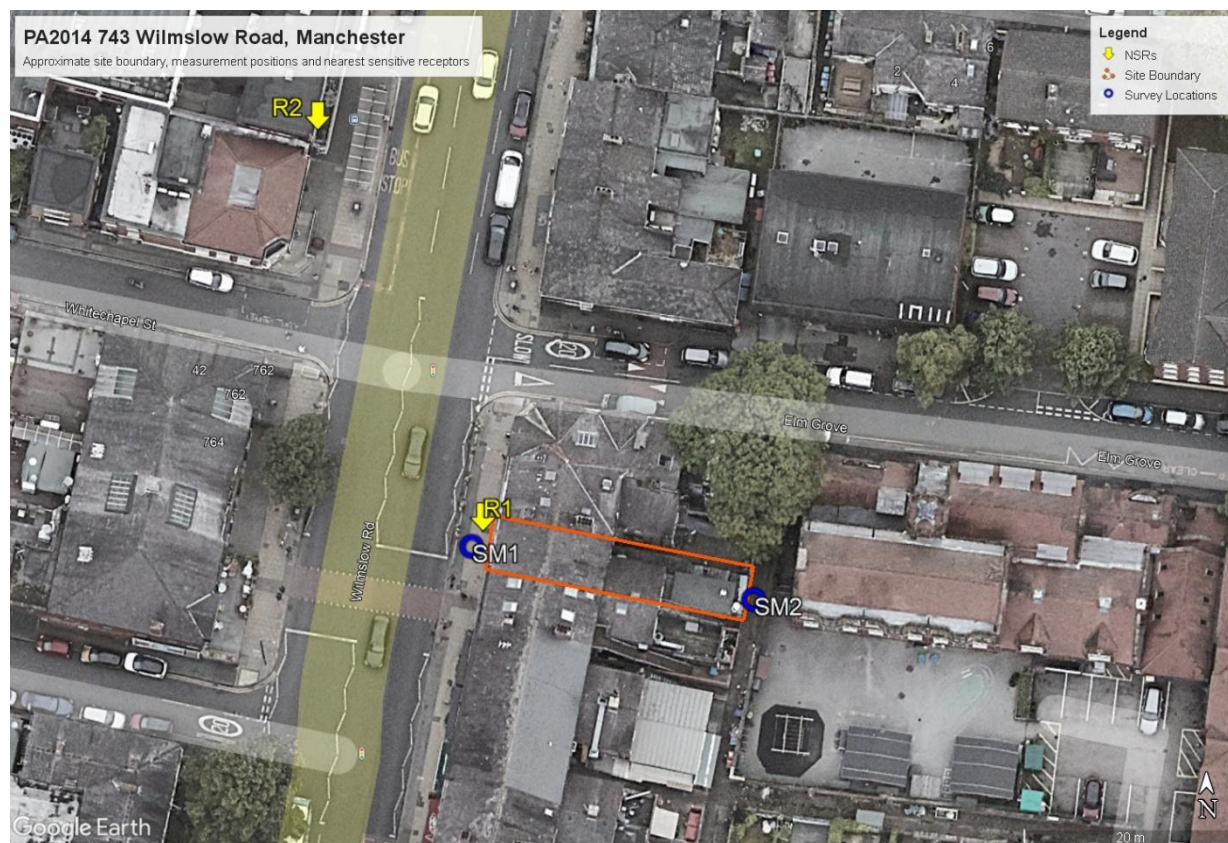
On the opposite side of Wilmslow Road, notably is Expo Lounge, which includes an external seating area and typically operates until approximately 22:00–23:00 daily, and The Famous Crown, which also includes outdoor seating and generally operates until approximately 23:00–00:00 daily.

The nearest noise sensitive receptors (NSRs) have been identified as:

- **NSR 1:** Residential accommodation directly above the Site, circa 1.5m;
- **NSR 2:** First-floor residential properties opposite the Site fronting Wilmslow Road (above the Coop), circa 40m.

The approximate redline boundary of the site, along with the locations of NSRs and measurement positions adopted for the survey, are shown in Figure 2.1.

Figure 2.1: Site plan

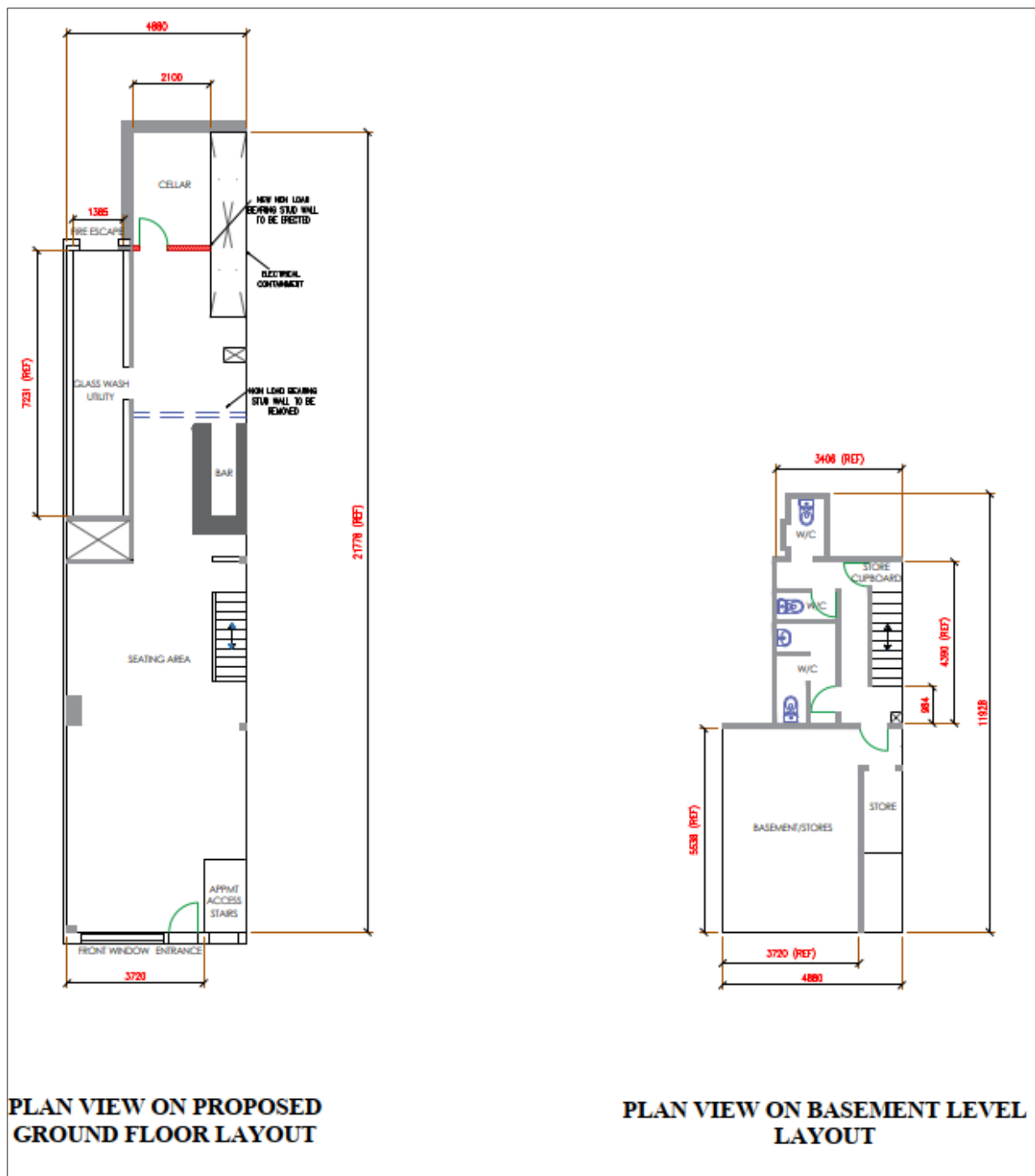


2.2. Development Proposals

The proposals comprise the change of use of the existing ground floor commercial unit into a craft beer / bar venue. It is understood the premises will operate daily between 13:00 and 23:00, primarily as a seated drinking establishment with low-level background music only.

No kitchen extraction equipment /cooking operations or outdoor seating area are proposed as part of the development.

Figure 2.2: Proposed plans



3. Planning Policy, Guidance and Criteria

3.1. Relevant Policy and Guidance Documents

Relevant national planning policy and guidance documents comprise:

- National Planning Policy Framework (2023);
- Noise Policy Statement for England (2010);
- BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings';
- WHO Guidelines for Community Noise (1999).
- Institute of Acoustics 'Good Practice Guide on the Control of Noise from Pubs and Clubs' (2003); and
- Manchester City Council 'Planning and Noise – Technical Guidance' (2022)

A summary of each of the above documents is provided in Appendix B.

3.2. Assessment Criteria

The following criteria have been adopted for this assessment:

3.2.1. Internal Noise Transfer

To ensure acceptable internal acoustic conditions within any habitable room structurally connected to the proposed Site, the following criteria is applied:

- NR15 to be achieved;
- In the 63 Hz and 125 Hz octave bands, internal noise levels should not exceed:
 - 47 dB $L_{eq,5min}$ at 63 Hz
 - 41 dB $L_{eq,5min}$ at 125 Hz

3.2.2. External Noise Breakout

It is expected the following will be demonstrated 1m from any external NSRs:

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

3.2.3. External Plant Noise

Any new external plant associated with the development should be designed to achieve a Rating Level no greater than the typical background sound level at the nearest noise sensitive receptor, in accordance with the BS 4142¹ assessment methodology.

¹ BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound

4. Sound Surveys

4.1. Methodology and Equipment

An attended environmental sound survey was undertaken on 20th April 2026 to establish representative background sound levels at nearby noise sensitive receptors (NSRs). Sample measurements were undertaken at various times between 15:45 and 22:30, with each measurement taken over a 5-minute duration.

Measurements were undertaken at approximately 1.5m above ground level in the following position:

- **Sample Measurement Position 1 (SM1):** Front façade position located approximately 3.5m from Site façade, representative of NSR 1 directly above Site; and
- **SM2:** Rear position, centre of the alleyway directly behind the Site.

Measurements were taken using Class 1 integrating/averaging SLMs housed, where appropriate, in environmental protection apparatus. The SLMs were field calibrated before and after the survey, using a Class 1 calibrator, with no significant drift in calibration noted.

The SLMs were set up to record A-weighted ambient, maximum and background sound levels as a minimum along with associated octave band spectra.

4.2. Survey Conditions and Observations

4.2.1. Meteorological Conditions

Weather conditions during the attended survey were dry with low wind speeds throughout. The prevailing conditions were therefore considered suitable for environmental noise measurements, and all measured data is considered acceptable to inform the assessment.

4.2.2. Site Observations

The dominant source of noise at all NSRs was road traffic along Wilmslow Road, together with frequent pedestrian activity associated with nearby pubs and restaurants. Audible pedestrian crossing signals directly outside the Site were also noted throughout the survey period.

The noise environment at the rear was dominated by plant noise from nearby restaurants, notably Olio.

4.2.3. Results

The lowest measured background sound levels were recorded during the late evening period when traffic flows and pedestrian activity had reduced. The lowest measured background sound levels are presented below with a full list of measured sound level results contained in Appendix C.

Table 4.1: Lowest measured background sound level – SM1

Measurement Date /Time	L ₉₀ (dB) at Octave band Centre Frequency (Hz)							L _{A90} (dB)
	63	125	250	500	1k	2k	4k	
20/04/2026								
22:28-22:33	50	49	47	44	42	40	29	47

Table 4.2: Lowest measured background sound level – SM2

Measurement Date /Time	L ₉₀ (dB) at Octave band Centre Frequency (Hz)							L _{A90} (dB)
	63	125	250	500	1k	2k	4k	
20/04/2026 22:34-22:39	63	54	51	49	49	45	36	46

5. External Noise Breakout Assessment

5.1. Source Level

Low-level background music is proposed within the venue, therefore for the purpose of estimating potential noise breakout, a source level representative of a busy restaurant environment has been adopted. This source data is taken from *The Little Red Book of Acoustics* and is intended to provide a robust basis for assessment.

Table 5.1: Octave band source level data for assessment

Source	Sound Pressure Level (dB) at Octave band Centre Frequency (Hz)							L _{Aeq,T} (dB)
	63	125	250	500	1k	2k	4k	
Busy Restaurant	60	70	75	75	75	75	70	80

5.2. Building Envelope

For the purposes of this assessment, noise breakout through the large, glazed front has been considered the dominant transmission path. The existing glazing was measured on site to be approximately 8mm single glazing. The rear external walls of the premises serve staff-only areas and are therefore not considered a significant source of breakout noise.

Sound Reduction Indices (SRI) for the existing 8mm glazing have been predicted using INSUL and adopted within the calculations, as presented below:

Table 5.2: Sound insulation performance of glazed front

Element	Sound Reduction Indices (dB) at Octave band Centre Frequency (Hz)							R _w + C _{tr} (dB)
	63	125	250	500	1k	2k	4k	
8mm Glazing	21	23	27	31	34	31	39	31

5.3. Noise Breakout Assessment

Breakout calculations to each identified NSR are shown below based on the proposed internal noise levels and the existing building construction:

Figure 5.1: Noise breakout calculation to NSR1

			63	125	250	500	1000	2000	4000	8000	dB(A)
Sound pressure level inside, $L_{p,in}$			60	70	75	75	75	75	70		80
Via Glazed Façade											
			63	125	250	500	1000	2000	4000	8000	dB(A)
Diffusivity term for the inside sound field, C_d	-6	dB	-6	-6	-6	-6	-6	-6	-6		
Sound reduction of the segment, R'		dB	21	23	27	31	34	31	39		
Width of segment	3.6 m										
Height of segment	3.2 m										
Area of the segment	11.5 m ²		11	11	11	11	11	11	11		
Sound power level of the substitute point source, L_w			44	52	53	49	46	49	36		
Directivity correction in the direction of the receptor, D_c	0		-4	-11	-11	-11	-11	-11	-11		
Distance to receptor	1.5 m										
Acoustic screening		dB									
Total attenuation from building element to receptor			11	11	11	11	11	11	11		
Sound pressure level at receptor, L_p			29	30	31	27	24	27	14		31

Figure 5.2: Noise breakout calculation to NSR2

			63	125	250	500	1000	2000	4000	8000	dB(A)
Sound pressure level inside, $L_{p,in}$			60	70	75	75	75	75	70		80
Via Glazed Façade											
			63	125	250	500	1000	2000	4000	8000	dB(A)
Diffusivity term for the inside sound field, C_d	-6	dB	-6	-6	-6	-6	-6	-6	-6		
Sound reduction of the segment, R'		dB	21	23	27	31	34	31	39		
Width of segment	3.6 m										
Height of segment	3.2 m										
Area of the segment	11.5 m ²		11	11	11	11	11	11	11		
Sound power level of the substitute point source, L_w			44	52	53	49	46	49	36		
Directivity correction in the direction of the receptor, D_c	0										
Distance to receptor	40 m										
Acoustic screening		dB									
Total attenuation from building element to receptor			37	37	37	37	37	37	37		
Sound pressure level at receptor, L_p			7	15	16	12	9	12	-1		16

5.3.1. Evaluation of Noise Impact

The predicted external noise breakout levels have been assessed against the criteria stated in Section 3.2.2 and are shown below for NSR 1 and NSR 2 respectively.

Table 5.3: Evaluation of noise impact – NSR 1

Assessment Parameter	L_{90} (dB) at Octave band Centre Frequency (Hz)							L_{A90} (dB)
	63	125	250	500	1k	2k	4k	
Measured Background Sound Level [A]	50	49	47	44	42	40	29	47
MCC Criterion (5dB below background) [A – 5 = B]	45	44	42	39	37	35	24	42
Predicted Level at NSR 1 [C]	29	30	31	27	24	27	14	31
Level of Excess [C – B]	-16	-14	-11	-12	-13	-8	-10	-11

Table 5.4: Evaluation of noise impact – NSR 2

Assessment Parameter	L ₉₀ (dB) at Octave band Centre Frequency (Hz)							L _{A90} (dB)
	63	125	250	500	1k	2k	4k	
Measured Background Sound Level [A]	50	49	47	44	42	40	29	47
MCC Criterion (5dB below background) [A – 5 = B]	45	44	42	39	37	35	24	42
Predicted Level at NSR 2 [C]	7	15	16	12	9	12	-1	16
Level of Excess [C – B]	-38	-29	-26	-27	-28	-23	-25	-26

The calculations demonstrate that predicted noise breakout levels associated with the Site remain comfortably below the adopted Manchester City Council criterion at both assessed receptors across all octave bands.

It is acknowledged that short-duration noise associated with customer arrival, departure and door opening may occur during operation. However, given the existing mixed-use character of the surrounding area and the presence of nearby hospitality venues operating during similar hours, such activity is not considered likely to result in a significant adverse impact subject to appropriate management of patrons.

On this basis, the proposed development is not anticipated to result in a significant adverse noise impact on nearby residential amenity and no additional mitigation measures are considered necessary in relation to external noise breakout subject to proper noise management and control of internal noise levels.

5.4. Ventilation

It should be noted that the above assessment has been undertaken on the basis that external doors and windows remain closed during operation, except for normal access and egress. Suitable background ventilation should therefore be provided by alternative means to allow the premises to operate with windows closed where necessary.

6. External Plant Noise Limits

Any external plant required should be designed and operated to ensure that no adverse noise impact is caused on sensitive receptors following the BS 4142:2014 assessment method.

Plant noise limits have been derived based on measurements at SM2, which is considered representative of the nearest likely receptor to any future rear-mounted plant equipment.

Based on the background sound levels measured at SM2, cumulative plant noise associated with the development should achieve a Rating Level no greater than the representative background sound level of 46 dB L_{A90} , at the nearest noise sensitive receptor.

If any plant items are proposed, it is recommended that allowance is made for the following mitigation options:

- In-duct silencers;
- Acoustic screens for rooftop items (e.g., chillers and condensers); and
- anti-vibration mounts to be fitted to rooftop plant items, where there are sensitive spaces located beneath.

It should be noted that it would be the responsibility of the contractor to ensure that the Rating Levels do not exceed noise limits.

7. Internal Noise Transfer Assessment

7.1. Separating Floor

A sound insulation test was carried out on 17th April 2026 to evaluate the acoustic performance of the separating floors between the ground floor commercial unit and the first-floor residential accommodation. The measured D_{nT} values from the tests have been used to predict the internal noise levels within the residential unit, based on the source level assumptions outlined in Section 5.1.

The predicted internal levels are then assessed against relevant criteria, as follows:

- Below NR15; and
- 63Hz and 125Hz below 47 dB and 41 dB $L_{eq,5min}$, respectively.

The sound insulation test graphs are included in Appendix D.

7.1.1. Separating Floor Existing Construction

The existing separating floor is of timber construction with the exact details currently unknown. Ceiling heights vary across the bar area with a slightly lower ceiling at the rear separating it from the rear bedroom.

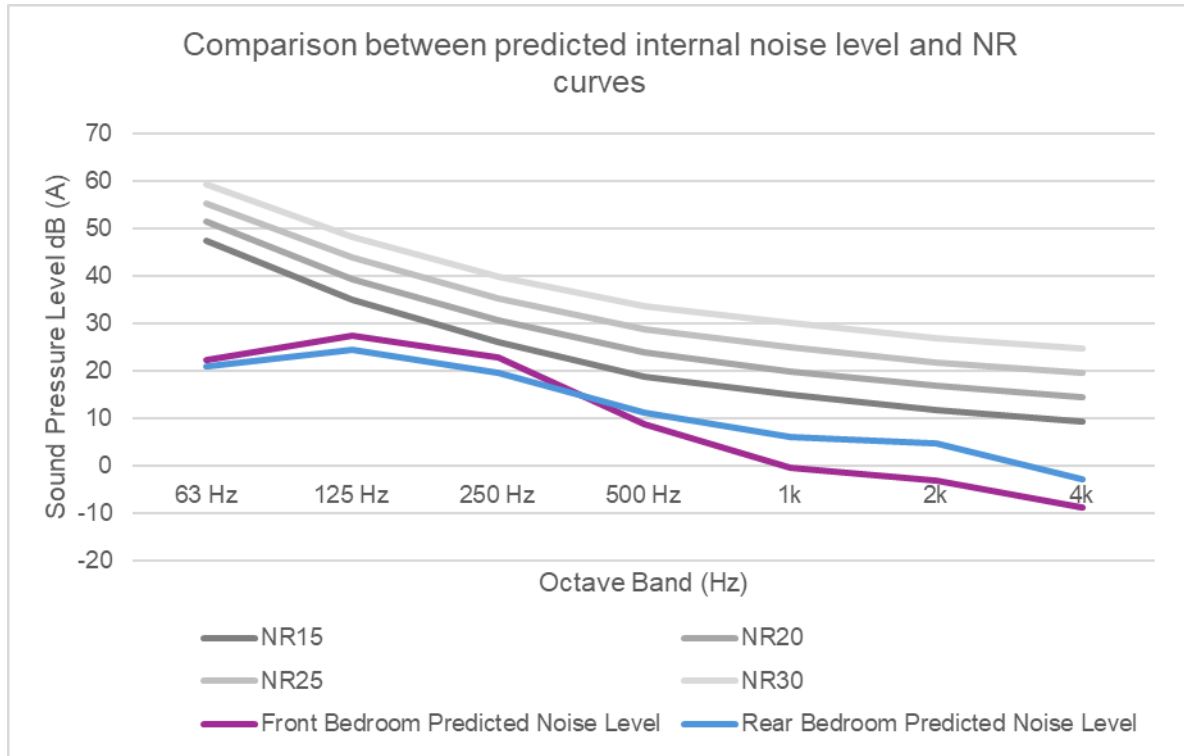
7.1.2. Results

The following graph presents the predicted internal noise levels within the first-floor residential accommodation, based on the measured sound insulation performance of the separating floor:

- **Internal Level A** – Front bedroom overlooking Wilmslow Road; and
- **Internal Level B** – Rear bedroom

Predicted internal noise levels have been assessed against NR curves to evaluate compliance with the relevant acoustic criteria, including specific reference to 63Hz and 125Hz. The results demonstrate that the existing performance of the separating floor comfortably meets the proposed standards, with internal levels in both bedrooms predicted to achieve lower than NR15. No further mitigation is therefore considered necessary.

Figure 7.1: Commercial unit to first-floor residential dwelling – NR Analysis



8. Conclusions

Peninsular Acoustics Limited was commissioned by Homebrew Tap Ltd to undertake an acoustic assessment in support of a planning application for the proposed change of use of an existing commercial building into a drinking establishment /bar.

An attended environmental sound survey was undertaken to establish representative background sound levels at nearby residential receptors.

Noise breakout calculations have been undertaken, and the assessment demonstrates that predicted breakout levels remain comfortably below the adopted Manchester City Council criterion of 5 dB below background sound levels at both assessed receptors across all octave bands.

Sound insulation testing was additionally undertaken between the ground floor commercial unit and the first-floor residential accommodation to assess potential noise impact through the separating floor. The test performance indicates that the existing separating floor construction provides sufficient acoustic separation for the proposed use without the need for additional mitigation measures.

Limiting noise levels have also been determined for any new external plant associated with the development to ensure that no adverse impact occurs at nearby residential receptors.

Overall, subject to appropriate operational management of the premises, the proposed development is considered acceptable in acoustic terms and suitable for the proposed use.

Limitations applicable to this report are contained within Appendix E



Appendix A

TECHNICAL TERMINOLOGY

Noise	Typically defined as unwanted, unpleasant or disturbing sound
Frequency (Hz)	The number of oscillations in acoustic pressure per second. It represents the 'tone' of the sound. Often determined in octave bands
Maximum sound pressure level (L_{Fmax})	The maximum or highest sound pressure level measured with a 'fast' time weighting
Equivalent continuous sound pressure level ($L_{eq,T}$)	The average of the total sound energy over a specified time period (T). L_{eq} represents the equivalent sound level that a fluctuating source would have compared to a steady source with the same total sound energy over a specific time period. Commonly used as a descriptor of human perception of sound over time.
'A' weighting	Frequency-dependent weighting based on the response of the human auditory system which has been found to correlate well with the subjective response to sound. Denoted by the use of the letter 'A'. For example, dBA denotes an 'A' weighted sound level in decibels, or L_{Amax} denotes an 'A' weighted maximum sound pressure level.
Internal Ambient Noise Level (IANL)	The noise level within a room or enclosed space. Usually determined as an equivalent continuous sound pressure level over a specific time period ($L_{Aeq,T}$, dB)
Noise Rating (NR) curve	A single figure term used to reflect the spectral frequency content of noise. Although originally proposed to assess environmental noise, NR curves are now typically used to describe noise from mechanical ventilation systems in buildings.
$L_{night,outside}$	The incident external A-weighted long-term average sound level as defined in ISO 1996-2: 1987, determined over all the night periods of a year, in which the night is eight hours between 23:00 and 07:00.
AVO	Acoustics, Ventilation, Overheating (e.g. AVO Guide, AVO Group).
Overheating Strategy Overheating Condition	The situation where measures are in place to mitigate overheating to meet agreed compliance criteria.
Dynamic thermal modelling	A technique that can be used to simulate internal temperatures in dwellings before they are built
Ventilative cooling	Cooling by means of introducing external ambient temperature air at a high ventilation rate. Can be either passive (no fans) or mechanical (with fans).
Purge ventilation	Ventilation to aid removal of high concentrations of pollutants and water vapour released from occasional activities such as painting and decorating or accidental releases such as smoke from burnt food or spillage of water.
Mechanical cooling	Cooling by means of a refrigerant cycle. This would include 'air conditioning' systems and the use of fan coil units (FCUs).

MEV	Mechanical extract ventilation.
“Free area” as used in AD-O	Approved Document O uses the term “Minimum free area” that is required to be achieved by the Equivalent area of the window openings. AD-O provides the accepted definition of Equivalent area for the description of “free area”. The term “free area” is therefore avoided in this document to avoid further confusion.
Acoustic open area	The measurable, cross-sectional, geometric area of an opening. For a partially open window, this is considered to be the lesser of either the size of the hole in the window frame that is left by the opening light, or the combined cross-sectional area around the opening light through which air must pass to move from outside to inside. The area around a hinged opening light includes the triangular areas on the sides adjacent to the hinge, and the rectangular area on the side opposite the hinge. This should not be used for comparing the air-flow performance of elements because this will also be dependent on factors such as depth (length of air-path), surface roughness and tortuosity. Refer to reference 6 for further information.
Effective area, A_{eff}	Defined as the product of the free area and discharge coefficient, this is the preferred parameter for comparing the air-flow performance of elements. Refer to reference 6 for further information.
Equivalent area, A_{eq}	<p>The area of a sharp-edged, circular orifice that gives the same flow rate as the actual opening at a given pressure-difference. In other words, the free-area of a notional circular hole made in an infinitely thin, infinite extent baffle that gives the same air-flow performance as the real opening.</p> <p>Used to describe the area of trickle vents in Approved Document F. Not to be confused with Effective area. Refer to reference 6 for further information.</p>
Coefficient of Discharge, C_d	The ratio of the mass flow rate at the discharge end of the nozzle to that of an ideal nozzle which expands an identical working fluid from the same initial conditions to the same exit pressures.
$D_{n,e} / D_{n,e,w}$	The laboratory tested sound insulation of small building elements, normalised to an equivalent absorption area of 10m ² .
Façade level	The sound pressure level measured close to a building façade that includes contribution from both the incident sound and the sound reflected from the façade. Normally taken to be 3dB higher than the equivalent free-field level, when located at 1 metre from a façade.
Free-field level	A measured sound pressure level that is independent of any contributions due to reflections from nearby surfaces and is therefore representative of the direct path only.
R / R_w	The laboratory tested airborne sound insulation of a building element
Sound insulation	The capacity of a structure to prevent sound from reaching a receiving location. Sound energy is not necessarily absorbed; impedance mismatch, or reflection back toward the source, is often the principal mechanism

Appendix B

REVELVANT NATIONAL POLICY AND GUIDANCE

. National Planning Policy Framework

The 'National Planning Policy Framework' (NPPF) was published by central government in 2012 and replaces previous Planning Policy Guidance Notes. It does not replace the Noise Policy Statement (England) 2010 to which it refers. The Planning Practice Guidance (PPG) online resource for the NPPF was launched in March 2014 to assist practitioners with the content of the NPPF.

The NPPF includes a *"presumption in favour of sustainable development that is the basis for every plan, and every decision"*. This is a very clear direction which may conflict with the application of existing local policies in development control decisions and will influence the eventual replacement of those policies.

To clarify this point, the PPG says "Where the development plan is absent, silent or the relevant policies are out of date [the NPPF] requires the application to be determined in accordance with the presumption in favour of sustainable development unless otherwise specified".

Also, "The NPPF represents up-to-date Government policy and must be taken into account where it is relevant to a planning application or appeal. If decision takers choose not to follow the NPPF, clear and convincing reasons for doing so are needed".

LPAs are therefore obliged to follow the NPPF unless they have up-to-date local policies that would justify a departure and, even then, the NPPF has 'material consideration' status. Where local policies conflict with one another, considerations shall be *'guided by the NPPF'*. Where local noise policies are dated, absent or in conflict it appears that national noise policy must take precedence.

The NPPF contains four aims as follows:

- Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development
- Mitigate and reduce to a minimum other adverse impacts on health and quality of life as a result of new development, including through the use of conditions
- Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established
- Identify and protect areas of tranquillity

The reference numbers 27 and 28 point respectively to the Explanatory Note to the Noise Policy Statement for England (NPSE) (see below) and the provisions of the Environmental Protection Act 1990 and other relevant law.

Noise Policy Statement for England

The 'Noise Policy Statement for England' (NPSE) was published in March 2010. The NPSE is the overarching statement of noise policy for England and applies to all forms of noise other than occupational noise, setting out the long-term vision of Government noise policy which is to:

"Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development."

That vision is supported by the following aims which are reflected in three of the four aims for planning policies and decisions in paragraph 123 of the NPPF:

"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."

The NPSE introduces the concepts of NOAEL, LOAEL and SOAEL in relation to the potential health implications of a noise/vibration effect, defined as follows:

- **NOEL – No Observed Effect Level**
This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.
- **LOAEL – Lowest Observed Adverse Effect Level**
This is the level above which adverse effects on health and quality of life can be detected.
- **SOAEL – Significant Observed Adverse Effect Level**
This is the level above which significant adverse effects on health and quality of life occur."

It is acknowledged, however, that it is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise, in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that *"further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise."*

BS8233:2014 / WHO Guidelines for COMMUNITY NOISE

BS 8233 states that in order to provide a comfortable environment within habitable rooms, specifically bedrooms, the external building fabric be generally designed to achieve the internal night-time noise level of 30 dB(A) and daytime level of 35 dB(A).

The figures given above would be considered the LOAEL, and levels below the figures above would be considered the NOEL. Levels significantly greater than the figures given above would be considered the SOAEL and should be avoided.

BS 8233:2014 also recommends that individual noise events at night can be disturbing to sleep patterns, and that a guideline level should be set in terms of SEL or $L_{AF,max}$.

BS 8233 does not give a definitive level for internal maximum noise levels, or define an appropriate number of exceedances per night. However, the World Health Organisation's 'Guidelines for Community Noise' (1999) references a study by Vallet & Vernet, 1991, which concluded that "For a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45 dB $L_{AF,max}$ more than 10-15 times per night."

For the purposes of assessment, less than 10 exceedances per night would be considered the NOEL, with 15 exceedances considered the LOAEL. Numbers significantly in excess of this would be considered the SOAEL.

BS 8233 also states that it is desirable that the steady noise level in external amenity areas (such as gardens or outdoor living areas) does not exceed 50 dB $L_{Aeq,T}$, with 55 dB $L_{Aeq,T}$ being acceptable in noisier environments. This is in line with recommendations given in the WHO Guidelines for Community Noise.

However, in the period since the original issue of the WHO guidelines, the Government has set all English Local Planning Authorities specific five-year housing supply targets. This has placed greater emphasis on making efficient use of land resource earmarked for residential development. BS 8233:2014 recognises this, and states that it should be accepted that these values are not achievable in all circumstances where development would be otherwise desirable. The document goes on to suggest that in areas such as city centres, or urban areas adjoining the transport network, a compromise (between elevated external noise levels and ensuring development needs) is warranted.

On this basis, levels lower than 50 dB(A) will be considered the NOEL, levels above 50 dB(A) considered to be the LOAEL and levels above 55 dB(A) would be considered to be the SOAEL, but would be addressed on a case-by-case basis, and would not necessarily be considered a barrier to development.

Institute of Acoustics ‘Good Practice Guide on the Control of Noise from Pubs and Clubs’

In 1996, the Institute of Acoustics established a working group to produce guidance and criteria on the control of noise from pubs and clubs. Unfortunately, the group was unable to produce a formal Code of Practice because industry representatives withdrew and because trials of proposed criteria produced inconclusive results. Further, the IOA decided that the criteria were not robust enough to be published as such and so the only formal output from the working group was the Good Practice Guide (Institute of Acoustics, 2003).

The Guide contains two conditions:

- 1) that for premises where entertainment takes place on a regular basis, noise is inaudible inside noise sensitive premises at all times (It is said that the term ‘regular’ needs to be defined locally and with a regard to local expectations);
- 2) if entertainment takes place on a less frequent basis, the music should be inaudible inside noise sensitive property between the hours of 2300 and 0700. Noise is considered to be inaudible when it is at a sufficiently low level such that is not recognizable as emanating from the source in question and it does not alter the perception of the ambient noise environment that would prevail in the absence of the source in question.

Manchester City Council Guidance

3.7.1.2 Entertainment Venues

Noise from entertainment venues, e.g. noise from recorded music, live bands, or karaoke, can be particularly annoying for local residents and businesses if not adequately contained within the venue.

When considering the potential impact of a proposal for an entertainment venue, consultants should consider the overall noise level (L_{Aeq}) and the 63 Hz and 125 Hz octave band noise levels (L_{eq}). Music noise in the 63 Hz and 125 Hz octave bands, often described as 'bass noise', is particularly difficult to contain and the impulsive and non-steady character of low frequency music noise is particularly disturbing for local residents exposed to it.

Applicants and consultants should note that, although a particular business model may require a 'chilled out' or 'acoustic' venue, planning approval for an entertainment venue will remain in place as long as the development exists. Subsequent owners or tenants may wish to provide louder entertainment in the future. For this reason, applicants and consultants should predict the noise impact of a proposed entertainment venue using noise levels representative of those found in 'typical' venues of the kind being applied for. Consultants should provide their rationale for using particular noise levels and reference the source of the noise levels used during their predictions.

A lively city centre bar can operate around 95dB L_{Aeq} and nightclubs can be even higher at 105dB L_{Aeq} . The range of levels at 63Hz and 125Hz octave bands is wider than the A-weighted levels and can be up to 115dB L_{eq} and 110dB L_{eq} respectively (Davies *et al* 2005).

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.

Existing noise standards/criteria are not appropriate for evaluating low frequency noise; in almost all other situations the established noise descriptors are based on the A-weighted sound level (dBA), which effectively filters out low frequency sounds (Moorhouse *et al* 2011).

When dealing with noise control, especially at the lower frequencies, it is usual to look at the octave band data as a Z-weighting (linear) and not the A-weighting, due in main to the amount you have to 'take off', resulting in meaningless data (-26.2dB at 63Hz), and also with respect to the sound insulation performance of various constructions materials.

Rather than just A-weighted levels being assessed, e.g. internal noise levels as per BS 8233: 2014, a low frequency band analysis should be carried out (McCullough *et al* 2004).

*Noise is considered to be inaudible when it is at a sufficiently low level such that it is not recognisable as emanating from the source in question and it does not alter the perception of the ambient noise environment that would prevail in the absence of the source in question.

The DEFRA report 'Noise from Pubs and Clubs – Phase 1' on page 17 reproduces the Institute of Acoustics (IOA) working group guidance to achieve music noise levels which are 'virtually inaudible' inside a residential property.

In the 'Procedure for the assessment of low frequency noise complaints (NANR45) – Revision 1', Moorhouse *et al* (2011) use limits for low frequency noise levels in 1/3 octave bands between 10Hz and 160Hz.

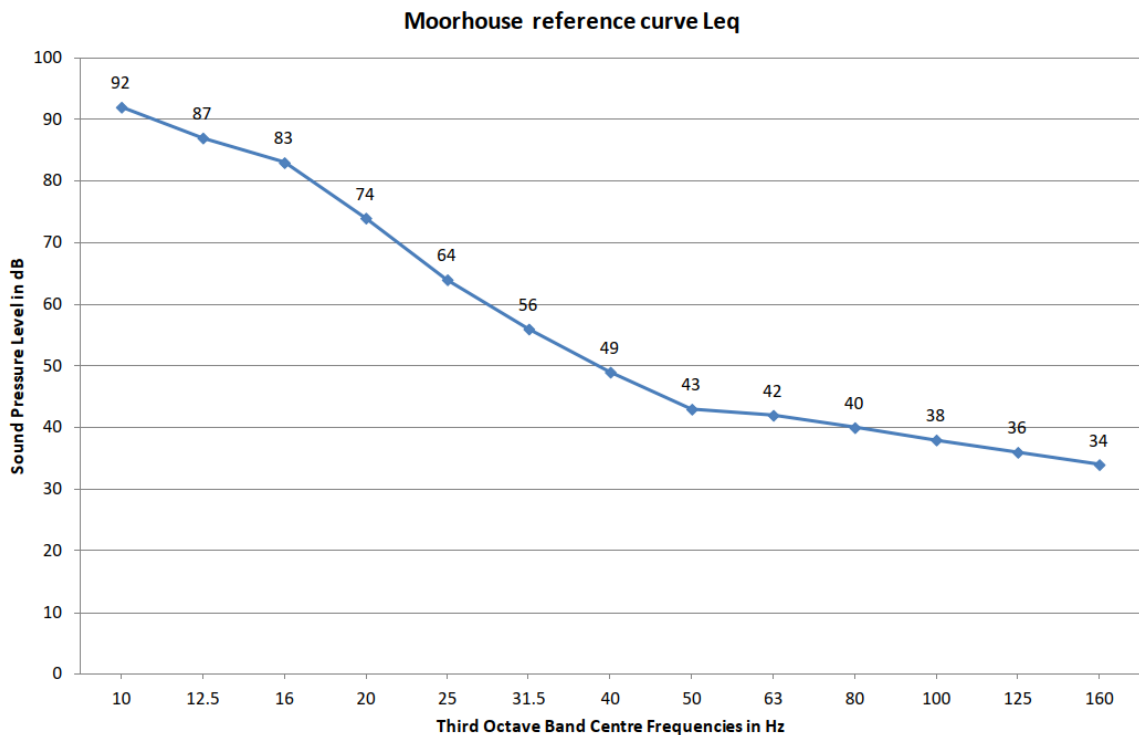


Figure 1

For the assessment of low frequency music noise, it is more practical to consider the 63 Hz and 125 Hz octave bands. The Noise Council's Code of Practice (1995) on 'Environmental Noise Control at Concerts' suggests limits on both these octave bands.

The DEFRA report 'Noise from Pubs and Clubs – Phase 1' suggests limits on 1/3 octave bands. However the problem with this particular suggestion, and one of the reasons it is not widely used, is due to the difficulty in obtaining 1/3 octave band sound insulation performance data for various construction materials.

With regards to assessing music noise, the 63 Hz and 125 Hz octave band levels as shown in Figure 1 have been plotted against the NR 15 curve as shown in Figure 2, and a good correlation at low frequencies is evident (the octave bands were calculated from the 'Moorhouse curve' by logarithmically adding the adjacent 1/3 octave bands).

Appendix C

SURVEY MEASUREMENT DATA

Table 8.1: Measured survey data – SM1

Measurement Date /Time	L ₉₀ (dB) at Octave band Centre Frequency (Hz)							L _{A90} (dB)
	63	125	250	500	1k	2k	4k	
(2026/04/20 15:47:28.00)	56	54	57	56	51	45	34	58
(2026/04/20 16:06:55.00)	56	54	55	55	53	46	34	58
(2026/04/20 16:14:43.00)	59	55	56	54	50	43	34	57
(2026/04/20 18:51:44.00)	56	55	56	55	52	46	35	58
(2026/04/20 19:03:47.00)	56	55	56	55	53	47	35	58
(2026/04/20 19:16:15.00)	56	55	56	54	52	47	38	58
(2026/04/20 21:19:48.00)	52	52	52	50	44	36	24	51
(2026/04/20 21:31:39.00)	50	50	50	47	44	38	26	50
(2026/04/20 22:05:18.00)	53	52	52	50	48	42	31	53
(2026/04/20 22:16:51.00)	51	50	49	46	48	43	33	52
(2026/04/20 22:28:45.00)	50	49	47	44	42	40	29	47

Table 8.2: Measured survey data – SM2

Measurement Date /Time	L ₉₀ (dB) at Octave band Centre Frequency (Hz)							L _{A90} (dB)
	63	125	250	500	1k	2k	4k	
(2026/04/20 15:55:11.00)	66	58	61	56	52	44	33	46
(2026/04/20 16:21:14.00)	67	57	51	50	46	41	34	47
(2026/04/20 18:57:44.00)	64	57	54	50	49	43	36	48
(2026/04/20 19:10:30.00)	65	56	54	50	50	44	36	49
(2026/04/20 19:22:10.00)	66	57	54	51	50	45	38	49
(2026/04/20 21:25:45.00)	62	56	57	53	51	44	36	48
(2026/04/20 21:37:54.00)	63	55	53	49	49	44	38	48
(2026/04/20 22:11:07.00)	64	56	54	50	48	44	35	46
(2026/04/20 22:22:38.00)	59	54	52	47	47	43	37	46
(2026/04/20 22:34:42.00)	63	54	51	49	49	45	36	46

Appendix D

SOUND INSULATION TEST GRAPHS



Standardized level difference according to ISO 140-4
Field measurements of airborne sound insulation between rooms

Client: Homebrew Tap Franchise Limited

Date of test: 17/04/2026

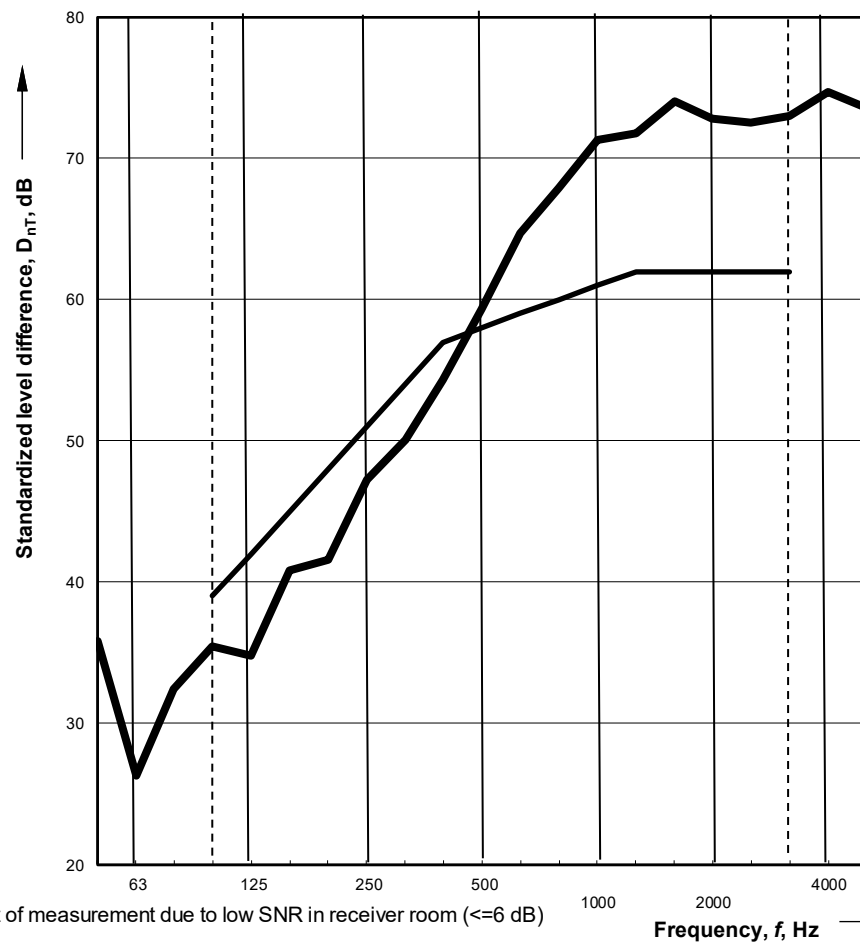
Description and identification of the building construction and test arrangement, direction of measurement:

Tested from ground floor commercial unit into first floor front bedroom. First floor bedroom was furnished. Ground floor unit was part furnished.

Source room volume: 220 m³
Receiving room volume: 70 m³

----- Frequency range according to the
——— curve of reference values (ISO 717-1)

Frequency <i>f</i> Hz	<i>D_{nT}</i> (one-third octave) dB
50	>= 35.8 *
63	26.3
80	32.4
100	35.4
125	34.8
160	40.8
200	41.6
250	47.2
315	50.1
400	54.3
500	59.3
630	64.7
800	67.9
1000	>= 71.3 *
1250	>= 71.8 *
1600	>= 74.0 *
2000	>= 72.8 *
2500	>= 72.5 *
3150	>= 73.0 *
4000	>= 74.7 *
5000	>= 73.6 *



Rating according to ISO 717-1

$$D_{nT,w} (C; C_{tr}) = 58 (\quad ; -8) \text{ dB}; \quad D_{nT,w} + C_{tr} = 50 \text{ dB}$$

Evaluation based on field measurement
results obtained by an engineering method

No. of test report: 001

Name of test institute: Peninsular Acoustics

Date: 05/05/2026

Signature: JP

Standardized level difference according to ISO 140-4
Field measurements of airborne sound insulation between rooms

Client: Homebrew Tap Franchise Limited

Date of test: 17/04/2026

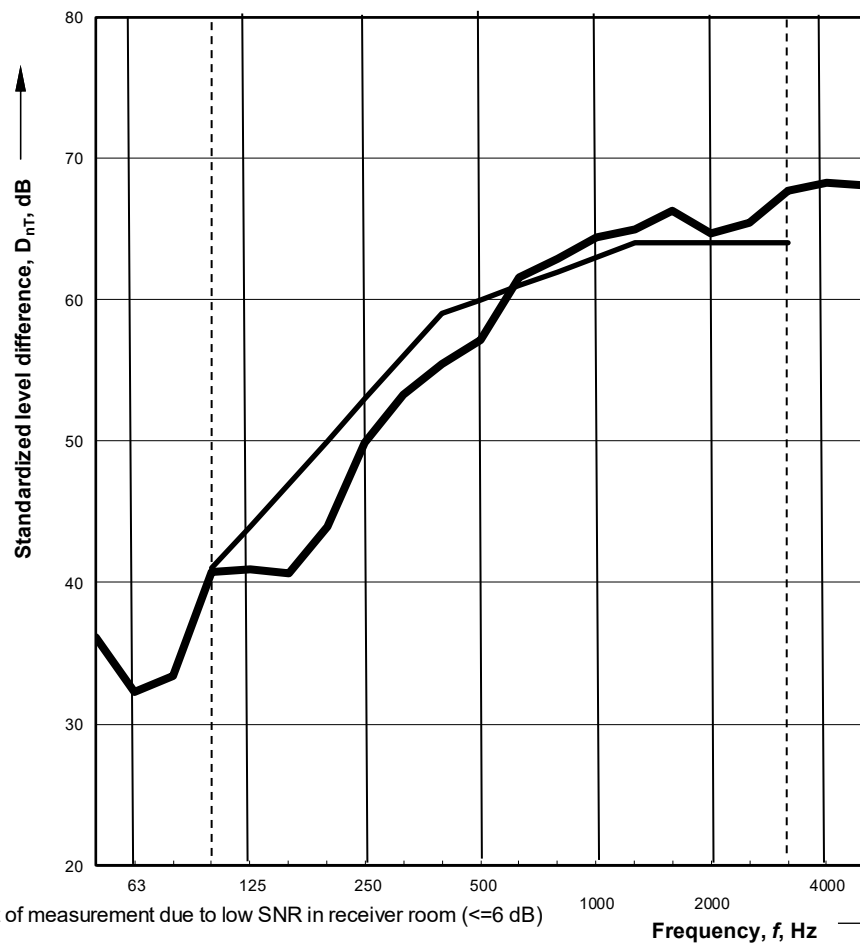
Description and identification of the building construction and test arrangement, direction of measurement:

Tested from ground floor commercial unit into first floor rear bedroom. First floor bedroom was furnished. Ground floor unit was part furnished.

Source room volume: 220 m³
Receiving room volume: 32 m³

----- Frequency range according to the
— curve of reference values (ISO 717-1)

Frequency <i>f</i> Hz	<i>D_{nT}</i> (one-third octave) dB
50	36.1
63	32.3
80	33.4
100	40.8
125	40.9
160	40.7
200	44.0
250	49.9
315	53.3
400	55.5
500	57.2
630	61.6
800	62.9
1000	64.4
1250	65.0
1600	66.3
2000	64.7
2500	>= 65.5 *
3150	>= 67.7 *
4000	>= 68.3 *
5000	>= 68.1 *



* Result should be taken as limit of measurement due to low SNR in receiver room (≤ 6 dB)

Rating according to ISO 717-1

$$D_{nT,w}(C;C_{tr}) = 60 \text{ (; -7) dB; } D_{nT,w} + C_{tr} = 53 \text{ dB}$$

Evaluation based on field measurement
results obtained by an engineering method

No. of test report: 002

Name of test institute: Peninsular Acoustics

Date: 05/05/2026

Signature: JP

Appendix E

REPORT LIMITATIONS

This report has been prepared for the titled project or named part thereof and should not be used in whole or part and relied upon for any other project without the written authorisation of Peninsular Acoustics Limited. Peninsular Acoustics Limited accept no responsibility or liability for the consequences of this document if it is used for a purpose other than that for which it was commissioned. Persons wishing to use or rely upon this report for other purposes must seek written authority to do so from the owner of this report and/ or Peninsular Acoustics Limited and agree to indemnify Peninsular Acoustics Limited for any and all loss or damage resulting therefrom. Peninsular Acoustics Limited accepts no responsibility or liability for this document to any other party other than the person by whom it was commissioned.

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