



PENINSULAR
ACOUSTICS

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371 Oldham Road, Manchester

Plant Noise Assessment



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Report Limitations

1. Introduction

1.1. Introduction

Peninsular Acoustics have been commissioned by Mr Barry Winterbottom (hereafter referred to as 'the Client') to undertake an Acoustic Assessment for a proposal at 371 Oldham Road, Manchester, M40 8RR (hereafter referred to as 'the Site'), for the conversion of a currently disused ground floor unit into a food hall, with potential for use as an events space further to the completion of development proposals.

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

1.2. Site Description

Existing Site

The Site is located due north of Oldham Road (the A62), Manchester, situated at a crossing between Oldham Road and Queens Road (the A6010). The site currently and will continue to operate as the events venue "The Sheridan". It is situated between two residential areas, with the nearest residential receptors circa. 65m to its south off Sawley Road, or circa. 200m to its north off Queens Court.

Directly to its north is the 1st Mix Concrete commercial Site, and further beyond that is a railway line, with the nearest train station serving this line being Manchester Victoria, circa. 2km to the south-west.

An approximate Site boundary is provided in Figure 1.1.

Figure 1.1: Site Boundaries



Development Proposals

The Site is currently undergoing a redevelopment in order for the use of the currently disused ground floor to a recreational food hall, with the potential for use as an events space. As part of this redevelopment, it is proposed to instal 13 external air conditioning units at the northern façade of the Site for the operation of refrigeration units.

Figure 1.2 Locations of Installation on Northern Façade



Additional extract units are also proposed to be installed. These will be fitted with atmospheric silencers, in order to minimise noise impact upon nearby residential amenity. Consequently, this report only considers only noise from the air conditioning units.

Noise Sensitive Receptors

The nearest NSRs are as follows:

- NSR 1: Jigsaw Homes housing unit situated off Sawley Road, circa. 50m south of the Site, across Oldham Road;
- NSR 2: Dwelling group situated off Sawley Road, circa. 60m south of the Site, near to the location of SM1; and
- NSR 3: Dwelling group situated off Queens Court, circa. 200m north of the Site, near to the location of SM2.

Where a receptor comprises multiple dwellings, the most exposed result is presented herein.

1.3. Scope of Works

The following scope of works has been undertaken:

- An environmental sound survey has been undertaken, to determine existing acoustic conditions at the Site.
- Based upon information provided by the Client, an acoustic model has been developed using the calculation algorithms outlined within ISO 9613-2¹ to predict plant noise emissions;
- An assessment in accordance with BS 4142² has been undertaken to determine the predicted sound levels at the nearest Noise Sensitive Receptors (NSRs).

1.4. Standards and Guidance

Whilst the National Planning Policy Framework 2024 (NPPF) and Noise Policy Statement for England (NPSE) provide overarching guidance relevant to this assessment. It is assumed that the reader has good knowledge of these documents, therefore, for conciseness, the relevant information pertinent to this assessment, found in BS 4142 is presented below.

1.4.1. BS 4142

BS 4142 describes methods for rating and assessing industrial and/or commercial sound including sound from deliveries and mechanical services; both of which will form part of the development proposals.

The methods in BS 4142 use outdoor sound levels to assess the likely effects of sound on people who are typically outside their residential premises.

A summary of the approach is outlined below:

- Establish the specific sound level of the source(s);
- Establish a representative daytime (07:00 – 23:00) and a night-time (23:00 – 07:00) background sound level;
- Predict the sound level at the receptor and apply a rating correction to account for distinguishing characteristics such as tonality, intermittency and impulsivity;
- Estimate the impact by subtracting the background sound level from the rating level; and
- Consider the initial estimate of impact in the context of the noise, its environment and other pertinent contextual considerations as part of the application.

The results of the initial impact assessment can be described as follows:

- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- A difference of around +5 dB or more is likely to be an indication of an adverse impact, depending on the context;
- The lower the rating level is relative to the background sound level, the less likely it is that the specific sound will have an adverse impact or significant adverse impact; and
- Where the rating level does not exceed the background sound level, this is an indication that the specific sound will have a low impact.

¹ ISO 9613-2 'Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation.'

² BS 4142:2014 +A1:2019 'Methods for rating and assessing industrial and commercial sound.'

2. Background Sound Level Survey

2.1. Methodology

Due to security conditions at the Site, an unattended survey position was not possible and so attended daytime and night-time surveys at 1.5m above local ground level have been undertaken on the 30th of August, 2025 between 14:30 and 17:00, as well as on the morning of the 31st of August, 2025 between 01:00 and 02:00.

Sound level meters (SLMs) were attended at the following locations:

- Sample Measurement 1 (**SM1**): Situated circa. 70m south from the Site off Sawley Road, to determine existing background sound levels at receptors south from the Site; and
- SM2: Situated circa. 200m north from the Site off Queen's Court, to determine existing background sound levels at receptors north from the Site.

These measurement positions were both taken at the nearest residential receptor either south or north from the Site. The measurement positions are in Figure 1.1.

2.2. Equipment

Sound levels were measured using a Class 1 SLM housed in environmental protection apparatus. The SLM was field calibrated before and after the survey using a Class 1 calibrator, with no significant drift in calibration levels recorded ($> \pm 0.5\text{dB}$). The equipment was setup in free-field conditions to capture L_{Aeq} , L_{AFmax} , and L_{eq} at a minimum.

Full details of the noise measurement equipment used are available upon request but have been calibrated to traceable standards within the 12 – 24 months prior to the survey being undertaken.

2.3. Observations

Weather conditions during the survey were clear, with steady state wind speeds beneath 5m/s, and there was no precipitation for the duration of the survey. Survey data has thus been suitable to inform an assessment.

Conditions at SM1 during the day were dominated by continuous heavy road traffic from Oldham Road, as well as occasionally audible railway movements from the north. Conditions at SM2 during the day were dominated by distant road traffic from Queens Road to the east, and frequent heavy impact from nearby train passes.

During the night-time assessment, no trains were witnessed, and the dominant noise impacting both positions was distant sparse road traffic.

2.4. Results

The results of the attended surveys are included herein. Measurements were taken in 15-minute periods. In order to inform a robust assessment, the lowest measured 15-minute periods have been chosen for assessment criteria.

2.4.1. Background Sound Levels

The background sound levels measured during the survey are summarised in Table 2.1. In order to inform a robust assessment, the lowest measured values dB $L_{A90,15\text{mins}}$ have been selected as assessment criteria.

Table 2.1: Background Sound Levels, $L_{A90,15\text{mins}}$

Position	Daytime $L_{A90, 15 \text{ mins}}$	Night-time $L_{A90, 15 \text{ mins}}$
SM1	50 dB	40 dB
SM2	45 dB	35 dB

3. Acoustic Modelling

3.1. Source Sound Levels

The assessment seeks to focus on external air conditioning plant. From discussions with the Client, it can be assumed that these units may be active on a 24-hour basis, and so both a daytime and a night-time assessment has been made. Noise data has been derived from manufacturer's data, provided by the Client.

The proposed plant items located on the Site's northern façade are shown in Figure 3.1:

Figure 3.1 Plant Summary

Unit Name	Sound Power Level, L_{WA}	Number to be Installed
Toshiba RAV GM801ATP-E	69 dB	13

3.2. Model Assumptions

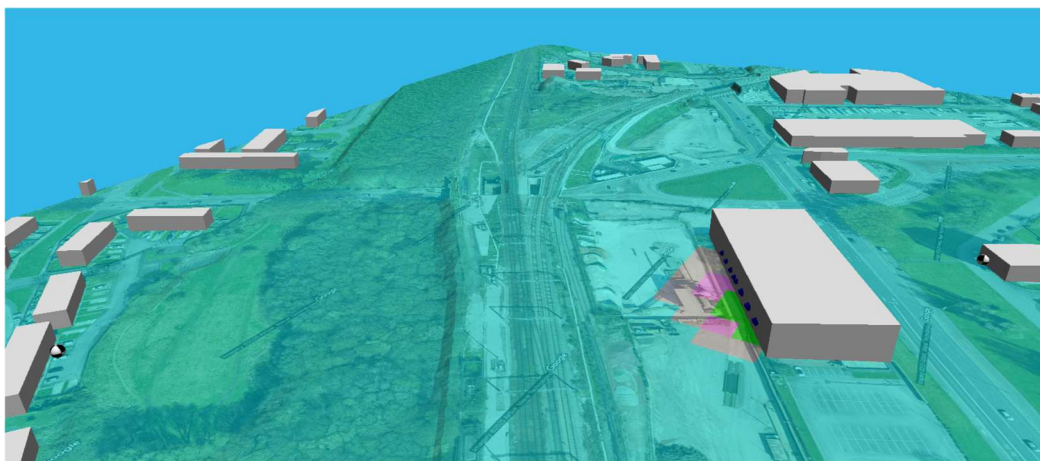
An acoustic model of the Site and environs was generated using Datakustik CadnaA® acoustic modelling software. The model was generated to determine sound levels emanating from the Site.

The modelling assumptions and input information for the acoustic model is as follows:

- Lidar Digital Terrain Model 1m (Environment Agency, downloaded on 19th August 2025);
- Open Street Map data (publicly available);
- Global ground absorption set to 0 (hard ground, chosen as a worst-case scenario in lieu of a detailed understanding of the surrounding landscape);
- Building heights derived from estimations whilst onsite, as well as from architectural drawings provided by Client with respect to buildings at the Site;
- First order reflections included in the modelling;
- Temperature set to 10°C; and
- Relative humidity set to 70%.

An image of the acoustic model is shown in Figure 3.2.

Figure 3.2 Image of Acoustic Model



4. BS 4142 Assessment

4.1. Initial Numerical Impact Assessment

In accordance with BS 4142 an initial numerical impact assessment (INIA) has been undertaken.

BS 4142 describes methods by which character corrections can be applied to sound, based on the audible presence of acoustic characteristics such as impulsivity, intermittency, tonality, or any other character of a given sound that may make it readily apparent against a given acoustic environment.

Octave band specifications of the units to be installed is not available from the manufacturer's datasheet, and so objective methods of rating acoustic characteristics are not possible. As modelled predictions of specific sound levels are low, no character correction has been applied, as it can be assumed that plant will not be audible at the receptors.

Table 4.1 demonstrates a BS 4142 compliant INIA of proposed plant units at the Site.

Table 4.1 Initial Numerical Impact Assessment

Assessment Step	Daytime Assessment			Night-time Assessment		
	NSR 1	NSR 2	NSR 3	NSR 1	NSR 2	NSR 3
Modelled Specific Sound Level dB L _{Aeq, T}	4	6	17	6	8	19
Acoustic Feature Correction dB	+0	+0	+0	+0	+0	+0
Rating Level dB L _{Ar, Tr}	4	6	17	6	8	19
Background Sound Level dB L _{A90, T}	50	50	45	40	40	35
Rating over Background dB	-46	-44	-28	-34	-32	-16
Estimation of Impact	Low	Low	Low	Low	Low	Low

The BS 4142 assessment indicates that sound from the plant will be beneath the background sound level at each receptor, during both the day and night.

4.2. Summary

Impact from the proposed plant is predicted to be significantly below the background sound level at each receptor. This is indicative that noise from the plant units will not be audible at nearby receptors. Consequently, a Low impact is determined in accordance with BS 4142, and no further mitigation or considerations from an acoustic perspective need be given to the external plant.

4.3. Uncertainty

Uncertainty is an unavoidable feature of measurements in the field, which can be subject to many factors; the weather typically being the most significant of which with respect to the measurement of sound. Uncertainty is also unavoidable in the prediction of sound levels, where naturally, before the scenario being considered becomes a reality, a number of assumptions need to be relied upon. There is also the uncertainty of people's reactions, which can be influenced by a number of factors, not just the magnitude or character of the sound in question.

In keeping with the scale of each project, Peninsular Acoustics aims to minimise uncertainty at each stage as far as reasonably practicable. With this in mind, the control measures listed in Appendix C have been followed, which themselves, have been derived from the guidance within BS 4142.

Crucially, measurements have been undertaken by suitably qualified staff, using state of the art, in calibration equipment, over suitable periods and avoiding adverse weather conditions.

The predictions have also been undertaken by suitably qualified staff, and by using a broad spread of source data obtained through archived specific sound level measurements.

Notwithstanding this, naturally some uncertainty remains. Given the sheer number of factors involved, however, it is not feasible to place a numerical value on the level of uncertainty, without resulting in an unhelpful range of possible outcomes.

It is the professional position of Peninsular Acoustics that uncertainty has been kept to a realistic minimum and that the outcome of this assessment is sufficiently representative and robust.

5. Conclusions

Peninsular Acoustics have been commissioned by Mr Barry Winterbottom to undertake an acoustic assessment for the conversion of a disused ground floor unit at 371 Oldham Road, Manchester to a food hall, with the possibility for use as an events space further to the completion of development proposals.

An unattended environmental sound survey has been undertaken to determine prevailing background sound levels at a representative level within the Site.

An acoustic model has been created using manufacturer given sound levels to determine noise impact of proposed plant units at the nearest residential receptors.

The results of the assessment have shown an overall impact of 'Low' in accordance with BS 4142 on nearby residential amenity.

Therefore, it can be concluded that proposals at the Site do not pose a risk of an adverse noise impact on nearby residential amenity.

The limitations of this report are presented in Appendix D.



Appendix A

Technical Terminology

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.
Sound Pressure	Sound, or sound pressure, is a fluctuation in air pressure over the static ambient pressure.
Sound Pressure Level	The sound level is the sound pressure relative to a standard reference pressure of 20µPa (20×10^{-6} Pascals) on a decibel scale.
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s_1 and s_2 is given by $20 \log_{10} (s_1 / s_2)$. The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20µPa.
A-weighting, dB(A)	The unit of sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at some frequencies.
$L_{eq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{AFmax,T}$	A noise level index defined as the maximum noise level during the period T. L_{Max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{90,T}$	A noise level index. The noise level exceeded for 90% of the time over the period T. L_{90} can be considered to be the "average minimum" noise level and is often used to describe the background noise.
$L_{Aeq,Tr}$	Specific noise level. The equivalent continuous A-weighted sound pressure level at the assessment position produced by the specific noise source over a given reference time interval.
$L_{Ar,Tr}$	Rating noise level. The specific noise level plus any adjustments for characteristic features of the noise.
Free-Field	Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5m.

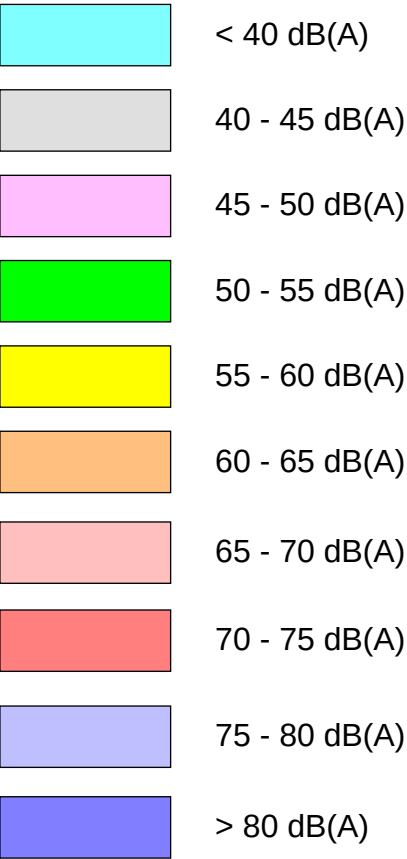


Appendix B

Sound Level Contour Maps



Sound Level Contour Maps



20/08/25	P01	For Planning	GM
DATE	REV	COMMENTS	BY

Project: The Sheridan, Manchester
Ref: Proposed Plant Sound Levels,
Night-time
DWG: PA0916-ACO-001-P01



Notes

1. Do not scale this drawing.

2. Sound levels presented as $L_{Aeq, 15min}$ values. Receiver height set to 4m.

3. As the plant is predicted to run constantly on a 24hr basis, only a night-time drawing is included in this report. Noise exposure will be broadly commensurate during the daytime, or lower.

Appendix C

Uncertainty

Uncertainty Control Measures	Applicable?	Adopted?/Comments
Measurement		
Only use in calibration Type/Class 1 equipment and check (and record) calibration level before and after measurements	✓	Yes
Measurements taken using the time and frequency weighting specified by the relevant standard?	✓	Yes
Detailed notes made, including details of the equipment, weather, survey positions (including approximate distances), contributing noise sources, presence of screening etc.?	✓	Yes
Photographs taken and recorded survey locations using GPS?	✓	Yes
Avoided standing waves/interference – listen for effects, taken spatial average from several locations or conducted a sweep	x	N/A
Taken measurements of source at different distances to establish propagation.	x	N/A used manufacturers data to inform assessment
Taken measurements at different heights where relevant	x	Not relevant
Avoided just measuring in the “noisiest” parts of the site, and established how “quiet” it is, too, where relevant to the assessment.	✓	Yes
Measured under different source operating conditions relevant to the assessment / adopt worst case if known	x	N/A used manufacturers data to inform assessment
Measured more than one cycle/event	x	N/A used manufacturers data to inform assessment
Determined the state of repair of any associated source, where relevant	✓	N/A plant under assessment not yet installed.
Used a windshield and avoided windy conditions (i.e. gusts regularly exceeding 5 m/s)	✓	Yes
Avoided wet conditions (particularly in terms of rain on the windshield/microphone and on neighbouring surfaces)	✓	Yes – rainfall was present but shown to not increase sound levels.
Avoided electrical and electromagnetic interference (such as from power cables and radio transmitters)	✓	Yes
Avoided extreme temperatures?	✓	Yes
Traffic conditions can be different in freezing conditions, whilst meters can overheat and fail in a case when in direct sunlight during the summer.		
Made measurements during different weather conditions?	✓	Not considered necessary for this assessment
Particularly relevant in terms of wind direction for sites affected by aircraft movements, but also for sites affected by other distant, but significant, sources of noise, in different directions		
Where one source is dominant (such as a main road), have measurements been taken during conditions favourable to propagation (i.e. when wind direction is within +/-45° of the line between the source and receiver or during temperature inversion, such as on clear calm nights)	✓	Not considered necessary for this assessment

Uncertainty Control Measures	Applicable?	Adopted?/Comments
Avoided tree/leaf (movement) sound where possible? Ideally take measurements the same distance from sources of such sound as any receptors of interest	✓	Yes – survey position not installed near any plant life.
Avoided dawn chorus sound? Ideally take measurements the same distance from trees and bushes as any receptors of interest	✓	Yes – not near any large trees/bushes.
Measured outside the receptor in question where possible? It is worst case typically to measure under free-field conditions and apply +3 dB correction if necessary to convert to “façade” where applicable – for most planning (new residential development) assessments, free-field is preferable	✓	Yes, no façade correction necessary but measured on the receptor boundary.
Avoided atypical traffic conditions (such as during school holidays and road works – road traffic incidents can significantly affect flows, but which can't be predicted and their occurrence can't always be established after the survey – check the data for anomalies)?	✓	Yes
Avoided the presence of the engineer and/or the microphone resulting in atypical conditions (e.g. people stopping to talk, workers on site adjusting their way of working, etc.)?	✓	Yes
Data handling		
Was the data downloaded immediately after survey and process promptly whilst details are fresh?	✓	Yes
Were digital transfer methods used and was the data written down too?	✓	Yes
Was the time-history examined (in as fine a resolution as possible) for any unexpected events – preferably with active spectral data	✓	No unexpected data events.
If removing any data (due to an atypical event, for example), was the data saved as a new file, with notes to the data provided within the corresponding Excel file?	✓	Yes, raw data separate from processed data
Prediction		
Was measurement data used at different distances to verify propagation?	✓	Not possible to measure source at different distances
Were measurements at different heights used to verify screening effects, where relevant?	✓	Not possible to measure source at different heights
Were propagation calculation procedures relevant to the source and distance used?	✓	Yes, based on ISO 9613-2
Were detailed traffic flow data applicable to the assessment methodology used?	×	N/A
Were detailed sound source data (including octave-bands levels) used, accounting for size, height and directivity, where known?	✓	Spectral data used and area source propagation used.
Were detailed topographical data and base mapping used?	×	No topographical screening accounted for due to flat site
Were different ground types identified	✓	Mixed ground absorption applied.

Uncertainty Control Measures	Applicable?	Adopted?/Comments
Was an order of reflections of at least one applied?	✓	Yes – first order included
Was the 3D view feature of the modelling software used to check the accuracy of the model?	✓	Yes

Appendix D

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.

The findings and opinions expressed are relevant to the dates of the site works and design drawings/specifications and should not be relied upon to represent conditions at substantially later dates. Opinions included therein are based on information gathered during the study and from our experience. If additional information becomes available which may affect our comments, conclusions or recommendations Peninsular Acoustics Limited reserve the right to review the information, reassess any new potential concerns and modify our opinions accordingly.



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