

Mr Haider Jan Jaji

Moston Superstore, Manchester

Acoustic Assessment



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Contents

1. Introduction	6
1.1. Introduction	6
1.2. Site Description	6
1.3. Scope of Works	8
1.4. Standards and Guidance	8
1.4.1. BS 4142	8
2. Background Sound Level Survey	10
2.1. Methodology	10
2.2. Equipment	10
2.3. Observations	10
2.4. Results	11
2.4.1. Daytime Background Sample.	11
2.4.2. Night-time Background Sample.	11
2.4.3. Night-time Background Sample 06:00 to 07:00.	12
2.4.4. Background Sound Levels	12
3. Delivery Noise Assessment	13
3.1. Scope and Assumptions	13
3.1.1. Control of Noise from Deliveries	13
3.2. Source Data	14
3.3. Rating Level Feature Correction	14
3.4. Initial Numerical Impact Assessment	14
3.5. Context of the Mitigated Sound – Nighttime Deliveries 06:00 to 07:00	16
3.5.1. Absolute Level of Sound	16
3.5.2. Character and Level of the Residual Sound	16
3.5.3. Sensitivity of the Receptor and Design Measures that Secure Good Conditions	17
3.6. Delivery Noise Summary	17

3.7. Uncertainty	17
4. Plant Noise Assessment	19
5. Conclusions	20

Appendices

APPENDIX A

TECHNICAL TERMINOLOGY

APPENDIX B

DETAILED MASTERPLAN

APPENDIX C

UNCERTAINTY

APPENDIX D

REPORT LIMITATIONS

1. Introduction

1.1. Introduction

Peninsular Acoustics has been commissioned by Mr Haider Jan Jaji to undertake a noise impact assessment for a proposed superstore and associated customer parking at Ebsworth Street Car Park, Moston, Manchester, M40 9WB (hereafter referred to as 'the Site').

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 currently operates as a public car park and is partially enclosed by fencing along its boundaries where it borders with residential and commercial properties to the north.

An approximate redline boundary of the Site, along with the location of NSRs and measurement position adopted for the survey, are shown in Figure 1.1

Figure 1.1: Site plan



Development Proposals

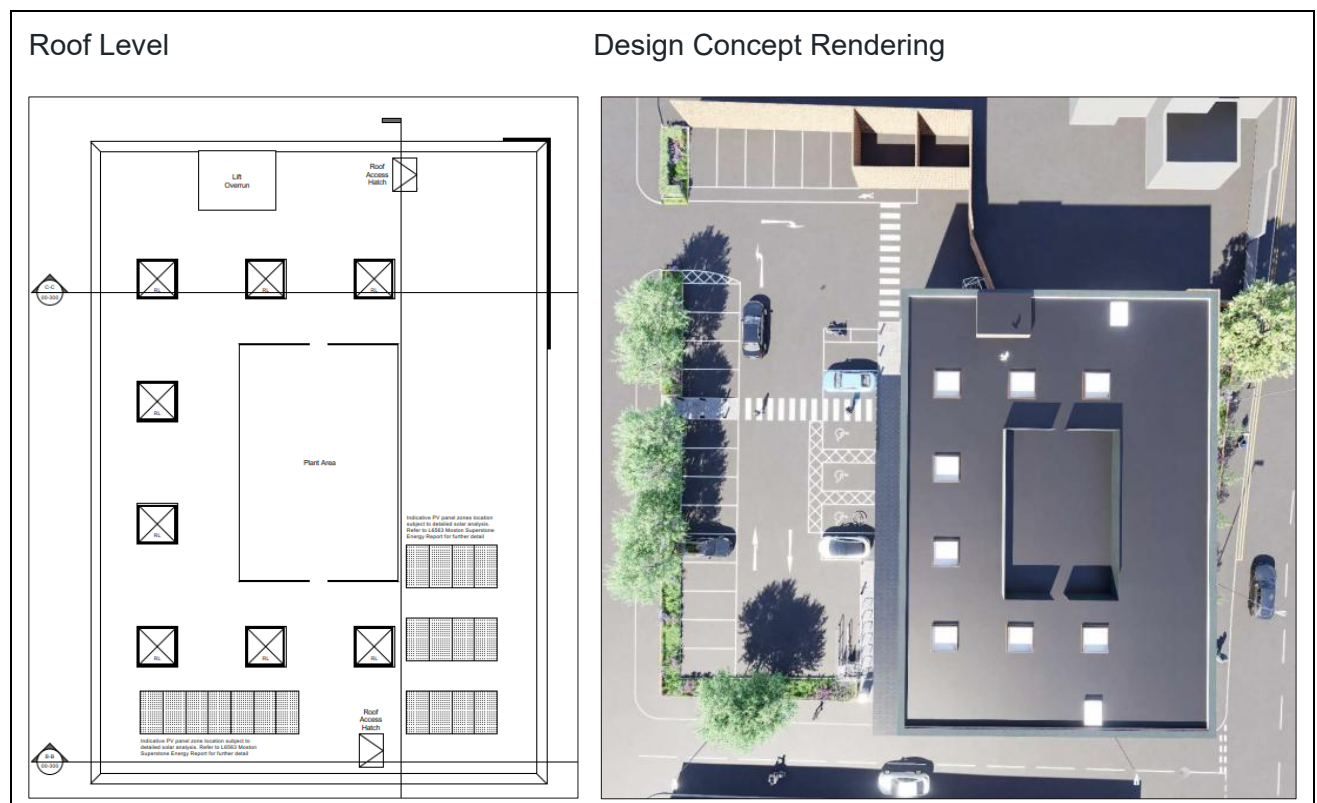
The development proposals comprise the erection of a two-storey (plus basement) retail unit with use Class E. The proposals include on-site parking for up to 26no. cars. The building will feature a flat roof, with integrated louvres to enclose required plant equipment.

Proposed opening times are as follows:

- Monday to Saturday 07:00 – 22:00
- Sunday 11:00 – 17:00

A detailed masterplan is included in Appendix B.

Figure 1.2 Location of rooftop plant area and design concept rendering image



Noise Sensitive Receptors

The nearest sensitive receptors are as follows:

- **Receptor 1, R1:** First floor flat situated off Moston Lane, circa. 40m north of the proposed rooftop plant area;
- **R2:** Dwellings situated on the opposing side of Kenyon Lane, circa. 26m east of the proposed rooftop plant area; and
- **R3:** Dwellings along Ebsworth Street, circa. 46m west of the proposed rooftop plant area, near to the location of SM1.

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;
- An assessment in accordance with BS 4142¹ has been undertaken to determine the predicted sound levels at the nearest Noise Sensitive Receptor (NSR) from delivery noise.
- An assessment in accordance with BS 4142² has been undertaken to determine the Limiting levels for any future industrial /commercial plant to be installed at roof level of the development.
- Assessment of the proposed carpark noise has not been carried out numerically, as the current site is a car park with 68 spaces, which is proposed to be reduced to 26spaces. This implies that the noise from the car park will likely reduce within the new proposal.

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 and includes, but is not limited to, the assessment of:

- Sound from industrial and manufacturing processes;
- Sound from fixed installations which comprise mechanical and electrical equipment;
- Sound from the (un)loading of goods and materials at industrial/commercial premises; and
- Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes such as that from forklift trucks on or around an industrial and/or commercial site.

The methods described in BS 4142 use outdoor sound levels to assess the likely effects of sound on people who are typically outside residential premises. Although indoor effects can be indicated where the façade composition is known. A summary of the approach set out in BS 4142 is set out below:

Establish or predict the specific sound level of the source(s) by considering both the ambient (includes the source to be assessed) and residual (excludes the source to be assessed but includes all remaining sources) sound level;

- Measure the representative background sound levels, typically by measuring close to the receptor location;
- Rate the specific sound level to account for any distinguishing characteristics (see below);
- Estimate the impact by subtracting the background sound level from the rating level; and
- Consider the initial estimate of impact, as determined above, in the context of the noise and its environment.

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

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

The specific sound level is rated to account for distinguishing characteristics by using penalties for tonality, impulsivity, intermittency, and other sound characteristics. The dominant acoustic characteristic should be applied to avoid large penalties which is in accordance with the Institute of Acoustics response to BS 4142.

The character corrections are flexible according to whether the acoustic character is just perceptible at the noise receptor, or is clearly perceptible or highly perceptible, and range from 0 to 6 dB for tonal noise, 3 to 9 dB for impulsive noise, and 3 dB for other non-tonal/impulsive acoustic characteristics.

An initial estimate of impact of the specific sound is obtained by subtracting the background sound level from the rating level. Typically, the greater the difference, the greater the magnitude of impact.

- 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.

2. Background Sound Level Survey

2.1. Methodology

Due to security conditions at the Site, an unattended survey position was not possible and so an attended survey at 1.5m above local ground level was undertaken on Friday 19th of December, 2025 between 03:30am and 10:00am.

Sound levels were monitored at the following location:

- **Sample Measurement 1 (SM1):** Situated along Ebsworth Street west of the Site, to determine existing background sound levels at receptors south from the Site;

This measurement position and the nearest residential receptors are shown 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.

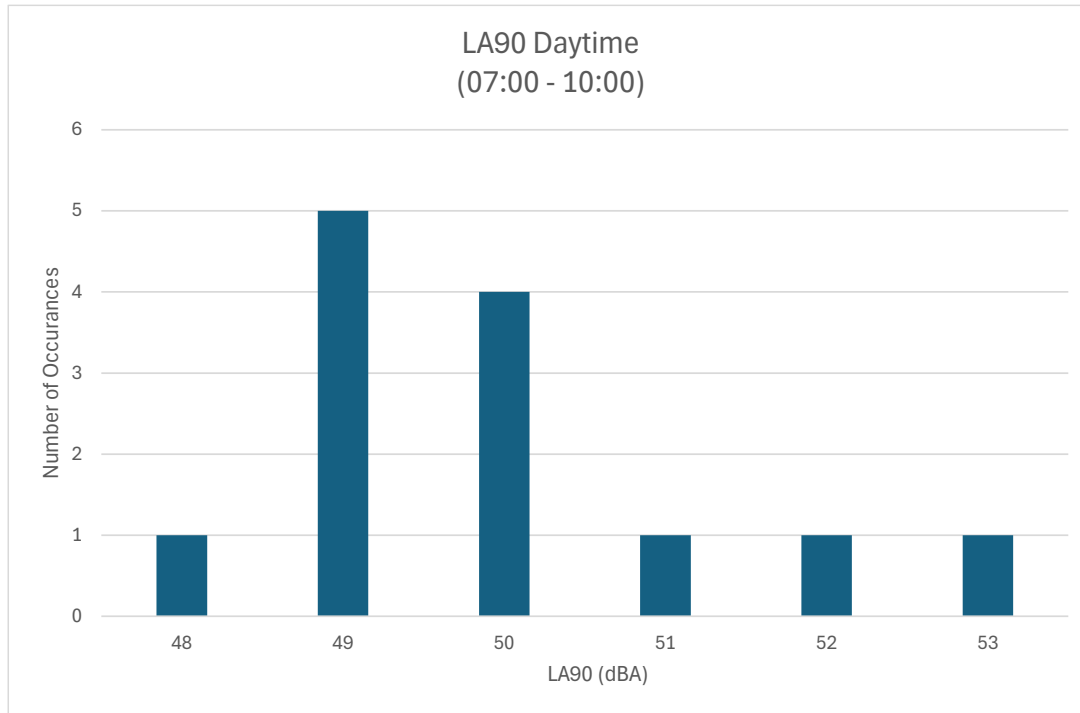
Site notes indicate the following:

- Background noise was mainly distant road traffic; no audible plant was noted.
- Car park was fully occupied overnight, suggesting residential use.
- Minimal night-time activity observed (two vehicle movements, likely deliveries).
- A takeaway unit (The Ben Chippy & Takeaway) appeared active until around 04:30, with lights on and a delivery driver exiting.
- Vehicle departures increased from 06:00–07:00, consistent with commuter activity.
- By 09:00–10:00, the car park remained partly occupied with few arrivals.

2.4. Results

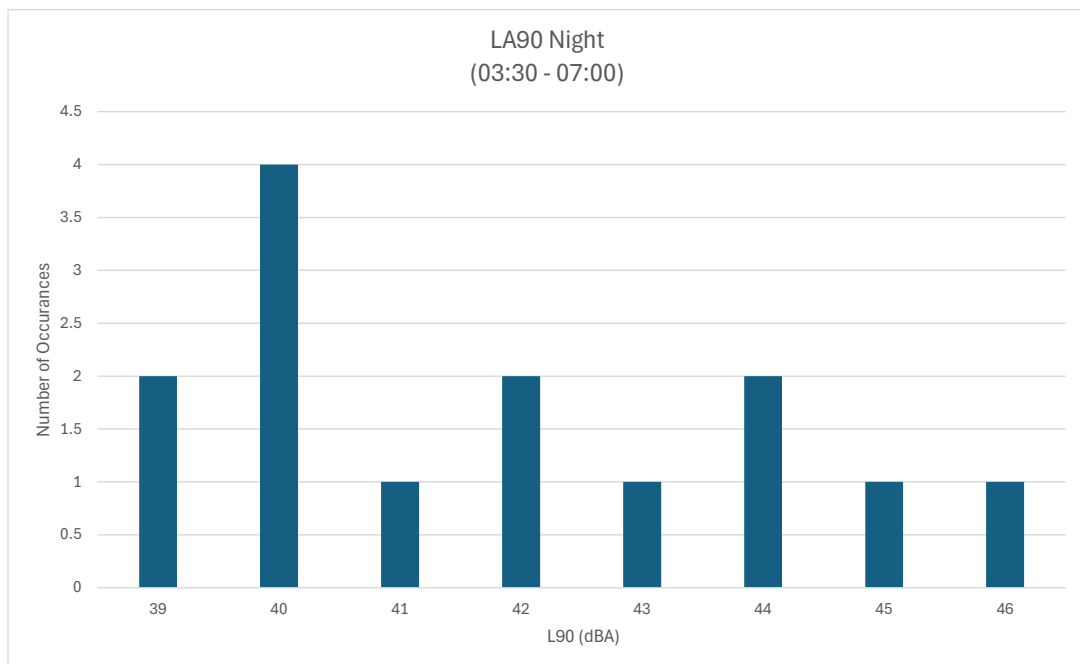
The results of the attended survey are included herein. Measurements were taken in 15-minute periods at measurement position SM1.

2.4.1. Daytime Background Sample.



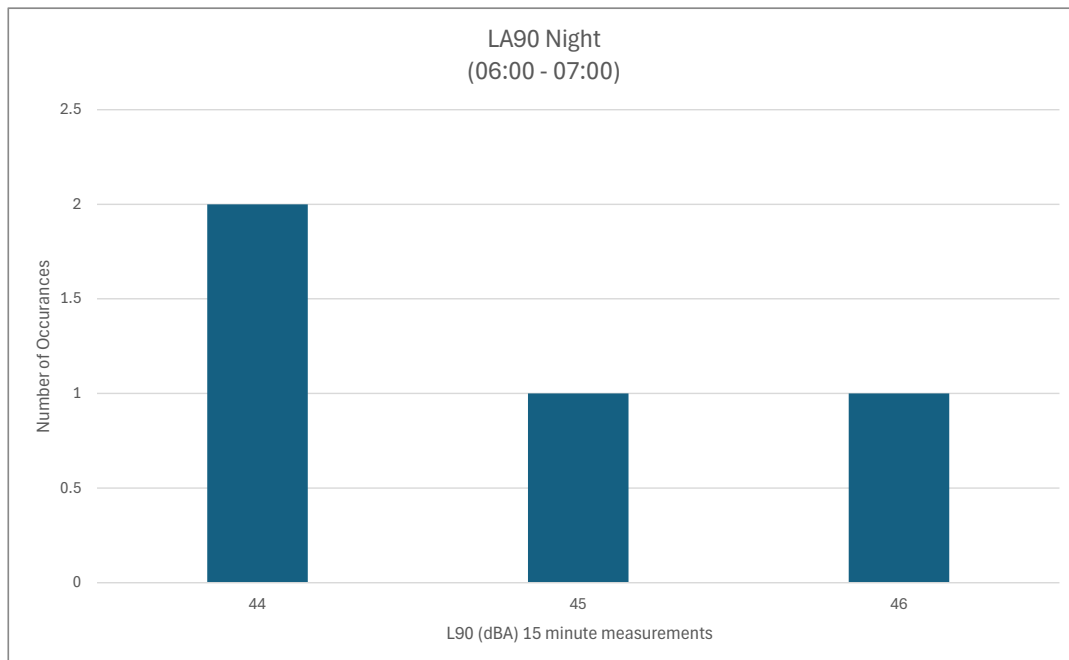
The modal LA90, can be seen to be 49dBA.

2.4.2. Night-time Background Sample.



The modal LA90, can be seen to be 40dBA, and lowest 39dBA.

2.4.3. Night-time Background Sample 06:00 to 07:00.



The modal and lowest LA90, can be seen to be 44dBA.

2.4.4. Background Sound Levels

The background sound levels measured during the survey are summarised in Table 2.1. The modal measured values dB $L_{A90,15mins}$ has been selected for the assessment criteria for delivery noise, while the lowest value has been selected for the nighttime plant noise.

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

Position	Daytime $L_{A90, 15 mins}$	Night-time $L_{A90, 15 mins}$	Night-time 06:00 to 07:00 $L_{A90, 15 mins}$
SM1	49 dB	39 dB	44 dB

3. Delivery Noise Assessment

3.1. Scope and Assumptions

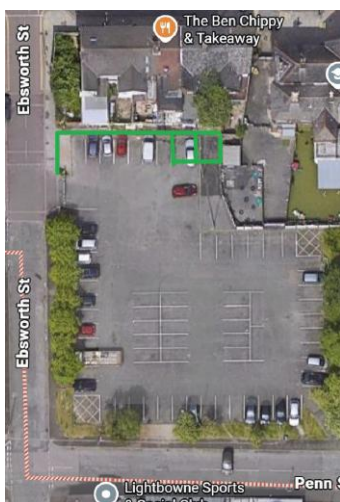
This assessment considers noise from deliveries associated with the proposed development. The proposed deliveries will be from Luton vans, typically approximately 7m in length as seen delivering to the current premises with the contents removed on pallet trucks.

The assessment assumes:

- Daytime (07:00–23:00): two vehicle deliveries within a 1-hour reference period.
- Nighttime (06:00 – 07:00): one vehicle delivery within a 15min reference period.

The assessment assumes the following information to aid mitigation of sound:

- 2.5m high fencing highlighted in the drawing below (in green), separating the site to the properties on the north, and around the refuse store and substation. The fence barrier should be 10Kg/m², continuous with no gaps and well-sealed to the ground.



The assessment assumes no HGV's, trolleys or roll cages for deliveries, following client discussions.

3.1.1. Control of Noise from Deliveries

Noise from deliveries and service yard activities will be controlled to minimise noise disturbance.

The following general good practice measures will be adopted:

- drivers are to switch off their engines when unloading / loading goods;
- areas within which pallet trucks are proposed to operate should incorporate rubber floor matting;
- where vehicles have refrigeration units, these are to be switched off prior to arriving on site and switched back on when the vehicle is off site and away from any residential areas;
- staff are to be informed of the necessity to operate quietly and the developer will display appropriate signage in outdoor areas used by staff.

Equipment is to be maintained to a high standard regularly to ensure the efficacy of the above measures.

3.2. Source Data

Library source data has been used to represent the typical delivery activities in Table 3.1.

Table 3.1: Source sound levels

Activity	$L_{Aeq,T}$ @ 10m
Luton /Transit Van - Arriving and Manoeuvring	52 dB
Luton /Transit Van - Unloading Activities	60 dB

3.3. Rating Level Feature Correction

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.

The source in question is new to the site, and any feature corrections added are based on the consultant's experience and subjective impressions from similar situations.

For the Luton Vans, the specific sound will be dominated by the vehicle unloading.

The loading and unloading is expected to generate impulsive sounds and this activity is expected to be just perceptible at the receptors during the nighttime period (06:00 to 07:00), in comparison to the background sound. Consequently, a 3dB feature correction has been added due to impulsivity, relating to unloading activities during the nighttime period.

It is not deemed necessary to add any feature correction during the daytime due to the specific level being significantly below the background level at the receiver.

3.4. Initial Numerical Impact Assessment

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

Table 3.2 demonstrates a BS 4142 compliant INIA for nighttime delivery noise (06:00 to 07:00) associated with the superstore.

Table 3.2 Initial Numerical Impact Assessment for nighttime Luton Van Deliveries (06:00 to 07:00)

Assessment Step	Night-time (6-7am) Assessment	Night-time (6-7am) Assessment
	R1	R3
Specific Sound Level (dB $L_{Aeq, T}$)	45	45
Acoustic Feature Correction (dB)	3	3
Rating Level (dB $L_{Ar, Tr}$)	48	48
Background Sound Level (dB $L_{A90, T}$)	45	45
Rating over Background (dB)	+3	+3
Estimation of Impact	Low to adverse depending on context	Low to adverse depending on context

The BS 4142 assessment indicates that delivery noise is low to adverse impact depending on context at the nearest receptors R1 and R3 during the night-time 6-7am period.

Table 3.3 Initial Numerical Impact Assessment for Daytime Luton Van Deliveries.

Assessment Step	Daytime Assessment	Daytime Assessment
	R1	R3
Specific Sound Level (dB $L_{Aeq, T}$)	42	42
Acoustic Feature Correction (dB)	0	0
Rating Level (dB $L_{Ar, Tr}$)	42	42
Background Sound Level (dB $L_{A90, T}$)	49	49
Rating over Background (dB)	-7	-7
Estimation of Impact	Low	Low

The BS 4142 assessment indicates that delivery noise is low impact at the nearest receptor R1 and R3 during the daytime period.

3.5. Context of the Mitigated Sound – Nighttime deliveries 06:00 to 07:00

The initial estimate of the sound does not account for all the contextual facts that will be in place once the delivery operations are active.

As BS 4142 suggests, the impact may be less in practice by accounting for the context where the following factors should be considered:

- The absolute level of sound;
- The character and level of the residual sound compared to the character and level of the specific sound; and
- The sensitivity of the receptor and whether dwellings will already incorporate design measures that secure good internal and/or outdoor acoustic conditions.

3.5.1. ABSOLUTE LEVEL OF SOUND

BS 4142: 2014 states:

“Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night”.

BS 4142 does not define ‘low’ in the context of background sound levels nor rating levels. The note to the Scope of the 1997 version of BS 4142 defined very low background sound levels as being less than about 30 dB L_{A90} , and low rating levels as being less than about 35 dB $L_{Ar,Tr}$.

The background sound and rating levels are not low. The low to adverse impact at night (06:00 to 07:00) is not viewed to change.

Initial Impact Assessment	Low to adverse Impact
Modification due to absolute level of sound	Low to adverse impact

3.5.2. CHARACTER AND LEVEL OF THE RESIDUAL SOUND

BS 4142: 2014 states:

“Consider whether it would be beneficial to compare the frequency spectrum and temporal variation of the specific sound with that of the ambient sound, to assess the degree to which the specific sound source is likely to be distinguishable and will represent an incongruous sound by comparison to the acoustic environment that would occur in the absence of the specific sound.”

The nighttime assessment has showed the residual sound at the receiver between 06:00 and 07:00 is steady, therefore is no reason why the low to adverse impact should be modified.

Initial Impact Assessment	Low to adverse Impact
Modification due to character and level of the residual sound	Low to adverse Impact

3.5.3. SENSITIVITY OF THE RECEPTOR AND DESIGN MEASURES THAT SECURE GOOD CONDITIONS

BS 4142 says to consider:

The sensitivity of the receptor and whether dwellings or other premises used for residential purpose will already incorporate design measures that secure good internal and/or outdoor acoustic conditions, such as:

- *Façade insulation treatment;*
- *Ventilation and/or cooling that will reduce the need to have windows open so as to provide rapid or purge ventilation; and*
- *Acoustic screening.*

The receptors are all masonry structures and appear to have double glazing. Consequently, a reasonable level of sound insulation is expected. The residents, therefore, have some protection to outdoor sound. Given the feature-corrected delivery sound is predicted to be marginally above the background sound level, it is expected that normal measures adopted by residents to control noise ingress from all sounds (e.g. local road traffic etc.) would not need to change due to the mitigated delivery sound. Another context benefit to the situation is discussed in section 3.1.1 in reference to the control of delivery noise. If delivery noise is managed correctly and considering the sound insulation of the nearby dwellings, the impact at night due to context can be modified to low impact.

Initial Impact Assessment	Low to adverse Impact
Modification due to receptor sensitivity and design measures	Low impact

3.6. Delivery Noise Summary

The BS 4142 initial impact assessment after considering context demonstrated that the proposed delivery noise source determined that low impact can be achieved during the daytime period and the nighttime period to 06:00 to 07:00.

3.7. 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.

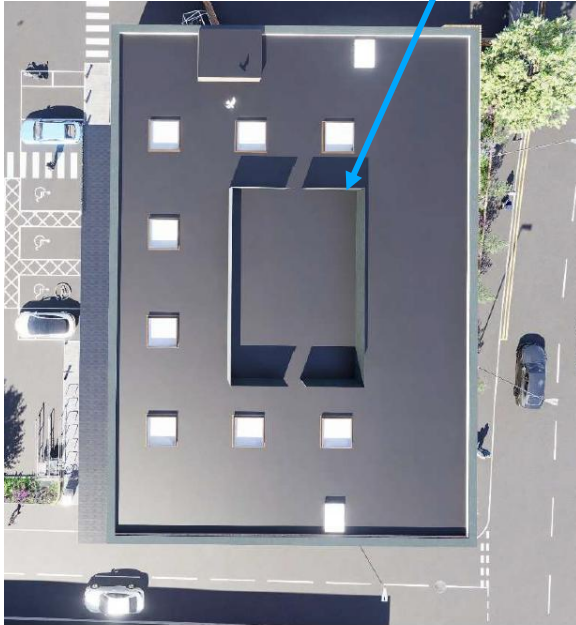
The predictions have also been undertaken by suitably qualified staff, and by using a broad spread of source data obtained through archived specific sound level measurements.

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.

4. Plant Noise Assessment

The proposed superstore has a louvered plant and equipment zone at roof level seen in the diagram below.



The equipment and plant to be located in this area is currently unknown, and limiting sound levels for industrial and commercial sources at the nearest receptors have been determined in accordance with BS 4142, from the background survey measurement data.

To reduce the risk of adverse impacts on nearby sensitive receptors, the limiting levels have been set to ensure that the Rating Level of any plant noise is below the background sound level at each noise sensitive receptor as per the proposed criteria.

This approach is intended to ensure a low impact on the amenity of receptors throughout the lifetime of the proposal Site.

The limiting Rating Levels from any future industrial /commercial noise sources such as external plant at nearby receptors are as follows for daytime and night-time periods:

- 48 dBA Daytime (07:00 – 23:00)
- 39 dBA Night-time (23:00 – 07:00)

Once the plant and equipment to be installed are known, an appropriate specification of louvre can be considered to aid mitigation of the noise levels if required.

5. Conclusions

Peninsular Acoustics Limited has been commissioned by Mr Haider Jan Jaji to undertake a noise impact assessment for the proposed development at Ebsworth Street Car Park, Moston, Manchester, M40 9WB. The scope of this assessment includes consideration of external plant noise, car park activity, and delivery operations, with predictions and evaluations carried out where necessary.

An attended environmental sound survey has been undertaken to determine prevailing background sound levels at a representative location of the nearest receptors.

Delivery Noise

Adopting the mitigation strategy and delivery noise management provides a low noise impact at the nearest noise sensitive receptors during day and the nighttime 06:00 to 07:00 after considering context.

Plant Noise

No external plant equipment has been confirmed at this stage. Accordingly, limiting noise levels have been set so that the BS 4142 rating level from any future plant will achieve a low impact at the nearest receptors during both daytime and night-time periods. Any plant design/specification will be required to comply with these limits.

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 $20\mu\text{Pa}$ (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 $20\mu\text{Pa}$.
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

Detailed Masterplan





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 library 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.	✓	Representative background measurement position selected.
Measured under different source operating conditions relevant to the assessment / adopt worst case if known	x	N/A used library data to inform assessment
Measured more than one cycle/event	x	N/A used library 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
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.
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?	✓	N/A
Were measurements at different heights used to verify screening effects, where relevant?	✓	N/A
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?	✓	Library source data used .
Were detailed topographical data and base mapping used?	×	No topographical screening accounted for due to flat site

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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