

**Former Barclays Bank
27-29 Long Street
Middleton
M24 6TE**

**Environmental Noise Survey and
Noise Impact Assessment
Report**

32939/NIA1

26 February 2026

For:
SAS Property (MCR) Ltd
Suite 13 Warsop Enterprise Centre
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Document Control

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Executive Summary

Hann Tucker Associates has undertaken an environmental noise assessment on behalf of SAS Property (MCR) Ltd in support of a proposed mixed-use conversion at 27–29 Long Street, Middleton, within the jurisdiction of Rochdale Metropolitan Borough Council. The proposals comprise conversion of the existing building to provide two commercial units at ground floor level and four residential apartments at first floor level.

The site is principally affected by road traffic noise from Long Street, Water Street and the wider motorway network. Additional intermittent noise arises from commercial vehicle deliveries serving a neighbouring carpet warehouse to the rear.

A comprehensive unattended noise survey was undertaken over a representative weekday and weekend period (13th to 16th February 2026), measuring L_{Aeq} , L_{A90} and L_{Amax} parameters in accordance with BS 7445. Supplementary attended measurements were completed to establish façade differentials and to observe commercial delivery activity. A sound insulation test between the ground and first floors was also undertaken to establish the existing separating floor performance.

Measured free-field incident noise levels across the development façades generally ranged from 55 to 62 dB $L_{Aeq,16h}$ during the day and between 50 and 57 dB $L_{Aeq,8h}$ at night. Maximum noise levels at night are considered to be around 76 dB $L_{AFmax,2min}$ on the front façade and $L_{AFmax,2min}$ 65 dB on the rear façade.

The assessment has been undertaken with reference to the National Planning Policy Framework (2024), Noise Policy Statement for England, Planning Practice Guidance, BS 8233:2014 and BS 4142:2014+A1:2019, alongside relevant Rochdale Metropolitan Borough Council policies.

The results indicate that open windows would not provide acceptable internal noise levels for habitable rooms under typical background ventilation conditions. Consequently, alternative ventilation strategies (e.g. acoustically rated trickle ventilators or mechanical ventilation with heat recovery) are required in conjunction with new glazing.



Preliminary façade sound insulation specifications have been identified for planning purposes. These comprise double-glazed units with minimum performance in the order of 27–30 dB $R_w + C_{tr}$ (depending on façade and room type), together with ventilators achieving approximately 33–36 dB $D_{new} + C_{tr}$.

With these measures in place, the internal noise criteria set out in BS 8233 (e.g. 35 dB L_{Aeq} daytime in living rooms and 30 dB L_{Aeq} night-time in bedrooms, with 45 dB L_{Amax} night-time) are achievable.

Delivery noise from the adjacent commercial premises has been assessed using representative empirical data and considered in accordance with BS 4142. The assessment demonstrates a rating level at least 5 dB below the representative background level at the nearest proposed residential façade, indicating a low impact. No further mitigation in respect of delivery activity is required.

Plant noise emission limits have been derived to ensure future fixed building services associated with the commercial units do not adversely affect the residential apartments above. These limits are set to achieve compliance with BS 4142, with rating levels no greater than background at the nearest sensitive receptor.

Sound insulation testing of the existing intermediate floor demonstrates performance of $D_{nT,w} + C_{tr}$ 46 dB, meeting the minimum requirement of Approved Document E. Calculations indicate that the floor is suitable for typical retail or low-level commercial uses. Should future tenants propose higher noise-generating uses (e.g. bar or music-led operations), further upgrades to the separating construction may be necessary.

Overall, subject to implementation of the recommended façade treatments, ventilation strategy and adherence to the specified plant and operational noise limits, the site is considered suitable for residential development in acoustic terms and capable of satisfying relevant national and local planning policy requirements.



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1.0 Introduction

Hann Tucker Associates Limited (Hann Tucker) has been commissioned by SAS Property (MCR) Ltd to undertake a noise assessment for a site in Middleton, Greater Manchester.

The site, which is located on Long Street, is being considered for a residential-lead development. The proposals are for the conversion of the existing building. This would comprise converting the ground floor into 2No. commercial units, and the first floor into 4No. residential apartments

The site is subject to road traffic noise from surrounding road and the nearby motorway network as well as delivery vehicles delivering to/picking goods up from nearby commercial premises at the rear.

Baseline noise conditions have been established by means of a detailed noise survey, presented herein. The findings have subsequently been used to assess the suitability of the site for residential use. Measures required to mitigate noise impacts for the proposed development (when operational) have been discussed in context with relevant national & local planning policies, design standards and good practice guides.

2.0 Objectives

To establish by means of an unattended environmental noise survey the existing L_{Amax} , L_{Aeq} and L_{A90} environmental road, rail and air traffic noise levels at secure and accessible on-site positions, using fully computerised noise monitoring equipment.

Measurement procedures shall be in general accordance with British Standard BS 7445 "Description and measurement of environmental noise".

The survey will enable noise emission limits from the development to be identified with reference to the requirements of the Local Authority and/or the application of BS 4142: 2014 and to minimise the possibility of noise nuisance to neighbours.

Based on the results of the unmanned survey, to undertake a noise assessment to assess the suitability of the proposed development for residential use in accordance with the Noise Policy Statement for England (NPSE), National Planning Policy Framework (NPPF), Planning Practice Guidance (ProPG), British Standard BS8233:2014, and Local Authority guidance/requirements (if required).



To consider potential noise impacts from the ground floor commercial unit by way of in-house calculations using existing/proposed construction details and any on site measurements.

Where necessary, mitigation measures will be considered in order to reduce noise levels to acceptable levels at the proposed development.

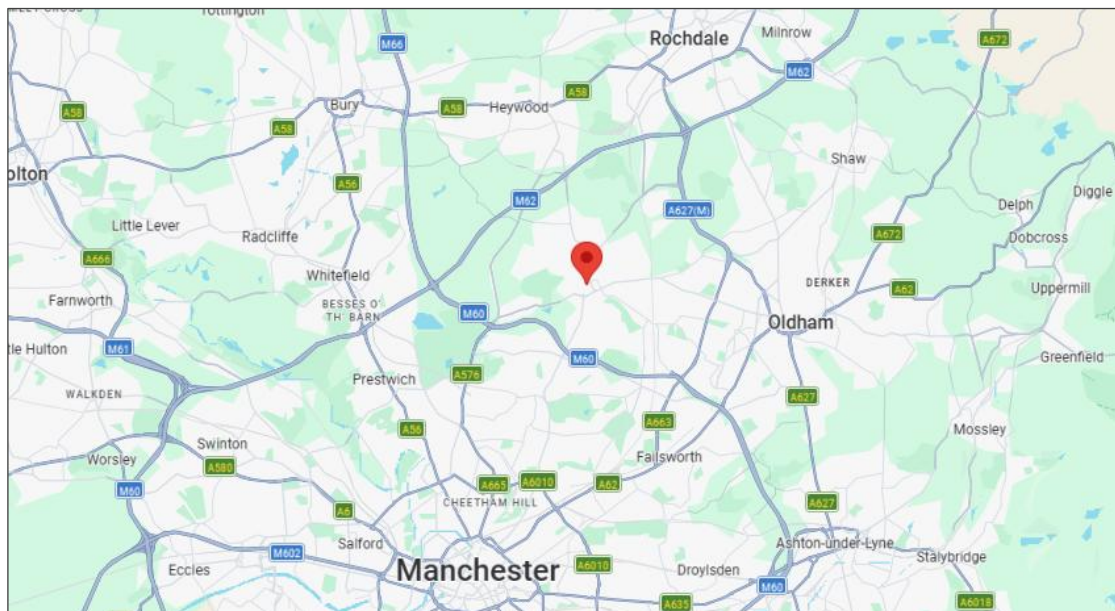
3.0 Acoustic Terminology

For an explanation of the acoustic terminology used in this report please refer to Appendix A enclosed.

4.0 Site Description

4.1 Location

The site is located at 27-29 Long Street. The location is shown in the Location Map below.



Location Map (Maxar Technologies, ©2026 Google)

The site falls within the jurisdiction of Rochdale Metropolitan Borough Council

4.2 Description

The site is bordered by Long Street to the south-east and Water Street to the North-West. The site is adjoined to another commercial unit on the south façade, with all other sides exposed to external noise. The nearest residential (not in direct line of sight) being 79 meters away on the corner of Long Street and Eastway.



The dominant noise source was road traffic noise from local traffic and the surrounding motorway network.

The site is also susceptible to commercial vehicle noise delivering and picking up materials from a neighbouring carpet warehouse at the rear of the development.

The site is shown in the Site Plan below.

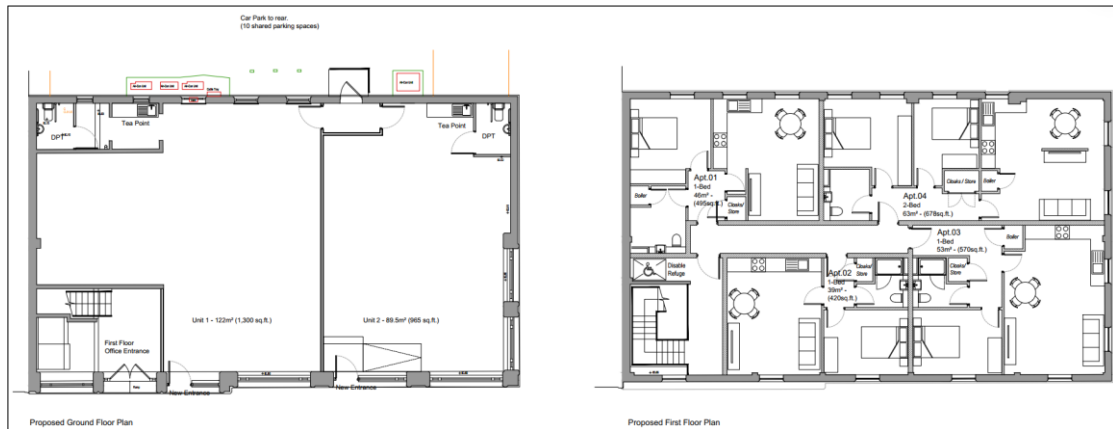


Site Plan (Maxar Technologies, ©2026 Google)

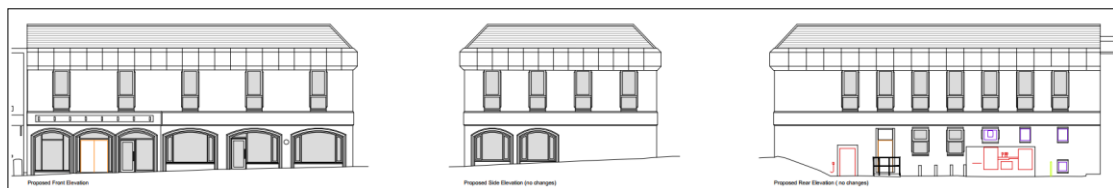
5.0 Proposed Development

The existing building is being converted with proposals for 2No commercial units on the ground floor and 4No Residential units on the 1st floor.

It is assumed that glazing is to be replaced. The floor plans and elevations are shown below and overleaf.



Proposed Plans and Elevations c/o NK Architects



Proposed Plans and Elevations c/o NK Architects

6.0 Planning Policies, Standards & Guidance

6.1 Policies & Guides

In order to provide a suitable assessment a number of national planning policies have been considered, including:

- The National Planning Policy Framework (NPPF), 2024
- The Noise Policy Statement for England (NPSE), 2010
- Planning Practice Guidance – Noise (PPGN), 2019

The above documents highlight the importance of considering the potential noise effects on any new residential development and provide a qualitative approach to assessment. However, each of the above does not provide any quantitative guidance. As such, all quantitative guidance used to form a noise impact assessment is taken from various other standards, guidance, and Local Authority requirements as summarised below:

- British Standard BS8233: 2014
- British Standard 4142:2014 + A1:2019

Detailed information for relevant planning policies and guidance can be found within Appendix B.



6.2 Specific Local Authority Criteria

Rochdale Metropolitan Borough Council 'Core Strategy, Adopted October 2016' provides guidance for planning purposes in relation to the proposed development.

"Policy G9 – Reducing the impact of pollution, contamination and land instability

a) Requiring that development does not have impacts that lead to an unacceptable increase in air, water, noise, light or other pollution"

"Policy DM1 – General development requirements

All development proposals, including changes of use of land and buildings, extensions and alterations, will be expected to demonstrate that they:

d) Mitigate against any impacts due to noise, air, dust, light and odour pollution, traffic generation or inadequate access, where such mitigation is identified as being necessary"

e) Mitigation or compensation against environmental impacts e.g. noise, air quality (particularly in Air Quality Management Areas)"

In the absence of defined quantitative criteria, reference has been made to British Standards BS 8233:2014 and BS 4142:2014+A1:2019. These standards have been used to assess noise ingress from surrounding sources affecting the proposed development and to establish appropriate plant noise limits for any future installations.

7.0 Baseline Noise Survey & Testing

7.1 Procedure

Fully automated environmental noise monitoring was undertaken by Nick Mitchell BSc(Hons), AMIOA from approximately 12:30 hours on Friday 13 February 2026 to 12:30 hours on Monday 16 February 2026 to establish full daytime and night-time noise levels over a typical weekday and weekend period. Measurements were taken continuously of the A-weighted (dBA) L_{90} , L_{eq} , and L_{max} sound pressure levels over discrete 2 and 15-minute periods.

External measurements were undertaken across the front/side of the development to obtain noise levels in regard to road traffic noise.



Internal measurements were undertaken across the rear of the development in order to understand the performance of existing glazing and whether this would require uplift to achieve desirable internal noise levels.

Additional attended measurements were performed between 12:57 hours and 13:15 hours on Friday 13 February 2026, and between 12:51 hours and 13:15 hours on Monday 16 February 2026 with the purpose of establishing a level difference between the front and rear of the site and capture any specific noise levels associated with the operation of nearby commercial premises (i.e. loading/unloading of commercial vehicles).

In addition to the noise survey, a sound insulation test between the ground floor and the first floor was undertaken. The floor test was conducted on Friday 13 February 2026 to establish:

- a) the existing sound insulation of the intermediate floor and to determine maximum operational noise levels for the proposed commercial units.
- b) Whether the floor is likely to achieve the minimum requirements of Approved Document E of the Building Regulations.

7.2 Measurement Positions

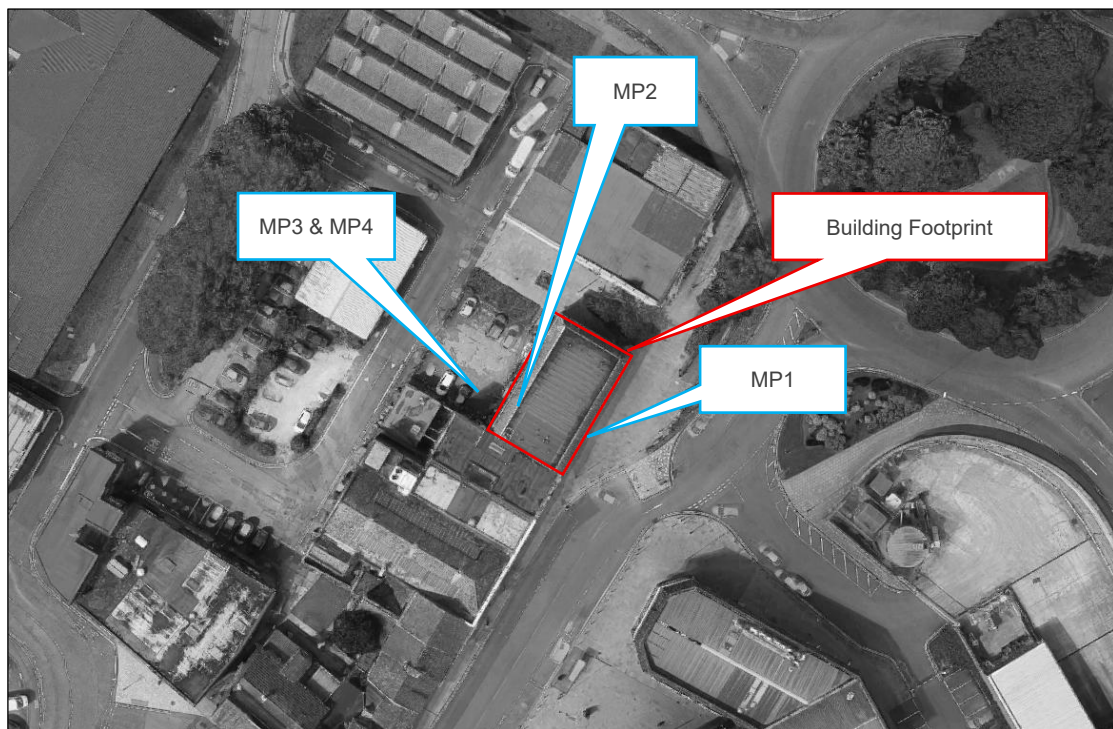
Continuous unattended noise level measurements were undertaken at 2No positions as described in the table below.

Position	Type	Description
1	Unattended (External)	To the front south—east facade, approx. 1 m from the front of the building, approx. 5m from the nearside edge of Long Street. Microphone approx. 4 m above ground and considered to be representative of façade conditions.
2	Unattended (Internal)	Internal measurement undertaken in the centre of an existing office kitchen, away from nearby reflective surfaces. Windows were in a closed position, however the seals and hinges were slightly damaged causing noise ingress. This was to review glazing due to screening afforded to busy road traffic at the front of the development.

Attended noise level measurements were undertaken at the rear of the development as described in the table below.

Position	Type	Description
3 and 4	Attended	To the rear northwest facade, approx. 3.5m from the front of the building, approx. 5m from the nearside edge of Water Street. Microphone approx. 1.5m above ground and considered to be representative of free field conditions.

The positions are shown on the plan overleaf



Plan Showing Measurement Positions (Maxar Technologies, ©2026 Google)

The sound insulation test is not indicated on the above, however, it was undertaken between the ground and first floor unit.

7.3 Weather Conditions

For the unattended survey between Friday 13th February 2026 and Monday 16th February 2026, local weather reports indicated no notable periods of, with temperatures ranging from -2 °C (night) to 7 °C (day) and wind speeds less than 2 m/s. During our time on site, skies were overcast, wind conditions were light and from a north-easterly direction and road surfaces were largely dry. During the attended surveys on Friday 13th February and Monday 16th February the weather was generally dry/overcast cloud with no periods of rainfall and calm wind conditions.



7.4 Instrumentation

The instrumentation used during the survey is presented in the table below:

Position	Description	Manufacturer	Type	Serial Number	Calibration
1	Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	4569	Calibration on 05-01-2025
	Type 1 ½" Condenser Microphone	PCB	377B02	42842	Calibration on 05-01-2025
	Preamp	PCB	PRML x TL1	42842	Calibration on 05-01-2025
2	Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	6490	Calibration on 05-01-2025
	Type 1 ½" Condenser Microphone	PCB	377B02	347391	Calibration on 05-01-2025
	Preamp	PCB	PRML x TL1	070074	Calibration on 05-01-2025
3 and 4	Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	5104	Calibration on 28-02-2024
	Type 1 ½" Condenser Microphone	PCB	377B02	317684	Calibration on 28-02-2024
	Preamp	PCB	PRML x TL1	69922	Calibration on 05-01-2025
All	Type 1 Calibrator	Larson Davis	CAL200	3083	Calibration on 28-02-2025

Each sound level meter, including the extension cable, was calibrated prior to and on completion of the surveys.

No significant changes were found to have occurred (no more than 0.3 dB).

Each unattended sound level meter was located in an environmental case with the microphone connected to the sound level meter via an extension cable. Each microphone was fitted with a windshield.



7.5 Results

7.5.1 Noise Survey

The results have been plotted on Time History Graph 32939/TH1 enclosed presenting the 15-minute A-weighted (dBA) L_{90} , L_{eq} and L_{max} levels at each measurement position throughout the duration of the survey.

In order to compare the results of our survey with the relevant guidelines it is necessary to convert the measured $L_{Aeq(15\text{ minute})}$ noise levels into single figure daytime $L_{Aeq(16\text{-hour})}$ (07:00-23:00 hours) and night-time $L_{Aeq(8\text{-hour})}$ (23:00-07:00 hours) levels.

A summary of the results, as used to inform subsequent assessments against current guidelines, is presented in the table below. The L_{A90} values presented are the 'representative' levels determined through statistical analysis of the 15-minute readings in line with BS 4142.

Position	Day/Period	Daytime (07:00 – 23:00 hrs)		Night-time (23:00 – 07:00 hrs)		
		$L_{Aeq,16hr}$	L_{A90}	$L_{Aeq,8hr}$	L_{A90}	L_{Amax}
1	13/02/2026	65 ^[1]	56	60	43	77
	14/02/2026	65		60		79
	15/02/2026	65		59		74
	16/02/2026	68 ^[1]		-		-
2	13/02/2026	42 ^{[1] & [2]}	28 ^[3]	30	21 ^[3]	49
	14/02/2026	34		29		45
	15/02/2026	35		34		47
	16/02/2026	37 ^[1]		-		-

Notes:

- [1] Not measured for a full 16hour daytime period
- [2] Noise measurements affected by internal strip out of existing stock at ground floor.
- [3] Internal L_{A90} (not to be used for assessment of external plant or setting limits)

Octave band $L_{90,15min}$ noise level measurements were undertaken at MP2, above the proposed commercial space within the existing Office Kitchen. The measurement results are presented in the table below and will be used in subsequent assessments.



Location	Measured Background Noise Level (dB, $L_{A90,T}$) at Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
MP2	38	34	33	28	28	19	13

The following table summarises noise levels recorded the attended measurement position.

Position	Date/Period	Sound Pressure Level (dB)	
		$L_{Aeq,T}$	$L_{A90,T}$
3	13/02/2026 (13:00-13:15)	57	54
4	16/02/2026 (13:00-13:15)	55	52

Due to security concerns, it was not possible to leave an unattended noise monitoring station at the rear of the development. Therefore, comparative attended measurements were taken between the front and rear façade to derive a level difference due to building massing. The results for MP1 and MP3 are provided below.

Microphone Position	Period	Sound Pressure Level (dB)	
		$L_{Aeq,T}$	$L_{A90,T}$
Unattended Front (MP1)	13:00-13:15	64	61
Attended Rear (MP3)	13:00-13:15	57	54
Level Difference	-	7	7

7.5.2 Sound Insulation Testing

The sound insulation test indicates that the existing floor achieves a performance of $D_{nT,w} + C_{tr}$ 46 dB.

The measured octave band level difference across the floor is also provided below. These values will be used in subsequent assessments.

Location	Measured Level Difference, D (dB) at Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
Ground to First Floor	29	32	40	48	49	61	66



7.6 Discussion of Noise Climate

Due to the nature of the survey, i.e. unattended, it is not possible to accurately describe the dominant noise sources, or specific noise events throughout the entire survey period. However, at the beginning and end of the survey period the noise climate was noted to be dominated by traffic noise from surrounding local roads and the nearby motorway network.

During the consultants attendance on site, observations of a HGV delivery were noted; however, measurements of the full delivery period could not be undertaken.

Based on the results in MP2, there is potential for noise levels during the night (i.e. $L_{Aeq,8hr}$ and L_{AFmax}) to be exceed the typical requirements of the LPA. As such, recommendations for enhancement to the existing façade shall be recommended on the bases of this analysis.

8.0 Existing Commercial Noise Impacts

8.1 Assessment Overview

This section considers the potential noise impact of delivery vehicle movements and associated loading/unloading activities from a nearby carpet storage unit. This is due to the observations of a delivery during attendance on site. It was not possible to capture the full delivery period and to quantify the potential of noise impact, therefore, empirical data from measurements similar sized retail units have been utilised.

8.2 Operation

Whilst it is not known exactly when the delivery times are, the online advertised operational times are 09:30-17:00, Monday to Saturday.

8.3 Delivery Noise Limits

Based on the survey results between the proposed hours of operation, we would propose the following noise levels to be achieved, measured in free-field conditions at the proposed development from nearby commercial delivery noise.

The limits have been derived using the comparative correction factor as set out in Section 7.5.1.

The limits align with typical requirements of BS 4142, i.e. equal to background demonstrates a low impact upon receptors.



Location	Daytime Criteria, dB L _{Ar,Tr} (07:00 – 23:00)
Nearest Rear-facing Window of Proposed Development	46

8.4 Delivery Noise Levels

In order to inform our assessment of noise generated by vehicle movements, we have considered noise levels measured from similar delivery vehicle movements undertaken by Hann Tucker at a similar sized retail unit for a rigid HGV vehicle.

The noise measurements captured are representative of the observations made during the site visit:

- HGV manoeuvring, including driver door slams and reversing alarms;
- Tail lift operating and coming into contact with the ground;
- Cages being rolled off the tail lift and empties being rolled on to with bangs and rattles; and
- Delivery driver moving cages within the HGV and rolling them along the length to the tail lift.

These are considered to be representative of the 'worst-case' noise levels of the delivery procedure. Noise levels for each activity measured are detailed below:

Event	Duration (Seconds)	Specific Sound Level (dBA) at 5m*
HGV manoeuvring, reversing & door slam	60	65
General Unloading / Loading (use of tail lift and full/empty cages rolling)	600	71

*Corrected for prevailing background noise levels at time of measurement.

8.5 Initial Assessment Results

The following table details the assessment of 1no. HGV manoeuvring to the site entrance and unloading/loading and assessed to the nearest proposed residential window.

Assessment Period	No. Deliveries	Rating Noise Level (dBA)	Noise Rating Limit, L _{Ar,Tr} (dBA)	Difference (dBA)	Impact
Daytime 07:00 – 23:00 hrs	1	41	46	- 5	Low Impact

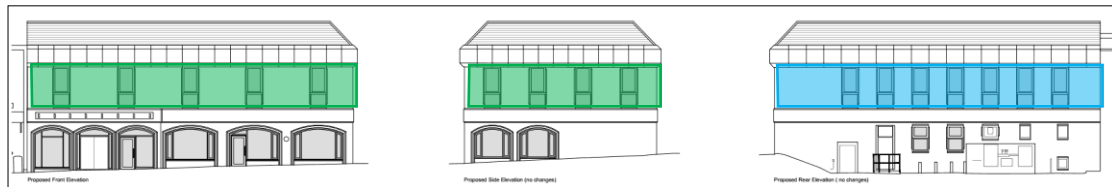


The above assessment demonstrates a low impact upon the rear façade of the development when assessing in accordance with BS 4142. Therefore, commercial noise from deliveries has been considered no further.

9.0 Incident Noise Levels

Using the survey data, the following table and associated mark-ups outline the free-field incident noise levels across the development. For purposes of any subsequent assessment, these zones are to be considered the “Façade Zones”.

Calculated Incident Noise Levels			
Façade	Daytime $L_{Aeq,16h}$ (dB)	Night $L_{Aeq,8h}$ (dB)	10 th Highest Night $L_{Amax,2min}$ (dB)
A – Front & Side	62	56	76
B – Rear	55	50	65



Incident Noise Level Markup

10.0 Achieving Internal Noise Levels

There are 3No ventilation conditions applicable to proposed residential dwellings. These are Background Ventilation as described in Approved Document F (Part F), Overheating as described in Approved Document O (Part O), and Purge Ventilation (odour and smells).

As the development is for a change of use, there is no requirement to meet Part O compliance.

10.1 Purge Ventilation

It should be noted that the internal noise level guidelines are generally not applicable under “*purge ventilation*” conditions as defined by Part F, as this should only occur occasionally (e.g. to remove odour from painting and decorating or from burnt food).

As such, acoustic conditions are generally not a concern during purge ventilation.



10.2 Background Ventilation Condition

10.2.1 Criteria

With reference to the acoustic standards and guidelines as reviewed in Appendix B, the external noise intrusion levels from environmental sources should be controlled so as to not exceed the following criteria.

Activity	Location	Desirable Internal Ambient Criteria	
		07:00 – 23:00	23:00 – 07:00
Resting	Living Rooms	35 dB $L_{Aeq,16hour}$	-
Dining	Dining Room/Area	40 dB $L_{Aeq,16hour}$	-
Sleeping (Daytime Resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$ 45 dB ^[1] L_{Amax}

Notes:

[1] Regular noise events such as trains, aircraft (10th highest)

10.2.2 Outline Specifications

Based on the prevailing noise climate at the site, open windows as a means of background ventilation would not be suitable on any façade of the development. As such, alternative ventilation measures would be required.

Allowance should be made to provide appropriate sound insulation solutions as required including, where necessary, suitably specified glazing and attenuated ventilators/mechanical ventilation systems. Preliminary calculations have been carried out to determine the likely façade sound insulation performance requirements for each façade. Calculation methods follow those outlined in BS 8233:2014 Section G.2 and are based on the following:

- Block cavity external wall
- Typical room volume as per latest drawings
- Typical window area as per latest drawings
- Reverberation time of 0.5 seconds.

From the results of the assessment, the following minimum preliminary acoustic performance specifications are recommended. These are intended for planning use only, and detailed design stage octave band acoustic specifications will need to be developed for tender.



Façade Zone	Façade Location	Façade Element	Preliminary Minimum Sound Reduction Specification
A – Front and Side	Living/Kitchen	Window	27 dB $R_w + C_{tr}$
		Ventilator	33 $D_{new} + C_{tr}$
	Bedrooms	Window	30 dB $R_w + C_{tr}$
		Ventilator	36 $D_{new} + C_{tr}$
B – Rear	Living/Kitchen & Bedrooms	Window	27 dB $R_w + C_{tr}$
		Ventilator	33 $D_{new} + C_{tr}$

10.2.3 Example Glazing Configurations

Example glazing configurations commensurate with achieving the sound insulation specifications noted in Section 10.2.2 are given below.

Glazing Specification, $R_w + C_{tr}$ (dB)	Example Configuration
30	Up-rated double-glazed system e.g. 10/16/4 mm
27	double glazed system e.g. 6/16/6 mm

10.2.4 Example Ventilation Solutions

Example ventilation solutions commensurate with achieving the elemental sound insulation performances noted in Section 10.2.2 are discussed below.

Ventilator Specification, $D_{new} + C_{tr}$ (dB)	Example Configuration
34-42	Acoustic trickle vent per habitable room, or a mechanically assisted supply & extract solution (e.g. local MVHR).
33	1 x 2,500mm ² standard hit-miss trickle vent per habitable room, or a mechanically assisted supply & extract solution (e.g. local MVHR).

The preliminary performance specifications included above are based on the provision of either full MVHR for rooms or 1no. ventilator only per habitable room as required. If additional numbers of ventilators are required to achieve the ventilation rates, the performance requirement for the individual ventilators will need to increase.

The table overleaf provides guidance on the increase in performance specification required for additional numbers of ventilators.



Number of Ventilators	Performance Increase on Ventilator Specifications Stated Above
1	+0 dB
2	+3 dB
3	+5 dB
4	+6 dB

11.0 Operational Noise Impacts

11.1 Fixed Plant & Equipment

Based on the results of the noise survey and the requirements of the Local Authority, we propose that the following plant noise emission criteria be achieved incident at the nearest noise sensitive residential windows, in free-field conditions, with all plant operating simultaneously.

It is understood that the nearest noise sensitive receptors in relation to the ground floor retail units would be first floor apartments. Therefore, all other receptors would be sufficiently mitigated against.

Plant Noise Emission Criteria ($L_{Aeq,T}$, dB)		
Façade Zone	Daytime (07:00 – 23:00 hours)	Night-time (23:00 – 07:00 hours)
A – Front and Side Façade	53	40
B – Rear Façade	46	34

Noise shall be assessed in accordance with BS 4142:2014 with all plant running simultaneously and any corrections applied for items of plant emitting noise of a tonal or irregular quality.

The above limits shall be subject to the final approval of the Local Authority.

11.2 Commercial Unit Operations

11.2.1 Noise Egress Limits

At ground floor level 2No commercial units are proposed as part of the development, however, the use type is not known. Considering the prevailing environmental noise climate at the site, we would expect that noise egress via the unit frontage from most general commercial uses should be readily controllable.



However, for completeness we advise that operational noise break-out from any proposed use is controlled to no more than 5 dB below the existing background noise level as follows:

Period	Commercial noise break-out Limit, L_{Aeq} (dB)
Daytime (07:00-23:00)	48
Notes: ¹ Should the operation include music noise; we advise that the above limits are reduced by a further 5 dB. ² Established based on achieving suitable internal noise levels within noise sensitive premises.	

11.2.2 Noise Transfer

Noise transfer from the ground floor commercial units through the separating floor and wall structures to apartments above shall be considered. It was noted on site that the commercial unit had an MF ceiling with lay-in-grid below the soffit, however, the full existing construction from floor to ceiling is unknown.

The guidance in Approved Document E (ADE) regarding commercial uses is simply that a higher standard of sound insulation may be required between spaces separating domestic and non-domestic purposes, and that the appropriate level of sound insulation required will depend on the noise generated in the non-domestic space. However, as a minimum the separating elements should achieve $D_{nTw} + C_{tr}$ 45 dB as a minimum.

The test result as shown in Section 7.5 demonstrates that the existing floor/ceiling construction is capable of achieving $D_{nTw} + C_{tr}$ 46 dB, therefore only complies with the minimum requirements of ADE. However, for noise transfer to apartments above, the design intent should be to ensure operational short term L_{Aeq} noise transfer to apartments does not exceed a level at least 5 dB lower than the anticipated background L_{90} noise level in each octave band.

Based on adopted guidance, as set out by Manchester City Council and others, octave band noise levels in the 63 Hz and 125 Hz octave centre frequency bands (L_{eq}) are suggested to be controlled not to exceed (in bedrooms) 47 dB and 41 dB, respectively. The criteria are presented in the table below.

Location	Measured Background Noise Level (dB, $L_{90,T}$) at Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
1 st Floor Residential	47 ^[1]	41 ^[2]	28	23	23	14	8

Notes:

[1] Based upon the threshold of audibility



11.2.3 Maximum Internal Noise Level Limits

This section aims to assess and quantify the transfer of noise from operational activities taking place in the proposed commercial units to the first-floor via the party floor. The table below sets out the maximum operational noise levels for the commercial units based on the existing levels of sound insulation and measured background noise levels on the first floor.

Description	Noise Level in each octave band centre frequency (Hz) dB L _{eq}						
	63	125	250	500	1000	2000	4000
Receive room criteria, L _{eq}	47	41	27	23	23	14	8
Sound Insulation of Floor, D, (dB)	29	32	40	48	49	61	66
Maximum Internal Noise Level (dB L _{eq}) SPL _{in}	75	72	67	70	71	74	73

11.2.4 Commercial Noise Levels – Comparison of Calculated vs Typical

The table below sets out typical highest L_{eq} measured noise levels from a number of different commercial space uses to allow a comparison against the maximum internal noise limits calculated for the unit in an unoccupied form.

Description	Reverberant Noise Level (dB L _{eq,1hr}) at Octave Band Centre Frequency (Hz)							dBA
	63	125	250	500	1k	2k	4k	
Calculated Maximum Internal noise level (dB L _{eq})	75	72	67	70	71	74	73	79
Commercial Retail unit with low background music	59	62	59	59	57	53	55	62
Restaurant with no music	61	63	63	66	62	59	58	68
Restaurant with background music playing:	68	67	70	73	72	67	63	76
Typical internal noise levels in a bar with background music playing:	71	74	75	75	72	68	63	77

As can be seen above, the maximum operation noise limits are in excess of the typical operational noise levels for the different potential commercial units, with the exception of typical noise levels experienced in restaurants and bars. It would be expected that upgrades to the units would be required should there be a requirement to operate at higher levels of noise than a typical retail unit.



12.0 Conclusions

A detailed environmental noise survey has been undertaken in order to establish the currently prevailing environmental noise climate around the site.

The environmental noise impact upon the proposed dwellings has been assessed in the context of building regulations, and national and local planning policies.

Appropriate target internal noise levels have been proposed. These are achievable using conventional mitigation measures.

Preliminary acoustic performance specifications for the external building fabric elements have been recommended such that appropriate internal noise levels should be achieved. These are intended for planning use only, and detailed design stage octave band acoustic specifications will need to be developed for tender.

Assessment of nearby delivery noise demonstrates that a low impact would be achieved upon the rear façade and embedded mitigation is capable of controlling noise ingress from both environmental and commercial noise.

Assessment of the existing party floor between the ground floor retail and first floor residential is capable of achieving the minimum ADE requirements. Should proposals of the retail units operate at a higher level of noise than the maximum limits set out in this report, enhancements to the floor construction may be necessary.

The assessment shows the site, subject to appropriate mitigation measures, is suitable for residential development in terms of noise.

Appendix A

Acoustic Terminology

The acoustic terms used in this report are defined as follows:

dB	Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. 30dB + 30dB = 33dB, not 60dB).
dBA	The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The _A subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.
L _{90,T}	L ₉₀ is the noise level exceeded for 90% of the period <i>T</i> (i.e. the quietest 10% of the measurement) and is often used to describe the background noise level.
L _{eq,T}	L _{eq,T} is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, <i>T</i> .
L _{max}	L _{max} is the maximum sound pressure level recorded over the period stated. L _{max} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the L _{eq} noise level.
L _p	Sound Pressure Level (SPL) is the sound pressure relative to a standard reference pressure of 2 x 10 ⁻⁵ Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).
L _w	Sound Power Level (SWL) is the total amount of sound energy inherent in a particular sound source, independent of its environment. It is a logarithmic measure of the sound power in comparison to a specified reference level (usually 10 ⁻¹² W).

Appendix B

Planning Policies, Standards & Guidance

B.1 Noise Policy Statement for England

The Noise Policy Statement for England (NPSE) was published in March 2010 (i.e. before the NPPF). 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 NPSE noise policy aims which are reflected in three of the four aims of planning policies and decisions in paragraph 123 of the NPPF (see paragraph 8.2 (b) below):

“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 Explanatory Note to the NPSE has three concepts for the assessment of noise in this country:

NOEL – No Observed Effect Level

This is the level below which no effect can be detected and below which there is no detectable effect on health and quality of life due to noise.

LOAEL – Lowest Observable 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.

None of these three levels are defined numerically and for the SOAEL the NPSE makes it clear that the noise level is likely to vary depending upon the noise source, the receptor and the time of day/day of the week, etc. The need for more research to investigate what may represent an SOAEL for noise is acknowledged in the NPSE and the NPSE asserts that not stating specific SOAEL levels provides policy flexibility in the period until there is further evidence and guidance.

The NPSE concludes by explaining in a little more detail how the LOAEL and SOAEL relate to the three NPSE noise policy aims listed above. It starts with the aim of avoiding significant adverse effects on health and quality of life, then addresses the situation where the noise impact falls between the LOAEL and the SOAEL when *“all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development.”* The final aim envisages pro-active management of noise to improve health and quality of life, again taking into account the guiding principles of sustainable development which include the need to minimise travel distance between housing and employment uses in an area.

B.2 National Planning Policy Framework (NPPF)

The following paragraphs are from the NPPF (published December 2024):

198. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.

In doing so they should:

- a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
- b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and
- c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

200. Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”

Paragraph 198 also references the Noise Policy Statement for England (NPSE). This document does not refer to specific noise levels but instead sets out three aims:

- “Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.
- Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.
- Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.”

B.3 British Standard BS8233: 2014

British Standard 8233: 2014 “Guidance on sound insulation and noise reduction for buildings” provides guidance for the control of noise in and around buildings.

Internal Areas

BS8233:2014 Section 7.7.2 titled “Internal ambient noise levels for dwellings” states:

“In general for steady external noise sources, it is desirable that internal ambient noise levels do not exceed the following guideline values:

Activity	Location	Desirable Internal Ambient Criteria	
		07:00 – 23:00	23:00 to 07:00
Resting	Living Rooms	35 dB $L_{Aeq,16hour}$	-
Dining	Dining Room/Area	40 dB $L_{Aeq,16hour}$	-
Sleeping (Daytime Resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$

Note 1 The above table provides recommended levels for overall noise in the design of a building. These are the sum total of structure-borne and airborne noise sources. Groundborne noise is assessed separately and is not included as part of these targets, as human response to groundborne noise varies with many factors such as level, character, timing, occupant expectation and sensitivity.

Note 2 The levels shown in the above table are based on the existing guidelines issued by the WHO and assume normal diurnal fluctuations in external noise. In cases where local conditions do not follow a typical diurnal pattern, for example on a road serving a port with high levels of traffic at certain times of the night, an appropriate alternative period, e.g. 1 hour, may be used, but the level should be selected to ensure consistency with the levels recommended in the above table.

Note 3 These levels are based on annual average data and do not have to be achieved in all circumstances. For example, it is normal to exclude occasional events, such as fireworks night or New Year's Eve.

Note 4 Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$ depending on the character and number of events per night. Sporadic noise events could require separate values.

Note 5 If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the façade insulation or the resulting noise level.

If applicable, any room should have adequate ventilation (e.g. trickle ventilators should be open) during assessment.

Note 6 Attention is drawn to the Building Regulations.

Note 7 Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved."

External Amenity Areas

BS8233:2014 Section 7.7.3.2 titled "Design criteria for external noise" states:

"For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}^1$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited.

Other locations, such as balconies, roof gardens and terraces, are also important in residential buildings where normal external amenity space might be limited or not available, i.e. in flats, apartment blocks, etc. In these locations, specification of noise limits is not necessarily appropriate. Small balconies may be included for uses such as drying washing or growing pot plants, and noise limits should not be necessary for these uses. However, the general guidance on noise in amenity space is still appropriate for larger balconies, roof gardens, and terraces, which might be intended to be used for relaxation. In high-noise areas consideration should be given to protecting these areas by screening or building design to achieve the lowest practicable levels. Achieving levels of 55dB $L_{Aeq,T}$ or less might not be possible at the outer edge of these areas, but should be achievable in some areas of the space."

B.4 British Standard 4142:2014 + A1:2019

When setting plant noise emission criteria reference is commonly made to BS 4142:2014 "Methods for rating and assessing industrial and commercial sound".

The procedure contained in BS 4142:2014 provides an assessment of the likely effects of sound on people when comparing the specific noise levels from the source with representative background noise levels. Where the noise contains "a tone, impulse or other characteristic" then various corrections can be added to the specific (source) noise level to obtain the "rating level".

BS 4142 states that: *"The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs". An estimation of the impact of the specific noise can be obtained by the difference of the rating noise level and the background noise level and considering the following:*

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

The determination of the "rating level" and the "background level" are both open to interpretation, depending on the context.

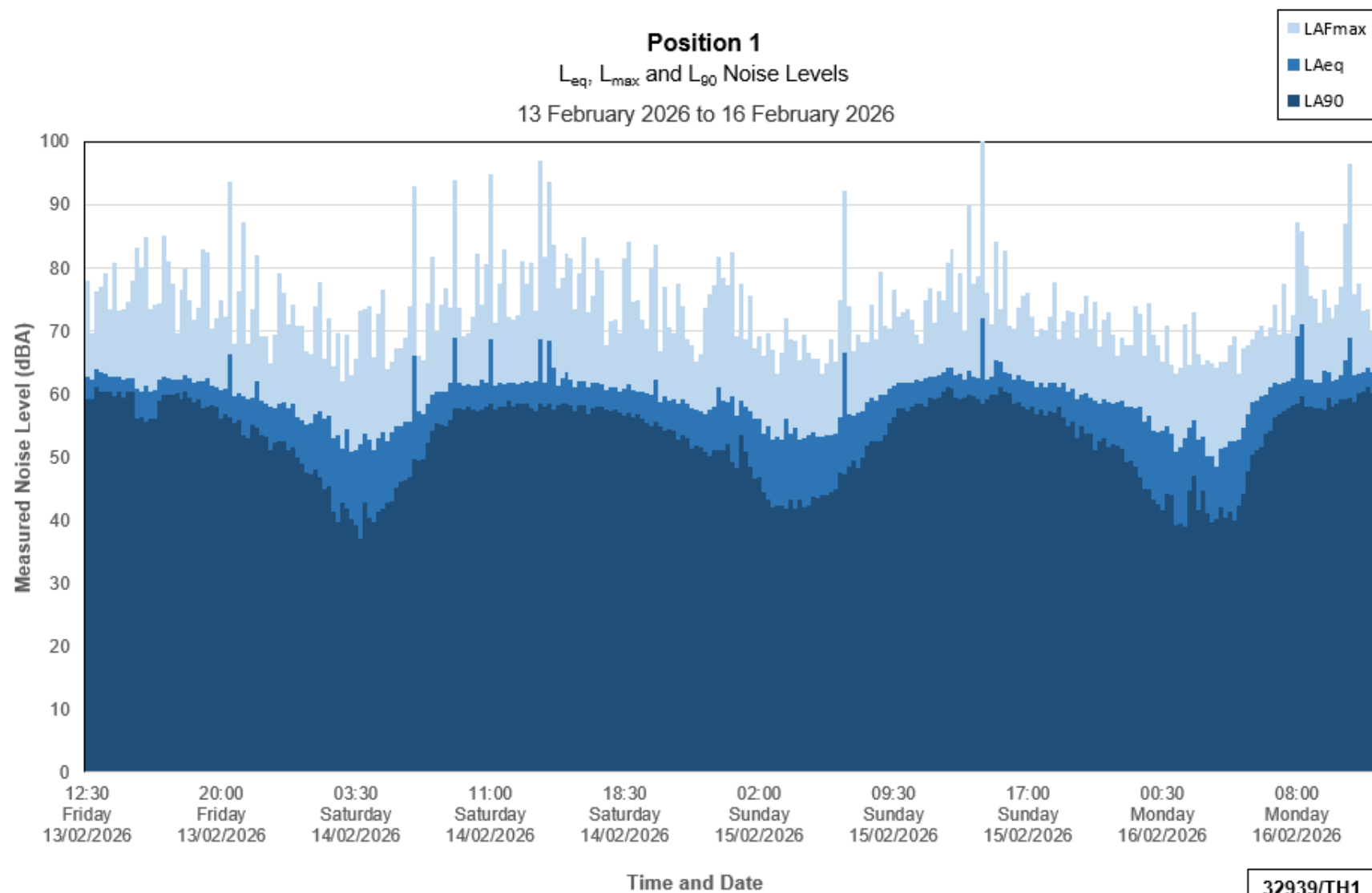
Appendix C

Time History Graphs

Position 1

L_{eq} , L_{max} and L_{90} Noise Levels

13 February 2026 to 16 February 2026



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