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NOISE IMPACT ASSESSMENT FOR PROPOSED DEVELOPMENT:

185 Mauldeth Road, Burnage, Manchester M19 1BA

Prepared for:

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Burnage,
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Institute of Acoustics number: 43468

Report Number: AS25-100.V2

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The author of this report represents Acoustic Solutions to the exclusion of all other organisations.

1.0 INTRODUCTION

1.1

Acoustic Solutions has been commissioned to undertake a noise impact assessment for a proposed development at 185 Mauldeth Road, Burnage

1.2

The objectives for the noise impact assessment were as follows:

- Establish the daytime, evening and nighttime ambient and background sound levels at the application site and its surrounding environs;
- Establish the likely daytime and nighttime noise impact arising from the noise sources identified in the course of the assessment;
- If appropriate, provide recommendations with respect to management and/or structural controls to mitigate and control the potential noise impact upon future occupiers of the proposed development.

1.3

This report details the methodology and results of the assessment. It has been prepared to accompany an application for planning submitted to Manchester City Council for the proposed development of 185 Mauldeth Road, Burnage: erection of a single storey rear extension in association with the ground floor retail use; rear roof dormer extension in association with the change of use of upper floors to create 2x self-contained flats with erection of L-shape dormer to rear and alteration to shop front to create access to the 2 flats above.

The application has been approved, subject to a number of conditions. Conditions 4a and 4b address noise issues:

“4) a) Before the development commences a scheme for acoustically insulating the proposed residential accommodation against noise from Mauldeth Road, Kingsway and the nearby trainline shall be submitted to and approved in writing by the City Council as local planning authority. There may be other actual or potential sources of noise which require consideration on or near the site, including any local commercial/industrial premises. The potential for overheating shall also be assessed and the noise insulation scheme shall take this into account. The approved noise

insulation and ventilation scheme shall be completed before any of the dwelling units are occupied.

Noise survey data shall include measurements taken during a rush-hour period and night time to determine the appropriate sound insulation measures necessary. The following noise criteria shall be required to be achieved when providing adequate ventilation as defined by Approved Document F of the Building Regulations (whole dwelling ventilation):

Bedrooms (night time - 23.00 - 07.00) 30 dB L_{Aeq} (individual noise events shall not exceed 45 dB $L_{Amax,F}$ by more than 10 times);

Living Rooms (daytime - 07.00 - 23.00) 35 dB L_{Aeq} ;

Gardens and terraces (daytime) 55 dB L_{Aeq} .

Higher internal noise levels than those specified above may be allowed when higher rates of ventilation are required in relation to the overheating condition.

b) Prior to first occupation of the residential units, a verification report shall be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report. The report shall also undertake post completion testing to confirm that the internal noise criteria have been met. Any instances of non-conformity with the recommendations in the verification report shall be detailed along with any measures required to be undertaken prior to first occupation of the residential units to ensure compliance with the internal noise criteria.

Reason: To secure a reduction in noise from traffic or other sources in order to protect future residents from noise disturbance and to reduce the potential for overheating."

1.4

This report has been prepared for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties referring to the report should consult the client and Acoustic Solutions as to the extent to which the findings may be appropriate for their use.

1.5

A glossary of acoustic terms used in the main body of the text is contained in Appendix 1.

2.0 BASELINE NOISE SURVEY

2.1 Site Setting

The application site is 185 Mauldeth Road, Burnage. The proposal is for the erection of a single storey rear extension in association with the ground floor retail use; rear roof dormer extension in association with the change of use of upper floors to create 2x self-contained flats with erection of L-shape dormer to rear and alteration to shop front to create access to the 2 flats above. The proposed dwellings will face onto Mauldeth Road to the front (south) and Harwood Road to the rear (north). Beyond Harwood Road to the north-west runs the busy A34 Kingsway. Kingsway runs north-south. As such it also runs to the west of the development site. To the east, and also running north-south, is a railway line.

Acoustic Solutions has assessed existing daytime, evening and nighttime noise sources that have the potential to adversely impact upon the amenity of the premises' future occupiers. Based upon this, this report will then specify the measures to be taken to protect the development from noise from all significant noise sources that are likely to affect the proposed development. The report shall:

- a) Determine the existing noise climate;
- b) Predict the noise climate in living rooms (daytime), bedrooms (night-time) and other habitable rooms of the development;
- c) Detail the proposed attenuation/design necessary to protect the amenity of the occupants of the new residences (including ventilation if required).

2.2 Site Description

The development site is located in north Burnage near the Mauldeth railway station. The site is situated on the northern side of the busy Mauldeth Road, close to where it junctions with Kingsway, 45 metres to the east. This junction is regulated by traffic lights. 55 metres to the west runs a double railway line. The line takes rail traffic to and from Manchester Piccadilly and Crew railway

stations (84 trains southbound, 79 trains northbound per weekday). The area can be described as mixed residential / commercial. A row of residential dwellings stand opposite on the southern side of Mauldeth Road.

The Khanka Naqshbandia Mujaddadia mosque is located 35 metres to the east of the development site. The mosque's carpark is located on the building's far side. It is understood that the Khanka Naqshbandia Mujaddadia mosque is only open for Jamaat (congregational) prayers, occurring around midday.

2.3 Noise Sources

Table 2.1 summarises the identified noise sources that have the potential to adversely impact future occupiers of the building, and their respective distances to the perimeters of the application site.

Table 2.1. Observed Noise Sources

Source	Distance at its closest point, m				Notes
	North	South	East	West	
Mauldeth Road	N/A	7	N/A	N/A	Road traffic consists of private and commercial vehicles.
Kingsway	N/A	N/A	45	N/A	Road traffic consists of private and commercial vehicles.
Kingsway	36	N/A	N/A	N/A	Road traffic consists of private and commercial vehicles.
Railway Traffic	N/A	N/A	N/A	55	Running both directions between Manchester Piccadilly and Crewe railway stations.
Khanka Naqshbandia Mujaddadia mosque	N/A	N/A	N/A	35	Worshippers arriving and departing on foot or in vehicles

2.4

In order to establish the daytime, evening and nighttime background noise levels at the application site and its surrounding environs, a baseline noise survey was undertaken on Tuesday 10 and Wednesday 11 June 2025 between 07:00 and 23:00 hours (daytime/evening) and 23:00-07:00 hours (nighttime).

2.5

For the purpose of the assessment, two noise monitoring positions, MP1 and MP2 were adopted in free field environments at over 1.5 metres above ground and over 3 metres from any vertical reflective surface (see Appendix 2):

- MP1. Outside northern façade, 185 Mauldeth Road.
- MP2. Outside southern façade, 185 Mauldeth Road.

2.6

At the microphone position a series of hourly 15-minute noise measurements were undertaken using a Type 1 integrating sound level meter (Appendix 3). The measurement system calibration was verified immediately before the commencement of the measurement sessions and again at the end. Weather conditions throughout the survey were dry and clear. Wind speeds were commensurate for the assessment methodology. Measurements consisted of A-weighted parameters: L_{Aeq} , L_{A90} and L_{Amax} .

2.7 MP1

The principle noise source was road traffic using Kingsway. The noise was constant throughout the monitoring period; peaking between 08:00 and 22:00 hours. Typical traffic counts over this period: 10 to 23 vehicles (both directions) per minute.

Table 2.2 summarises daytime, evening and nighttime noise measurement data. For the purposes of this report, the average L_{Aeq} and maximum L_{Amax} values measured will be used so to provide an accurate illustration of the noise environment.

2.8 MP2

The principle noise source was road traffic, and to a lesser extent daytime railway traffic (no nighttime train passes occurred). This consisted predominantly of road traffic travelling along Mauldeth Road. The noise was constant throughout the monitoring period; peaking between 08:00 and 22:00 hours. Typical traffic counts over this period: 7 to 15 vehicles (both directions)

per minute. Secondary noise sources were a small number worshippers attending the Khanka Naqshbandia Mujaddadia mosque at 13:00 hours. Their noise impact was negligible.

Table 2.3A summarises daytime, evening and nighttime noise measurement data in the absence of railway traffic. For the purposes of this report, the average L_{Aeq} and maximum L_{Amax} values measured will be used so to provide an accurate illustration of the noise environment. Table 2.3B summarises noise from passing trains (both directions), specifically. For the purposes of this report, the data is represented in SEL: Sound Exposure Levels, dB.

Table 2.2. MP1: Baseline Noise Measurement Data, Daytime, Evening and Nighttime Noise Measurements

Measurement Time	Sound Pressure Level, dB, L_{Aeq}, 15 min	Sound Pressure Level, dB L_{A90}, 15 min	Sound Pressure Level, dB L_{AMax}, 15 min
07:00	54.6	49.8	67.8
08:00	57.9	51.8	66.7
09:00	57.9	51.9	66.3
10:00	58.0	51.8	66.2
11:00	57.6	51.9	64.1
12:00	57.9	51.9	66.8
13:00	57.5	51.7	64.2
14:00	57.9	51.8	64.7
15:00	57.8	51.9	64.6
16:00	57.6	51.8	64.3
17:00	57.7	51.8	65.4
18:00	57.9	51.7	66.2
Daytime Average/Max	58	52	68
19:00	57.7	51.9	62.5
20:00	57.1	51.8	61.9
21:00	58.0	51.8	62.8
22:00	59.0	51.8	61.5
Evening Average/Max	58	52	63
Daytime & Evening Average/Max	58	52	68
23:00	54.8	50.3	60.6
00:00	54.9	48.0	60.5
01:00	51.6	47.5	60.9
02:00	51.6	47.4	60.9
03:00	48.8	44.2	60.8
04:00	49.0	44.0	60.6
05:00	48.7	44.4	61.0
06:00	54.8	47.7	61.0
Nighttime Average/Max	52	47	61

Table 2.3A. MP2: Baseline Noise Measurement Data, Daytime, Evening and Nighttime Noise Measurements

Measurement Time	Residual Noise Level, dB, L_{Aeq}, 15 min	Background Noise Level, dB L_{A90}, 15 min	Measured Noise Level, dB L_{Amax}, 15 min
07:00	58.6	56.8	72.3
08:00	61.6	58.9	73.2
09:00	59.2	58.8	72.3
10:00	61.9	58.9	72.0
11:00	61.8	58.8	73.4
12:00	61.6	58.9	72.2
13:00	61.8	58.9	71.9
14:00	62.0	58.9	71.8
15:00	61.2	59.0	72.0
16:00	61.6	58.8	72.0
17:00	61.7	59.0	73.3
18:00	61.3	58.8	73.2
Daytime Average/Max	61	59	73
19:00	61.1	55.9	72.4
20:00	59.7	55.8	72.4
21:00	58.8	55.9	72.4
22:00	57.4	56.0	73.0
Evening Average/Max	59	56	73
Daytime & Evening Average/Max	61	58	73
23:00	56.0	53.8	70.9
00:00	55.9	53.6	62.8
01:00	55.8	50.9	63.4
02:00	54.8	50.4	64.0
03:00	54.9	50.5	62.8
04:00	53.0	50.5	63.4
05:00	52.9	50.7	63.8
06:00	56.9	54.5	71.9
Nighttime Average/Max	55	52	72

Table 2.3B. MP2: Baseline Noise Measurement Data, Daytime and Evening Noise Measurements Associated with Train Passes

Time	Manchester Piccadilly to Crewe Train Pass SEL, dB	Crewe to Manchester Piccadilly Train Pass SEL, dB
06:00-00:00	71.8	72.5
06:00-00:00	72.1	71.6
06:00-00:00	72	71.9
06:00-00:00	71.6	70.8
06:00-00:00	73.4	72.4
<i>Mean Daytime, dB, SEL, 10 sec</i>	<i>72.18</i>	<i>71.84</i>
00:00-06:00	0	0
00:00-06:00	0	0
<i>Mean Nighttime, dB SEL, 10 sec</i>	<i>0</i>	<i>0</i>

3.0 DISCUSSION

3.1 External Noise Levels

Table 3.1 summarises the likely external Observed Effect Levels at MP1 and MP2, based upon average L_{Aeq} external measurement values.

Table 3.1. External Daytime/Evening measured SPLs at MP1 and MP2 compared against Observed Effect Levels

Location	Predicted Daytime Observed Effect Level	Predicted Evening Observed Effect Level	Predicted Night Time Observed Effect Level
MP1	58	58	52
MP1	SOAEL	SOAEL	SOAEL
MP2	61	59	55
MP2	SOAEL+	SOAEL	SOAEL

3.2 Internal Noise Levels

3.2.1 World Health Organisation: 1999 and BS8233: 2014 (Internal)

Assuming a -15 dB attenuation provided by a slightly open window, daytime, evening and nighttime internal sound pressure levels arising from daytime, evening and nighttime noise sources can be predicted within habitable rooms. These values can then be compared against maximum noise criteria, as set out in the World Health Organisation's 'Guidelines for Community Noise (1999) and BS8233: 2014. Table 3.2 summarises likely external sound levels at MP1 and MP2, based upon average L_{Aeq} and maximum L_{AMax} measurement values.

Table 3.2. Internal Daytime/Evening measured SPLs at MP1 and MP2 compared against BS8233 and WHO: 1999

Time	Location	External SPL, dB, $L_{Aeq, 15 \text{ min}}$	Open Window Attenuation, dB	Predicted Internal SPL, dB	WHO & BS8233 35/30 dB Criteria met?	Exceeds by, dB
Daytime/Evening	MP1	58	15	43	No	8
Nighttime	MP1	52	15	37	No	7
Daytime/Evening	MP2	61	15	46	No	11
Nighttime	MP2	55	15	40	No	10
Time	Location	External SPL, dB, $L_{Amax, 15 \text{ min}}$	Open Window Attenuation, dB	Predicted Internal SPL, dB	WHO & BS8233 45 dB Criteria met?	Exceeds by, dB
Nighttime	MP1	61	15	46	No	1
Nighttime	MP2	72	15	57	No	12

3.3 Railway Noise

3.1.1 Calculation of Railway Noise: 1995

The CRN has been used to predict the daytime and nighttime noise impact of railway noise at the development site's western façade.

The CRN assessment methodology requires the measured SEL sound levels to be converted into $L_{Aeq, 18 \text{ hour}}$ (daytime) and $L_{Aeq, 6 \text{ hour}}$ (nighttime) values. These values can then be compared against the criteria set out in Noise Policy Statement for England, World Health Organisation: 1999 and BS8244: 2014.

The conversion equations are:

$$(\text{Daytime}) L_{Aeq, 18 \text{ hours}} = SEL - 48.1 + 10 \log Q_{day}$$

$$(\text{Nighttime}) L_{Aeq, 6 \text{ hours}} = SEL - 43.3 + 10 \log Q_{night}$$

(where:

Q_{day} is the number of trains counted between 0600 and midnight;

Q_{night} is the number of trains counted between midnight and 0600).

Single-figure Daytime and Nighttime L_{Aeq} values are calculated where appropriate.

Table 3.3 Predicted Railway Noise Impact upon occupiers of the proposed dwelling

	Daytime Manchester Piccadilly to Crewe Trains SEL (5x train sample)	Daytime Crewe to Manchester Piccadilly Trains SEL (5x train sample)	Nighttime Manchester Piccadilly to Crewe Trains SEL (2x train sample)	Nighttime Crewe to Manchester Piccadilly Trains SEL (2x train sample)	
	71.8	72.5	0.0	0.0	
	72.1	71.6	0.0	0.0	
	72.0	71.9	N/A	N/A	
	71.6	70.8	N/A	N/A	
	73.4	72.4	N/A	N/A	
Mean, dB	72	72	0	0	Mean, dB
Number of trains	84	79	0	0	Number of trains
SEL to L _{Aeq} 18 hour value, dB	43	43	#NUM!	#NUM!	SEL to L _{Aeq} 6 hour value, dB
Daytime External Noise Impact at 185 Mauldeth Road, dB L _{Aeq} 18 hour	46 dB		#NUM! dB		Nighttime External Noise Impact at 185 Mauldeth Road, dB L _{Aeq} 6 hour

4.0 RECOMMENDATIONS

4.1 Internal

4.1.1 North-Facing Glazing – All Habitable Rooms

Table 4.1 summarises the glazing necessary to ensure that daytime and nighttime noise levels in all habitable rooms are within the maximum recommended by WHO: 1999 and BS8233.

For all habitable rooms, glazing units of the following specification are recommended:

10mm/(6-16mm)6mm

The Pilkington data sheet (reproduced here as Table 4.3) states that glazing with this specification will provide 32 dB noise attenuation (closed windows). Table 4.2 summarises the predicted daytime and nighttime internal sound levels with closed windows (assuming this recommended glazing).

4.1.2 South Glazing – All Habitable Rooms

Table 4.1 summarises the glazing necessary to ensure that daytime and nighttime noise levels in all habitable rooms are within the maximum recommended by WHO: 1999 and BS8233.

For all habitable rooms, glazing units of the following specification are recommended:

10mm/(6-16mm)6mm

The Pilkington data sheet (reproduced here as Table 4.3) states that glazing with this specification will provide 32 dB noise attenuation (closed windows). Table 4.2 summarises the predicted daytime and nighttime internal sound levels with closed windows (assuming the recommended glazing).

4.1.3 Ventilation.

All windows should be openable; however, where summarised in Table 3.2, above, open-window ventilation may result in excessive internal sound levels during daytime hours. The glazing must incorporate sufficient ventilation so to prevent overheating. ProPG calls for glazing with 'good ventilation'. In terms of temperature, this report interprets this as ventilation sufficient to provide a range of between 15-21°C. Table 4.1 summarises the recommended ventilation scheme for all habitable rooms.

4.1.3.1 Ventilation. All North Facing Habitable Rooms

It is recommended that habitable rooms be ventilated by:

***Open Window / Trickle Vents. Model: TA5220 (SF Xtra Vent) +
TA5202 (C25) 2500EA***

4.1.3.2 Ventilation. South Facing Bedrooms (first floor)

It is recommended that rooms be ventilated by:

***Open Window / Trickle Vents. Model: TA5220 (SF Xtra Vent) +
TA5202 (C25) 2500EA***

4.1.3.3 Ventilation. South Facing Living Room (second floor)

It is recommended that rooms be ventilated by:

***Open Window / Titon Ultimate dMEV decentralised
mechanical extraction fan***

Table 4.1 Recommended Glazing and Ventilation

Location	Storey	Glazing	R _w , C _w , dB	Ventilation
All Habitable North Facing Rooms (MP1)	Ground	N/A	N/A	N/A
	First	10mm/(6-16mm)6mm	32	Open Window / TitonTrickle Vent (Model: TA5220 (SF Xtra Vent) + TA5005 (SF 418) 2500EA)
	Second	10mm/(6-16mm)6mm	32	Open Window / TitonTrickle Vent (Model: TA5220 (SF Xtra Vent) + TA5005 (SF 418) 2500EA)
All South-Facing Bedrooms (MP2)	Ground	N/A	N/A	N/A
	First	10mm/(6-16mm)6mm	32	Open Window / Titon Ultimate dMEV decentralised mechanical extraction fan
	Second	N/A	N/A	N/A
All South-Facing Living Rooms (MP2)	Ground	N/A	N/A	N/A
	First	N/A	N/A	N/A
	Second	10mm/(6-16mm)6mm	32	Open Window / TitonTrickle Vent (Model: TA5220 (SF Xtra Vent) + TA5005 (SF 418) 2500EA)

Table 4.2. Predicted internal noise levels upon the adoption of recommended glazing

Time	Location	External SPL, dB, L _{Aeq} , 15 min	Closed Window Attenuation, dB	Predicted Internal SPL, dB	WHO & BS8233 35/30 dB Criteria met?	Exceeds by, dB
Daytime/Evening	MP1	58	32	26	Yes	-9
Nighttime	MP1	52	32	20	Yes	-10
Daytime/Evening	MP2	61	32	29	Yes	-6
Nighttime	MP2	55	32	23	Yes	-7

Table 4.3 Pilkington Data Sheets

Glass	Sound Reduction Index Octave Band Centre Frequency (Hz)								
	125	250	500	1000	2000	4000	R _w	R _w + C	R _w + C _{tr}
4mm/(6-16mm)/4mm	21	17	25	35	37	31	29	28	25
6mm/(6-16mm)/4mm	21	20	26	38	37	39	32	30	28
6mm/(6-16mm)/6mm	20	18	28	38	34	38	31	30	27
8mm/(6-16mm)/4mm	22	21	28	38	40	47	33	32	29
8mm/(6-16mm)/6mm	20	21	33	40	36	48	35	33	29
10mm/(6-16mm)4mm	24	21	32	37	42	43	35	33	30
10mm/(6-16mm)6mm	24	24	32	37	37	44	35	34	32
6mm/(6-16mm)/6mm laminated	20	19	30	39	37	46	33	31	28
6mm/(6-16mm)/10mm laminated	24	25	33	39	40	49	37	36	32

Table 4.4 Trickle Ventilation Datasheet

Product	Open	Closed	EA (mm ²)
TA5225 (V75) + TA5206 (C75) 2500EA	Dn,e,w (C,Ctr) = 44 (-2;-3) dB	Dn,e,w (C,Ctr) = 55 (-1;-5) dB	2500
TA5225 (V75) + TA5204 (C50) 2500EA	Dn,e,w (C,Ctr) = 42 (-1;-2) dB	Dn,e,w (C,Ctr) = 55 (-2;-5) dB	2500
TA5225 (V75) + TA5005 (SF 418) 2500EA	Dn,e,w (C,Ctr) = 40 (-1;-2) dB	Dn,e,w (C,Ctr) = 53 (-1;-4) dB	2500
TA5223 (V50) + TA5202 (C25) 2500EA	Dn,e,w (C,Ctr) = 39 (-1;-2) dB	Dn,e,w (C,Ctr) = 55 (-2;-5) dB	2500
TA5223 (V50) + TA5005 (SF 418) 2500EA	Dn,e,w (C,Ctr) = 38 (-1;-2) dB	Dn,e,w (C,Ctr) = 55 (-2;-5) dB	2500
TA5221 (V25) + TA5202 (C25) 2500EA	Dn,e,w (C,Ctr) = 36 (-0;-2) dB	Dn,e,w (C,Ctr) = 55 (-1;-5) dB	2500
TA5221 (V25) + TA5005 (SF 418) 2500EA	Dn,e,w (C,Ctr) = 35 (-0;-1) dB	Dn,e,w (C,Ctr) = 54 (-1;-4) dB	2500
TA5220 (SF Xtra Vent) + TA5202 (C25) 2500EA	Dn,e,w (C,Ctr) = 35 (-0;-1) dB	Dn,e,w (C,Ctr) = 55 (-1;-5) dB	2500
TA5220 (SF Xtra Vent) + TA5005 (SF 418) 2500EA	Dn,e,w (C,Ctr) = 32 (-1;-0) dB	Dn,e,w (C,Ctr) = 52 (-2;-4) dB	2500
TA5235 (V75) + TA5236 (C75) 5000EA	Dn,e,w (C,Ctr) = 40 (-2;-3) dB	Dn,e,w (C,Ctr) = 51 (-1;-4) dB	5000

4.2 External

There is no external amenity

5.0 VALIDATION ASSESSMENT

5.1

Condition 4b of Manchester City Council's planning approval states:

b) Prior to first occupation of the residential units, a verification report shall be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report. The report shall also undertake post completion testing to confirm that the internal noise criteria have been met. Any instances of non-conformity with the recommendations in the verification report shall be detailed along with any measures required to be undertaken prior to first occupation of the residential units to ensure compliance with the internal noise criteria.

Reason: To secure a reduction in noise from traffic or other sources in order to protect future residents from noise disturbance and to reduce the potential for overheating."

5.2

In order to establish the daytime, evening and nighttime background noise levels at the application site and its surrounding environs, a baseline noise survey was undertaken on Wednesday 10 and Thursday 11 December 2025 at 08:00-09:00 and 00:00-01:00 hours.

Three internal noise monitoring positions, MPA, MPB and MPC were adopted in free field environments. Plan 5.1 summarises the microphone positions.

Daytime

One 15 minute noise measurement was taken at each microphone position.

Nighttime

One 15 minute noise measurement was taken at each microphone position.

All measurements were taken with windows closed and (where appropriate) trickle vents open. At MPC the measurement was taken with the room extraction system (Vent Axia Lo-Carbon Tempra dMEV model) operating.

Plan 5.1. Microphone locations



5.3

Table 5.1 summarises the measured daytime and nighttime internal noise levels at all measurement locations.

Table 5.1 Internal Noise Levels

Location	Measurement Time	Residual Noise Level, dB, $L_{Aeq, 15 \text{ min}}$	Background Noise Level, dB $L_{A90, 15 \text{ min}}$	Measured Noise Level, dB $L_{Amax, 15 \text{ min}}$
MPA	08:00	32.8	29.5	41.1
	00:00	28.8	23.5	35.5
MPB	08:00	31.0	20.8	38.8
	00:00	26.8	19.8	36.1
MPC	08:00	34.7	33.0	41.9
	00:00	29.7	25.2	35.0

6.0 CONCLUSIONS

6.1

A daytime, evening and nighttime noise impact assessment was conducted at 185 Mauldeth Road, Burnage LS28 7DN on 10 and 11 June 2025.

6.2

The existing noise sources (road traffic) were predicted to adversely impact upon the daytime/evening internal amenity of all habitable rooms.

6.3

Appropriate glazing and ventilation specifications was therefore recommended.

6.4

A daytime and nighttime validation assessment was conducted on 10 and 11 December 2025.

6.5

It was observed that glazing and ventilation, as recommended in Acoustic Solutions' report AS-25-100.V1 had been installed.

6.6

The validation assessment confirmed that internal daytime and nighttime noise levels meet BS8233: 2014 and WHO: 1999 criteria. As such, they satisfy Conditions 4a and 4b of Manchester City Council's planning approval.

Appendix 1

NOISE IMPACT ASSESSMENT CRITERIA

A.1

In terms of noise impact assessment criteria, Paragraph 170e of the National Planning Policy Framework (NPPF) 2024 states that planning policies and decisions should contribute to and enhance the natural local environment by *'preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.'*

A.2

Planning Practice Guidance specifically dealing with noise was uploaded to the Government's Planning Portal in March 2024 as an accompaniment to the National Planning Policy Framework. This guidance is summarised herein.

A.3

The guidance states that noise needs to be considered when new developments may create additional noise. Whilst noise can override other planning concerns, neither the Noise Policy Statement for England nor the National Planning Policy Framework (which reflects the Noise Policy Statement for England) expects noise to be considered in isolation, separately from the economic, social and other environmental dimensions of proposed development.

A.4

In order to determine noise impact, local planning authorities' plan-making and decision taking should take account of the acoustic environment and in doing so consider:

- Whether or not a significant adverse effect is occurring or likely to occur;
- Whether or not an adverse effect is occurring or likely to occur, and;
- Whether or not a good standard of amenity can be achieved.

A.5

In line with the Explanatory Note of the Noise Policy Statement for England, this would include identifying whether the overall effect of the noise exposure is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.

A.6

In terms of Observed Effect Levels:

- No Observed Adverse Effect Level (NOAEL) – This is the level of noise exposure below which no effect at all on health or quality of life can be detected;
- Lowest Observed Adverse Effect Level (LOAEL) – This is the level of noise exposure above which adverse effects on health and quality of life can be detected, and;
- Significant Observed Adverse Effect Level (SOAEL) – This is the level of noise exposure above which significant adverse effects on health and quality of life occur.

A.7

At the lowest extreme, when noise is not noticeable, there is by definition no effect. As the noise exposure increases, it will cross the ‘no observed’ effect level as it becomes noticeable. However, the noise has no adverse effect so long as the exposure is such that it does not cause any change in behaviour or attitude. The noise can slightly affect the acoustic character of an area but not to the extent there is a perceived change in quality of life. If the noise exposure is at this level no specific measures are required to manage the acoustic environment.

A.8

As the exposure increases further, it crosses the lowest observed adverse effect level boundary above which the noise starts to cause small changes in behaviour and attitude, for example, having to turn up the volume on the television or needing to speak more loudly to be heard. The noise therefore starts to have an adverse effect and consideration needs to be given to mitigating and minimising those effects (taking account of the economic and social benefits being derived from the activity causing the noise).

A.9

Increasing noise exposure will at some point cause the significant observed adverse effect level boundary to be crossed. Above this level the noise causes a material change in behaviour such as keeping windows closed for most of the time or avoiding certain activities during periods when the noise is present. If the exposure is above this level the planning process should be used to avoid this effect occurring, by use of appropriate mitigation such as by altering the design and layout. Such decisions must be made taking account of the economic and social benefit of the activity causing the noise, but it is undesirable for such exposure to be caused.

A.10

At the highest extreme, noise exposure would cause extensive and sustained changes in behaviour without an ability to mitigate the effect of noise. The impacts on health and quality of life are such that regardless of the benefits of the activity causing the noise, this situation should be prevented from occurring.

A.11

Tables A.1 and A.1B summarises noise exposure hierarchy, based on likely average response.

Table A.1A LOAEL and SOAEL Values

Noise Source	Assessment Location	LOAEL	SOAEL	Time
	Outdoor living space	55 dB L _{Aeq} , 1 hour (A)	56-60 dB L _{Aeq} , 1 hour (A)	Day (07:00-23:00)
	Façade	50 dB L _{Aeq} , 1 hour (A)	72 dB L _{Aeq} , 16 hour (A)	Day (07:00-23:00)
General environmental noise: Road/Rail	Façade	45 dB L _{Aeq} , 8 hour (B)	67 dB L _{Aeq} , 8 hour (A)	Night (23:00-07:00)
	Habitable Room	30 dB L _{Aeq} , 8 hour (B)	40 dB L _{Aeq} , 8 hour (A)	Night (23:00-07:00)
	Habitable Room	35 dB L _{Aeq} , 16 hour (A)	45 dB L _{Aeq} , 16 hour (A)	Day (07:00-23:00)

A: World Health Organisation: Guideline for Community Noise (1999)

B: World Health Organisation: Noise Guidance for Europe (2009)

Table A.1B NOAEL, LOAEL and SOAEL Values

SPL, dB	</=40	41-45	46-50	51-55	56-60	>/=60
Day	NOAEL	NOAEL	NOAEL	LOAEL	SOAEL	SOAEL+
Evening	NOAEL	NOAEL	LOAEL	SOAEL	SOAEL	SOAEL+
Night	NOAEL	LOAEL	SOAEL	SOAEL	SOAEL	SOAEL+

A.12

The subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation. These factors include:

- The source and absolute level of the noise together with the time of day it occurs;
- For non-continuous sources of noise, the number of noise events, and the frequency and pattern of occurrence of the noise;
- The spectral content of the noise (i.e. whether or not the noise contains particular high or low frequency content) and the general character of the noise (i.e. whether or not the noise contains particular tonal characteristics or other particular features);
- The local acoustic character of the area.

A.13

In addition, further useful contextual guidance is provided in:

- British Standard 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings' (BS 8233);
- World Health Organisation (WHO) Guidelines for Community Noise (1999);
- ProPG: Planning & Noise, Professional Practice Guidance on Planning & Noise: New Residential Development, 2017.

A.14

British Standard 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings' sets indoor ambient noise levels from residential dwellings (see Table A.2).

Table A.2 – Indoor Ambient Noise Levels in Dwellings (BS 8233): 2014

Action	Location	Good Indoor Ambient Noise Levels, dB	
Resting	Living Room / Bedroom	$L_{Aeq}(07:00-23:00)$	35
Sleeping	Bedroom	$L_{Aeq}(23:00-07:00)$	30
Sleeping	Bedroom	$L_{AMax}(23:00-07:00)$	45
Action	Location	Good Outdoor Ambient Noise Levels, dB	
Resting	External Amenity	$L_{Aeq}(07:00-23:00)$	50-55

A.15

With regard to sound attenuation through the building envelope, the 'weak points' in the building façade are generally considered to be the windows. The worked example (G.1) at Annex G of BS 8233 suggests that a partially opened window would provide sound attenuation of approximately 15 dB R_w . The Standard also suggests that “..*standard insulating glass units have an insulation value of approximately 30 dB R_w* ” when closed.

A.16

With respect to noise affecting external areas, i.e. gardens, BS 8233 states that “.. it is desirable that the steady noise level does not exceed 50 dB LAeq, and 55 dB LAeq should be regarded as the upper limit”.

A.17

The World Health Organisation’s Guidelines for Community Noise (1999) sets indoor ambient noise levels from residential dwellings (Tale A.3).

Table A.3 – Indoor Ambient Noise Levels in Dwellings (WHO 1999)

Action	Location	Good Indoor Ambient Noise Levels, dB		
Resting	Living Room / Bedroom	L _{Aeq} (07:00-23:00)	35	
Sleeping	Bedroom	L _{Aeq} (23:00-07:00)	30	
Sleeping	Bedroom	L _{AMax} (23:00-07:00)	45	
Action	Location	Good Outdoor Ambient Noise Levels, dB		
Resting	External Amenity	L _{Aeq} (07:00-23:00)	50-55	

A.18

ProPG: Planning & Noise, Professional Practice Guidance on Planning & Noise: New Residential Development, 2017 was developed by the Institute of Acoustics (IOA), the Chartered Institute of Environmental Health (CIEH) and the Association of Noise Consultants (ANC), the ProPG provides practitioners with guidance on a recommended approach to the management of noise within the planning system in England. The document provides guidance which encourages better acoustic design for new residential development and aims to protect people from the harmful effects of noise.

ProPG takes a two stage approach.

Stage 1: Initial Site Noise Risk Assessment;

Stage 2:

- Element 1 – Good Acoustic Design Process;
- Element 2 – Internal Noise Level Guidelines;
- Element 3 – External Amenity Area Noise Assessment;

- Element 4 – Assessment of Other Relevant Issues (compliance with relevant national and local policy; the magnitude and extent of compliance with ProPG; likely occupants of the development; acoustic design versus unintended adverse consequences; acoustic design versus wider planning objectives).

Appendix 2

GLOSSARY OF ACOUSTIC TERMS

Sound Pressure Level (L_p)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 μPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$$L_p = 20 \log_{10}(p/p_0)$$

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 μPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$

The A-weighted 'equivalent continuous noise level' which is an average of the total sound energy measured over a specified period of time. In other words, L_{Aeq} is the level if a continuous noise which has the same total (A-weighted) energy as the real fluctuating noise, measured over the same time period. L_{Aeq} is increasingly being used as the preferred parameter for all forms of environmental noise.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T . L_{A90} is typically taken as representative of background noise.

LA max

The maximum A-weighted noise level recorded during the measurement period.

Hz

The unit of frequency. The number of cycles (in the context of acoustics, the number of complete sound waves generated) per second.

Appendix 3

LOCATION PLAN AND MICROPHONE POSITIONS (MPS)



MP1

MP2

Appendix 4

EQUIPMENT USED

Noise measurements were undertaken using a precision grade sound level meter:

Norsonic Nor145 Model integrating sound level meter.
Serial Number 14529307
Certificate Number U35939/U35940
Last Laboratory Calibrated 17/10/24

B & K 4230 Model calibrator
Serial Number 724157
Last Laboratory Calibrated 21/2/25

The Sound Level Meter was calibrated before and after both measurement periods, with no significant change in calibration. All calibrations took place at the measurement position.

The SLM met the requirements of BS EN 60651: 1994 and BS EN 60804: 2001 IEC 60804: 2000. It was capable of simultaneously measuring Leq and Ln values. Batteries for the SLM and calibrator were checked prior to all measurements.

Appendix 5

REFERENCES

Pilkington (2025) [Online]. Available at:
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