

Phase 1 Newton Heath Manchester

Noise Assessment Report -
Planning Condition 16 (Internal Noise Levels)

Client:

Casey Group Limited
Rydings Road, Rochdale
OL12 9PS

Date:

19 March 2024

Our Ref:

22094-RP-2-R0



**JAMESON
ACOUSTICS**

Consultants in acoustics,
noise and vibration

Document Control

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Contents

1.0 Introduction 4

2.0 Project Information..... 4

3.0 Planning Application Report 5

4.0 Acceptable Internal Noise Levels 6

5.0 Internal Noise Level Survey..... 7

6.0 Internal Noise Level Assessment 9

7.0 Conclusion..... 11

Appendix A – Acoustic Terminology 12

Appendix B – Time History Graphs 13

1.0 Introduction

Jameson Acoustics Limited has been commissioned by Casy Group Limited to survey and assess internal noise levels within a selection of new dwellings at the recently constructed Phase 1 development on land off Oldham Road in Newton Heath. The aim is to assist in the discharge of part b of Planning Condition 16, which states:

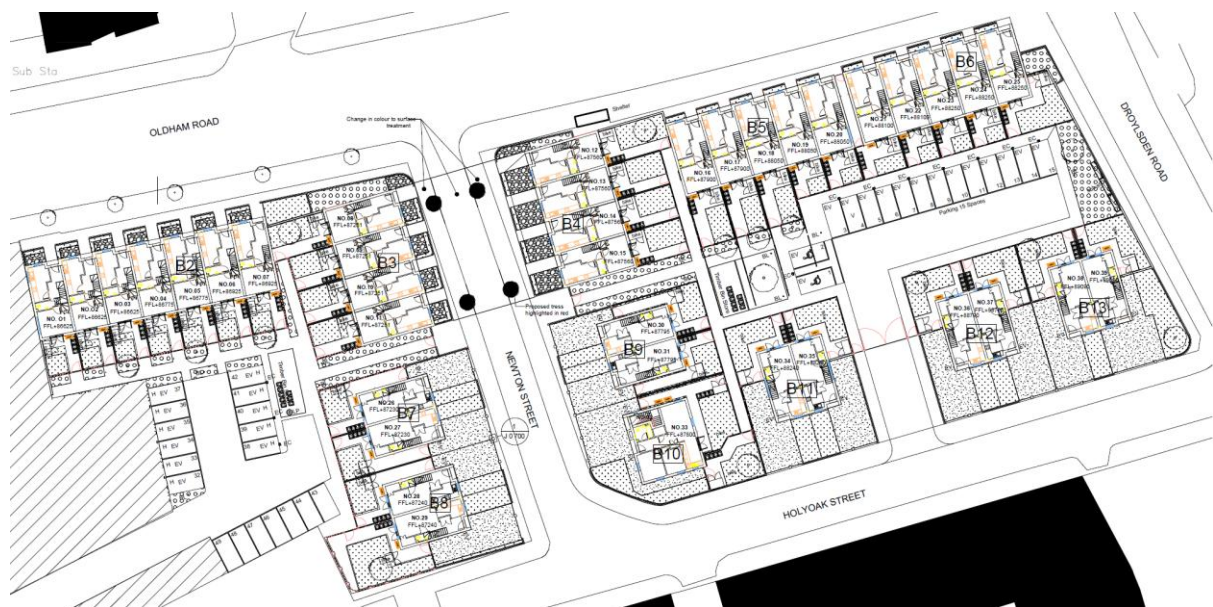
No	Wording
15	(a) Prior to the first occupation of each phase of the residential element of the development a scheme for acoustically insulating the proposed residential accommodation relevant to that phase against noise from Oldham Road, the local traffic network and surrounding commercial uses shall be submitted for approval in writing by the City Council, as Local Planning Authority. The approved noise insulation scheme shall be completed before the first occupation of the relevant phase of development. Noise survey data must include measurements taken during a rush-hour period and night time to determine the appropriate sound insulation measures necessary. The following noise criteria will be required to be achieved: - Bedrooms (night time - 23.00 - 07.00) 30 dB LAeq (individual noise events shall not exceed 45 dB LAmax,F by more than 15 times) - Living Rooms (daytime - 07.00 - 23.00) 35 dB LAeq - Gardens and terraces (daytime) 55 dB LAeq (b) Prior to the first use of each phase of the residential element of the development, a verification report will be required to validate that the work undertaken conforms to the recommendations and requirements approved as part of part (a) of this planning condition relevant to that phase. The verification report shall include post completion testing to confirm the noise criteria has been met. In instances of non-conformity, these shall be detailed along with mitigation measures required to ensure compliance with the noise criteria. Any mitigation measures required for each phase shall be implemented in accordance with a timescale to be agreed with the City Council, as Local Planning Authority, and thereafter retained and maintained in situ.

2.0 Project Information

The development comprises 39nr residential houses, as shown on the below Site Layout.

Each property is afforded double glazed windows and in-wall ventilators, which were specified at design stage, by others, to satisfy acceptable internal noise levels.

External walls are formed from outer facing brick, insulated cavity, internal blockwork and plasterboard lining.



Site Layout

3.0 Planning Application Report

A Noise Impact Assessment Report was produced by Hann Tucker Associates, reference 27467/NIA1 (rev 02) dated 27 February 2020. In this report, planning stage guidance is provided on the acoustic performance requirements for windows and ventilators, as per the below exert from their report.

Type		Façade Element	Preliminary Minimum Sound Reduction Specification	Example Configuration (For Guidance Only)
A	Blue	Window	43 dB $R_w + C_{tr}$	- Secondary glazing (high performance primary unit).
		Ventilator	49 dB $D_{ne,w} + C_{tr}$	- Specialist in-wall acoustic ventilator or mechanical ventilation (e.g. MVHR).
B	Red	Window	36 dB $R_w + C_{tr}$	- 10.8 / 16 / 6.4 mm acoustic double glazing.
		Ventilator	42 dB $D_{ne,w} + C_{tr}$	- Specialist in-wall acoustic ventilator or mechanical ventilation (e.g. MVHR).
C	Orange	Window	32 dB $R_w + C_{tr}$	- 10 / 16 / 6 mm uprated double glazing.
		Ventilator	38 dB $D_{ne,w} + C_{tr}$	- 1 x 2,500 mm ² acoustic trickle vent per habitable room (MEV).
D	Green	Window	27 dB $R_w + C_{tr}$	- 6 / 16 / 6 mm conventional double glazing.
		Ventilator	33 dB $D_{ne,w} + C_{tr}$	- 1 x 2,500 mm ² standard hit-miss trickle vent per habitable room (MEV).



Façade sound insulation performance zones

In the blue (high performance zone), the report proposes the avoidance of secondary glazing by agreeing a 5 dB relaxation of the internal noise levels in line with Manchester City Council's Planning & Noise Technical Guidance. The relevant excerpt from this report is given below.

The performance requirements for glazing Type A are onerous and will likely require the use of secondary glazing, which is unlikely to be desirable for either the developer or the future occupants. However, both BS 8233:2014 and Manchester City Council 'Planning & Noise Technical Guidance', go on to state that, for reasonable internal conditions, "where development is considered necessary or desirable,...the internal target levels may be relaxed by up to 5dB".

We would therefore propose a 5 dB relaxation be afforded to only the worst affected habitable rooms (Blue zone) while still achieving reasonable internal noise levels in these areas.

We understand from discussions with Casey Group that this relaxation has been taken in order to mitigate the need for secondary glazing.

4.0 Acceptable Internal Noise Levels

On the basis of the above, the following table summarises what we understand to be the agreed acceptable internal noise levels to be achieved within dwellings.

The requirements apply to finished and furnished dwellings with in-wall trickle ventilators open and windows closed.

Location (wrt Figure in Section 3.0)	Acceptable Internal Noise Level	
	Daytime (07:00-23:00)	Night-time (23:00-07:00)
Blue Zone – Living Rooms	40 dB $L_{Aeq,16hr}$	-
Blue Zone – Bedrooms	40 dB $L_{Aeq,16hr}$	35 dB $L_{Aeq,8hr}$ 50 dB* L_{Amax}
All Other Zones – Living Rooms	35 dB $L_{Aeq,16hr}$	-
All Other Zones – Bedrooms	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$ 45 dB* L_{Amax}

* not to be exceeded by scheduled noise events more than 10-15 times per night

5.0 Internal Noise Level Survey

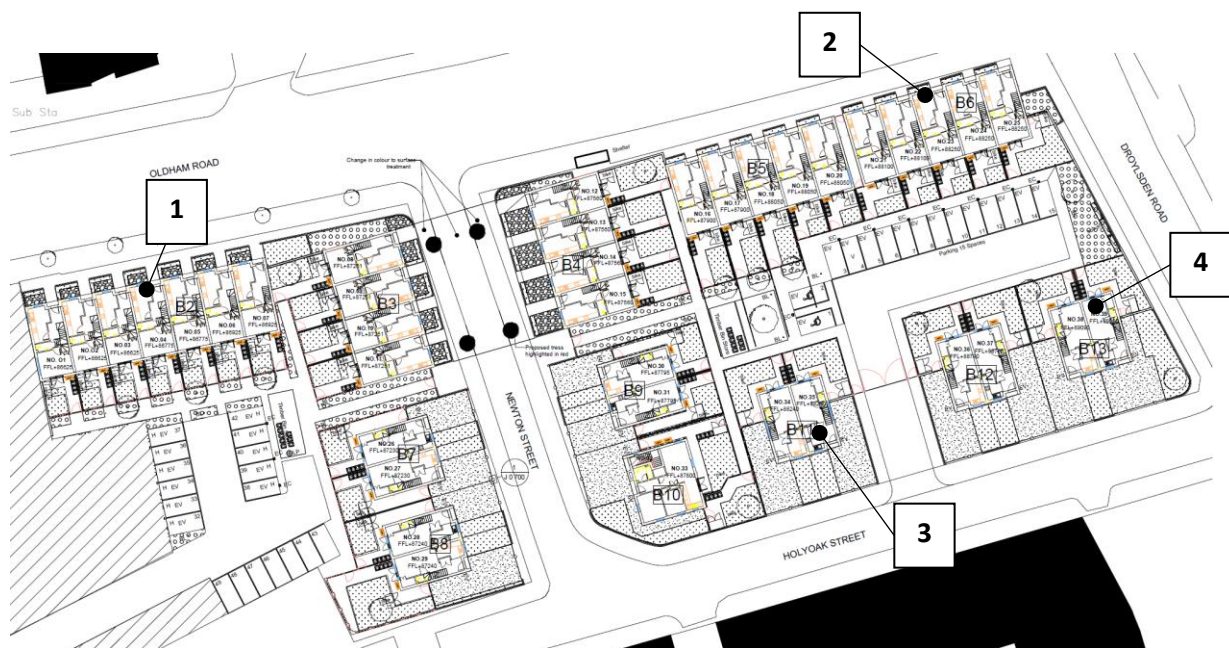
5.1 Procedure

Automated noise level measurements were taken from 10:00 hours on Thursday 29 February 2024 to 08:00 hours on Tuesday 5 March 2024 [Period A] at 3nr positions as described below. A fourth position was recorded from 07:30 on Monday 11 March 2024 to 11:00 on Tuesday 12 March 2024 [Period B].

The positions were selected to establish the typical prevailing daytime and night-time internal ambient and maximum noise levels within bedrooms of a range of plots across the site. The positions were selected to capture worst-case noise intrusion levels in rooms on the perimeters of the site, facing the roads.

Position	Period	Description
1	A	Plot 04 – First floor bedroom facing Oldham Road. – <i>Blue Zone</i>
2	A	Plot 23 – First floor bedroom facing Oldham Road. – <i>Blue Zone</i>
3	A	Plot 35 – First floor bedroom facing Holyoak Street.
4	B	Plot 39 – First floor rear facing bedroom (with view to Droylsden Road and Oldham Road). – <i>Blue Zone</i>

Windows were closed and in-wall trickle ventilators were open through the survey period.



Site Plan showing measurement locations

The microphones were fitted with windshields and mounted in the centre of the rooms, at least 1.4 metres from walls at a height of 1.6-1.7 metres.

The equipment was programme to continuously log all relevant A-weighted broadband (dBA) and linear spectral noise level indices, including L_{eq} , L_{90} , L_{10} and L_{max} , over 5-minute, 15-minute and 1-hour intervals.

5.2 Instrumentation

The instrumentation used for the survey is summarised below. The sound level meters were hand-calibrated at the beginning and end of the survey periods. No significant deviations in calibration level were noted.

Description	Equipment	Serial Nr	Lab Calibration Expiry	Lab Calibration Certificate Nr
Class 1 sound level meter	Svantek 971A (with Type 7152 microphone)	124663 (82835)	11 Aug 2024	12 Aug 2022
Class 1 sound level meter	Svantek 971A (with Type 7152 microphone)	131635 (85533)	1 Nov 2024	2 Nov 2022
Class 1 sound level meter	Svantek 971A (with Type 7152 microphone)	131642 (85571)	9 Nov 2024	10 Nov 2022
Class 1 sound level meter	Svantek 971A (with Type 7152 microphone)	127647 (84398)	12 Mar 2025	13 Mar 2023
Class 1 sound calibrator	Cirrus CR:515	57570	28 Nov 2024	1153776

5.3 Weather Conditions

Due to the nature of the survey, i.e. unmanned, it is not possible to describe the noise climate throughout the duration of the survey period. However, on install and collection, weather conditions were considered suitable for obtaining representative internal readings. On install/collection, the sky was either overcast or with patchy cloud cover, road surfaces were dry-to-damp (but not wet) and wind speeds were low. Based on internet weather reports for the full duration of the survey, conditions generally remain suitable for representative readings, with no periods of unduly adverse weather (e.g. high winds or heavy rainfall).

5.4 Results

The results of the surveys have been plotted on Time History Graphs 22094-1-G1 to G4 enclosed in Appendix B. The graphs present the uncorrected 15-minute A-weighted (dBA) L_{eq} and L_{max} levels at each position throughout the duration of the survey. NB: Due to battery failure, the results at Position 3 were halted at 16:00hr on Monday 4 March 2024.

6.0 Internal Noise Level Assessment

The internal noise levels are to be achieved in finished and furnished rooms. The rooms tested were finished but unfurnished. The correction from unfurnished to furnished rooms of this size (typically 4m x 3m x 2.5m) is 2 dB, calculated by a reverberation time correction (a conservative 0.8 seconds unfurnished to the BS 8233 reference time of 0.5 seconds furnished).

The results of the survey indicate periods where noise levels were clearly falsely elevated by construction works on-site, which shall be excluded from the subsequent analysis.

With these periods excluded, and reverberation time correction applied, the following tables summarises the measured internal ambient L_{Aeq} noise levels in each Plot.

Position 1 – Plot 04

Period Commencement (Day/Night of...) 2024	Ambient Noise Level (dB)	
	Daytime $L_{Aeq,16hr}$ (07:00-23:00)	Night-time $L_{Aeq,8hr}$ (23:00-07:00)
Thursday 29 February	34	30
Friday 1 March	36	31
Saturday 2 March	35	32
Sunday 3 March	33	30
Monday 4 March	34	29
Equiv. Weekly Average	35	30
<i>Upper Limit</i>	40	35
Compliance/Exceedance	✓	✓

Position 2 – Plot 23

Period Commencement (Day/Night of...) 2024	Ambient Noise Level (dB)	
	Daytime $L_{Aeq,16hr}$ (07:00-23:00)	Night-time $L_{Aeq,8hr}$ (23:00-07:00)
Thursday 29 February	36	33
Friday 1 March	37	34
Saturday 2 March	36	35
Sunday 3 March	36	34
Monday 4 March	37	34
Equiv. Weekly Average	36	34
<i>Upper Limit</i>	40	35
Compliance/Exceedance	✓	✓

Position 3 – Plot 35

Period Commencement (Day/Night of...) 2024	Ambient Noise Level (dB)	
	Daytime $L_{Aeq,16hr}$ (07:00-23:00)	Night-time $L_{Aeq,8hr}$ (23:00-07:00)
Thursday 29 February	28	22
Friday 1 March	26	22
Saturday 2 March	25	20
Sunday 3 March	23	21
Monday 4 March	-	-
Equiv. Weekly Average	26	22
<i>Upper Limit</i>	35	30
Compliance/Exceedance	✓	✓

Position 2 – Plot 39

Period 2024	Ambient Noise Level (dB)	
	Daytime $L_{Aeq,16hr}$ (07:00-23:00)	Night-time $L_{Aeq,8hr}$ (23:00-07:00)
Monday 11 – Tuesday 12 March	36	32
<i>Upper Limit</i>	40	35
Compliance/Exceedance	✓	✓

The following table summarises the measured 10-15th highest internal $L_{Amax,5min}$ (night-time) noise levels in each plot.

Position	10-15 th Highest Noise Level at Night, dB $L_{Amax,5min}$ (23:00-07:00)	Upper Limit, dB $L_{Amax,5min}$ (23:00-07:00)	Compliance/ Exceedance
1 – Plot 04	46	50	✓
2 – Plot 23	47	50	✓
3 – Plot 35	38	45	✓
4 – Plot 39	41	50	✓

The results demonstrate that, in all tested Plot bedrooms, the internal ambient noise levels and internal maximum noise levels at night achieved the upper limits of acceptable internal noise levels (as presented in Section 4.0).

7.0 Conclusion

Jameson Acoustics Limited has been commissioned by Casy Group Limited to survey and assess internal noise levels within a selection of new dwellings at the recently constructed Phase 1 development on land off Oldham Road in Newton Heath. The aim is to assist in the discharge of part b of Planning Condition 16.

The assessment demonstrates that internal noise levels within the tested dwellings achieved the upper limits of acceptable internal noise levels.

Appendix A – Acoustic Terminology

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.
dB(A)	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 (e.g. $L_{Aeq,T}$ in dB). Noise 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 only just perceptible.
$L_{Aeq,T}$	$L_{Aeq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time measurement period, T .
$L_{10,T}$	L_{10} is the noise level exceeded for 10% of the measurement period T (i.e. the quietest 10% of the measurement) and has, for many years, been used in the assessment of road traffic noise.
$L_{90,T}$	L_{90} is the noise level exceeded for 90% of the measurement period T (i.e. the quietest 10% of the measurement) and is often used to describe the 'background' noise level.
L_{max}	L_{max} is the maximum sound pressure level recorded over the measurement period, T . L_{max} is often used in assessing scheduled environmental noise 'events' (such as train passbys), particularly at night where such events may cause sleep disturbance.
R_w	The weighted sound reduction index, R_w , is a single figure description of sound reduction as defined in BS EN ISO 717-1. It is single-number quantity which characterizes the airborne sound insulating properties of a material or building element over a range of frequencies. The R_w is calculated from sound insulation measurements taken in an acoustic laboratory. Sound insulation ratings derived from site measurements are invariably lower than the laboratory figures and are referred to as the apparent weighted sound reduction index, R'_w .
$D_{n,e,w}$	The weighted element-normalised level difference, $D_{n,e,w}$, is a single figure description of the sound insulation performance of small building elements, such as a trickle ventilator.
C_{tr}	C_{tr} is correction term applied against the sound insulation single-number values (e.g. R_w) to provide a weighting against low frequency performance. The reference values used within the C_{tr} calculation are based on urban traffic noise.

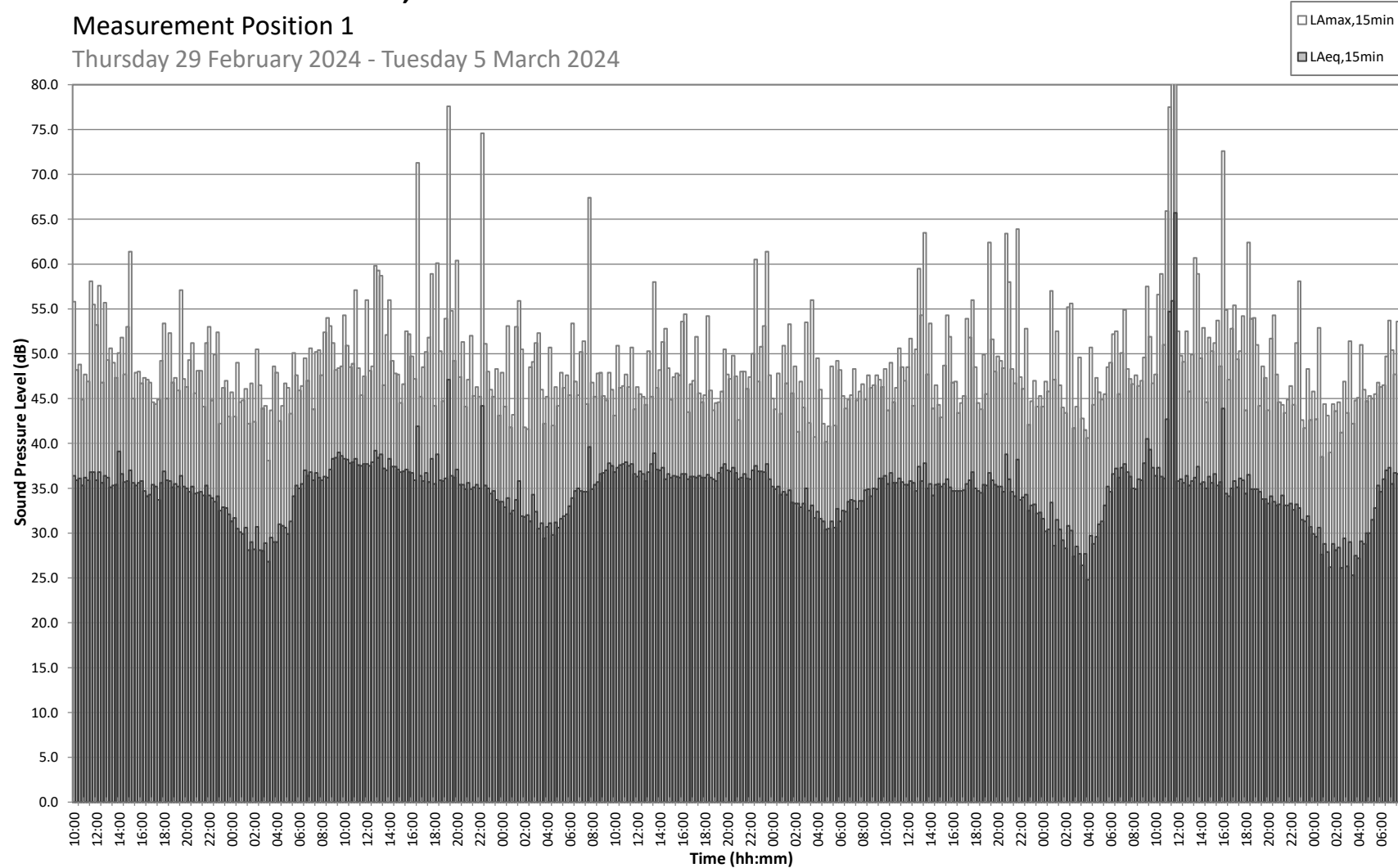
Appendix B – Time History Graphs

Phase 1 Newton Heath, Manchester

Measurement Position 1

Thursday 29 February 2024 - Tuesday 5 March 2024

22094-1-G1

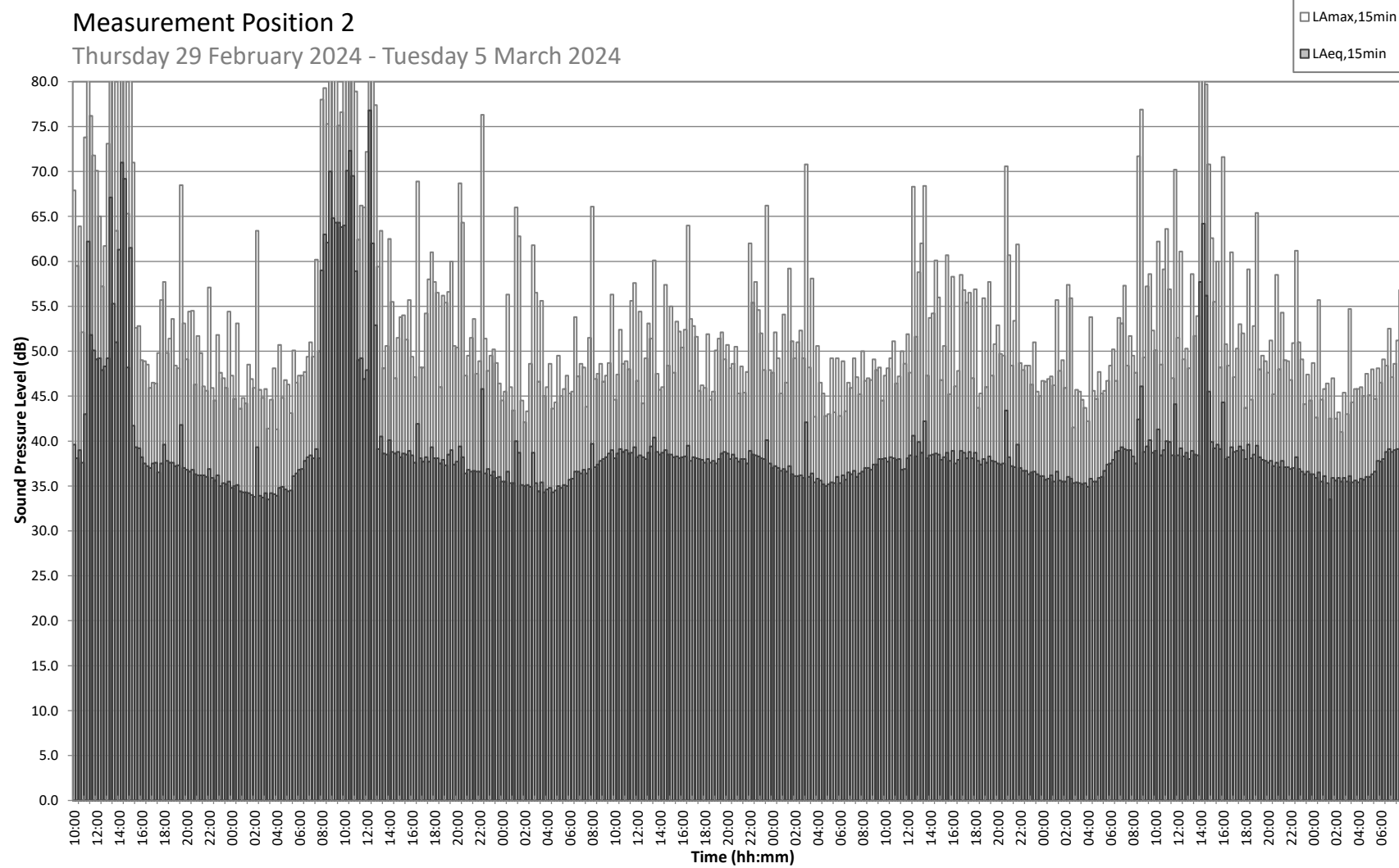


Phase 1 Newton Heath, Manchester

Measurement Position 2

Thursday 29 February 2024 - Tuesday 5 March 2024

22094-1-G2

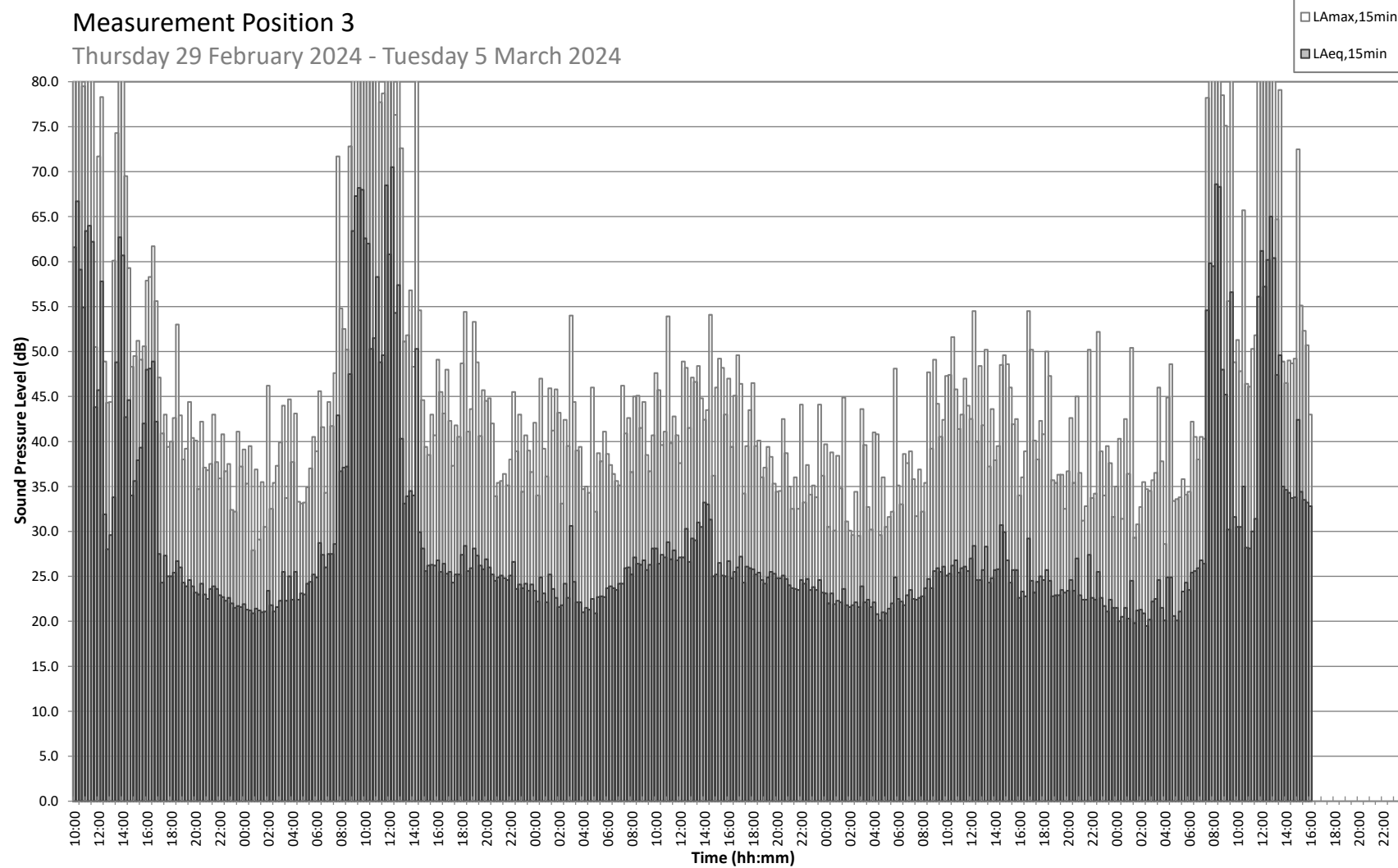


Phase 1 Newton Heath, Manchester

Measurement Position 3

Thursday 29 February 2024 - Tuesday 5 March 2024

22094-1-G3



Phase 1 Newton Heath, Manchester

Measurement Position 4

Monday 11 March 2024 - Tuesday 12 March 2024

22094-1-G4

