



BRAIDEN ACOUSTICS LTD

Innovation Forum // 51 Frederick Road // Salford // Manchester // M6 6FP

NOISE VERIFICATION REPORT

Prepared for : Watson Homes

Date : 14 Nov 2023

Site : Moston Campus, Ashley Lane, Manchester M9 4WU

Report No. : 11217

1 INTRODUCTION

Braiden Acoustics has been commissioned by Watson Homes to undertake a verification noise survey at the site of Moston Campus, Ashley Lane, Manchester M9 4WU in order to discharge noise-related planning conditions.

1.1 PLANNING PERMISSION

Planning application 128835/FO/2020 proposed “Erection of 50, two storey dwellinghouses and erection of three storey apartment building to form 10 apartments with associated car parking, boundary treatment and other associated works following demolition of existing college building.”. The application was approved with conditions on the 28 May 2021.

The relevant conditions are:

18) (a) Notwithstanding the Noise Impact Assessment stamped as received by the City Council, as Local Planning Authority 4 December 2020, prior to the first occupation of the development a scheme for acoustically insulating the proposed residential accommodation against noise from the local traffic network 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 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 L Aeq (individual noise events shall not exceed 45 dB L Amax,F by more than 15 times)

Living Rooms (daytime - 07.00 - 23.00) 35 dB L Aeq

Gardens and terraces (daytime) 55 dB L Aeq

(b) Prior to the first occupation 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. 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. A verification report and measures shall be agreed until such a time as the development complies with part (a) of this planning condition.

Any mitigation measures 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.

Reason: To secure a reduction in noise from traffic or other sources in order to protect future residents from noise disturbance pursuant to policies SP1, H1 and DM1 of the Core Strategy (2007) and saved policy DC26 of the Unitary Development Plan for the City of Manchester (1995).

19) (a) Prior to the first occupation of the development, details of any externally mounted ancillary plant, equipment and servicing shall be submitted for approval in writing by the City Council, as Local Planning Authority. For the avoidance of doubt, externally mounted plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5 db (L_{aeq}) below the typical background (L_{a90}) level at the nearest noise sensitive location.

(b) Prior to the first occupation 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. 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. A verification report and measures shall be agreed until such a time as the development complies with part (a) of this planning condition.

Any mitigation measures shall be implemented in accordance with a timescale to be agreed with the City Council, as Local Planning Authority. Any measures shall thereafter be retained and maintained in situ.

Reason - To minimise the impact of plant on the occupants of the development pursuant to policies SP1 and DM1 of the Manchester Core Strategy (2012) and saved policy DC26 of the Unitary Development Plan for the City of Manchester (1995).

This report deals only with the ‘verification assessment’ as outlined in bold in the above conditions for

- i. internal noise levels
- ii. external plant noise levels.

1.2 AIM

This report details internal noise levels at completed dwellings on site, to assess conformity to relevant standards and guidance for internal noise levels and to fully discharge the above noise conditions.

2 DESCRIPTION OF SITE

2.1 PROPOSED USE

The proposed site layout is shown in Figure 1.



Figure 1
Proposed site layout

Two houses were chosen for the internal noise measurements – plot 03 & plot 50, as shown in Figure 1. Two different areas of the site were chosen for the internal noise measurements.

The whole site is surrounding by housing, so there are no obvious adjacent noise sources to the site.



Moston Lane is approximately 150m north of the site.

Ashley Lane is 30m to the west.

2.2 GLAZING

The original noise assessment recommended standard (4mm) double glazing.

The glazing that has been installed is

4-20-4 Clear Low E : 20mm Warm Edge Argon 33(-1; -5) dB R_w 28 dB $R_w + C_{tr}$

See the Appendix for further details.

3 ACOUSTIC CRITERIA AND METHODOLOGY

This is a residential development that may be susceptible to environmental noise. Potential mitigation measures are determined by recommended indoor noise levels from BS 8233 “Sound insulation and noise reduction for buildings” [1] which, in turn, takes guidance from the research-based World Health Organisation “Guidelines for Community Noise”.

Noise level thresholds are usually given for the night-time – 2300-0700 hrs and day time – 0700-2300 hrs.

3.1 NATIONAL PLANNING POLICY FRAMEWORK (NPPF)

The National Planning Policy Framework is the current document for planning guidance. Paragraph 123 of the NPPF says that planning decisions should aim to:

- avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;
- mitigate and reduce to a minimum, other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;
- recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and
- identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

3.2 BS 8233: 2014

The British Standard BS 8233:2014 “Guidance on sound insulation and noise reduction for buildings” gives guidance on recommended indoor ambient noise levels for residential dwellings.



Room	Criterion	$L_{Aeq,T}$	
		night	day
Bedroom	Sleeping	30	35
Dining Room/Area	Dining	--	40
Living Room	Resting	--	35

Table 1

Recommending indoor ambient noise level thresholds from anonymous noise (taken from Table 4, BS 8233:2014)

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.

Internal noise levels in habitable rooms are calculated using either the simple or rigorous method as described in Annex G in BS 8233:2104.

3.2.1 Noise levels in external living areas

For external living areas such as gardens and balconies, BS 8233:2014 § 7.7.3.2 recommends an upper limit of 55dB $L_{Aeq,day}$ although there is a caveat:

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.

3.2.2 Maximum noise levels

In the 2014 edition of the Standard, the criterion of 45dB L_{AFMax} inside bedrooms has been removed although there is Note 4:

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 $L_{Amax,P}$ depending on the character and number of events per night. Sporadic noise events could require separate values.

The use of the phrases ‘may be set’ and ‘could require’ imply that this is a discretionary criterion.

3.3 COUNCIL CRITERIA

It is usual that Councils adhere to noise levels given in BS 8233.

L_{Aeq} 35 dB 16 hours – indoors, daytime (07.00-23.00)

L_{Aeq} 30 dB 8 hours – indoors, night-time (23.00-07.00)

L_{Aeq} 55 dB 16 hours – indoors, daytime (07.00-23.00)

4 MONITORING DETAILS

4.1 MONITORING DETAILS

Personnel: John Braiden, BSc & MSc Acoustics, MIOA.

Equipment: NTi XL2 integrated real time analyser & B&K 4231 calibrator.



Date / time: Friday 27th October at 16:00 for 48 hours.

The sound level meter was calibrated before after the measurements with no significant drift reported.

4.2 INTERNAL NOISE MONITORING

Noise measurements focussed on noise from within a habitable room at two different plots.

Monitoring was unmanned but audio was recorded.

4.2.1 Location

The microphone was approximately 1.2 m from local ground and placed in the middle of a ground-floor habitable room with the doors and windows closed.

NB It should be noted that the room was unfurnished and without carpets so reverberation noise contributed to the measured noise levels. When the room is fully furnished then the reverberation noise will decrease and therefore the overall noise level in the rooms will also decrease.**

4.2.2 Results

Noise monitoring took place during a busy weekday (Friday), that included Friday evening rush hour traffic, and throughout the weekend.

4.2.2.1 Plot 03

Plot 03 is at the south western part of the site, near to Princesdom Street and Ashley Lane.

The internal noise levels within the habitable room of Plot 03 are shown in Figure 2.

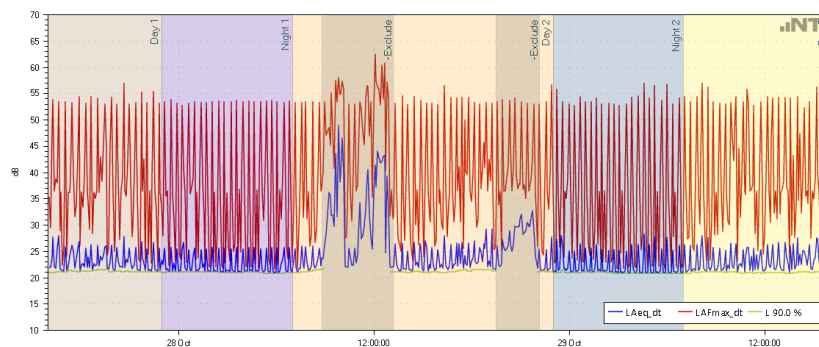


Figure 2
Internal time history – Plot 03

The large impulsive spikes in Figure 2 are a kind of ‘popping’ sound, the origin of which has not yet been determined.



Date	Time		Duration	Time Period	L_{A90} dB	L_{Aeq} dB	L_{Amax} dB
	Start	Finish					
Fri	16:00:00	23:00:00	07:00:00	day	21.1	23.7	56.8
Sat	23:00:00	07:00:00	08:00:00	night	20.9	22.8	53.8
	07:00:00	23:00:00	16:00:00	day	21.0	23.8	56.6
Sun	23:00:00	07:00:00	08:00:00	night	20.8	23.0	56.9
	07:00:00	16:00:00	09:00:00	day	20.9	23.8	56.9

Table 2
Summary of internal noise monitoring results

A summary of the night and day noise levels is:

Night 23dB(A)
Day 23 dB(A)

4.2.2.2 Plot 50

Plot 50 is to the south eastern side of the site.

The internal noise levels within the habitable room of Plot 50 are shown in Figure 3.

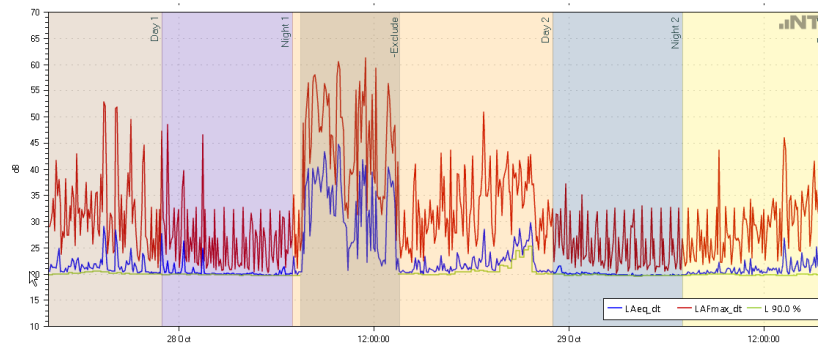


Figure 3
Internal time history – Plot 50

The time history graph for Plot 50 is not as 'noisy' than Plot 03.



Date	Time		Duration	Time Period	L _{A90} dB	L _{Aeq} dB	L _{Amax} dB
	Start	Finish					
Fri	16:00:00	23:00:00	07:00:00	day	20.0	22.1	52.8
Sat	23:00:00	07:00:00	08:00:00	night	19.7	20.4	48.4
	07:00:00	23:00:00	16:00:00	day	19.9	22.7	50.9
Sun	23:00:00	07:00:00	08:00:00	night	19.6	19.9	37.2
	07:00:00	16:00:00	09:00:00	day	19.8	21.2	46.0

Table 3
Summary of internal noise monitoring results for Plot 20

Again, the internal noise levels were very low.

A summary of the night and day noise levels is:

Night 20dB(A)

Day 22dB(A)

4.3 EXTERNAL PLANT NOISE MONITORING

There were no external plant.

Ventilation of the properties will be achieved by open windows.

5 ACOUSTIC ASSESSMENT

5.1 INTERNAL NOISE LEVELS

5.1.1 Results overview

Plot	period	room	Internal Levels L _{Aeq} (dB)			Result
			Limit	Meas	Diff	
03	night	bedroom	30	23	-7	Noise level on the limit
	day	lounge	35	23	-12	under the limit
50	night	bedroom	30	20	-10	under the limit
	day	lounge	35	22	-13	under the limit

Table 4
Measured noise level compared with day and night limits.

Internal noise levels easily met the thresholds.

6 CONCLUSION

A verification acoustic survey has taken place at Moston Campus, Ashley Lane, Manchester M9 4WU to discharge noise conditions of planning application 128835/FO/2020 for the erection of residential dwellings.

Condition 18 – internal noise levels



Internal noise levels met the relevant thresholds.

Condition 19 – external plant noise levels

There are no external plant, and ventilation to the accommodation will be achieved via open windows.

7 REFERENCES

- [1] BS8233: 2014
Sound Insulation and noise reduction for buildings – Code of Practice,
British Standards Institute, 2014.



Appendix

A1 GLAZING SPEC

