



BRAIDEN ACOUSTICS LTD

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

INTERNAL NOISE VERIFICATION REPORT

Prepared for : Watson Homes

Date : 27 Oct 2022

Site : Lees St, Openshaw

Report No. : 11065

1 INTRODUCTION

Braidens Acoustics has been commissioned by Watson Homes to undertake an acoustic survey at the site of Lees St, Openshaw in order to support a planning application for the erection of residential dwellings.

1.1 PLANNING PERMISSION

Planning application 124265/FO/2019 stated “Proposed erection of 1 no. three storey apartment building containing 9 no. apartments, 8 no. two 1/2 storey houses, and 2 no. single storey bungalows with new vehicular access from Stanley Street, associated car parking, landscaping and boundary treatments”. The application was approved with conditions on the 9th December 2019.

Condition 16 states:

*16) The development shall be undertaken in accordance with the details of document ref: Residential Acoustic Survey for: Watson Homes by Braidens Acoustics Ltd. dated 9 July 2019 Site: Ashton Old Rd, Manchester M11 1ND Report No: 1695 Rev A relating to noise attenuation measures. **Before the phased occupation of any of the authorised apartments, houses or bungalows, a verification report shall be submitted to and approved in writing by the City Council as local planning authority confirming that the noise attenuation, as specified with the approved report, have been implemented in full and that these measures shall be maintained in situ thereafter.***

Reason - To secure a reduction in noise from Ashton Old Road, Lees Street and Stanley Street and nearby industrial or otherwise noise generating uses in order to protect future residents from noise nuisance, pursuant to policies SP1, H1 and DM1 of the Core Strategy for the City of Manchester.

1.2 AIM

This is a follow-on report from the original Noise Impact Assessment, report number 10695revA, dated 9th July 2019 to verify the internal-‘as-built’ noise levels. For a complete picture then both reports should be read in conjunction.

2 DESCRIPTION OF SITE

2.1 PROPOSED USE

The indicative layout is shown in Figure 1.

ASHTON OLD ROAD



Figure 1
Proposed site layout showing monitoring location

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.



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

4.2 VISIT 1

Noise measurements focussed on noise from within a habitable room facing Ashton Old Road – the noisiest elevation.

Monitoring was unmanned.

4.2.1 Location

The microphone was approximately 1.2 m from local ground and placed in the middle of the room, directly facing Ashton Old Road, with the door closed, in Plot 9 as shown in Figure 1.

NB It should be noted that the room was unfurnished 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 room will also decrease.**

4.2.2 Results

Noise monitoring took place during a busy weekday (Friday), when traffic noise would be the greatest, over an (almost)¹ 24-hour period.

The internal noise levels within the habitable room of Plot 9 are shown in Figure 2.

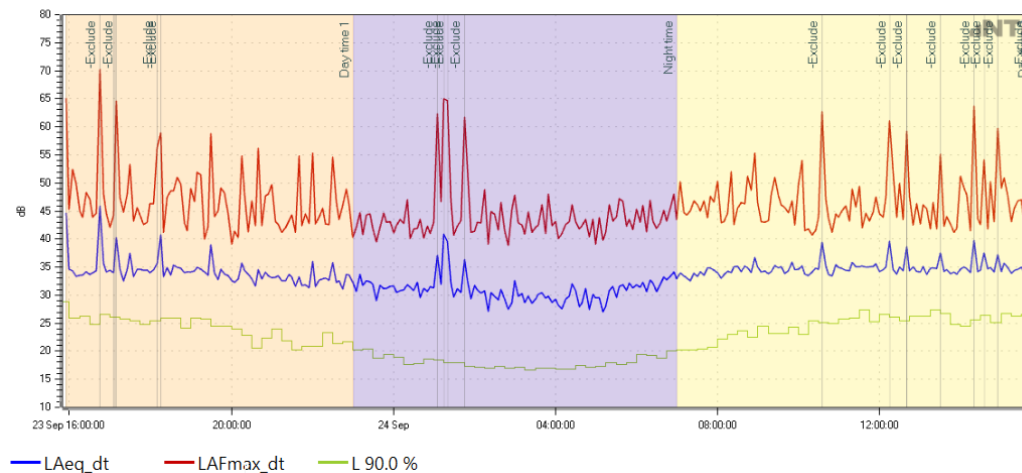


Figure 2
Internal time history – Plot 9

There were several instances where there were sirens and revving engines; these noise events were excluded from the data.

¹ The monitoring lasted for 23:50:59.



Date	Time		Duration	Time Period	L _{A90} dB	L _{Aeq} dB	L _{Amax} dB
	Start	Finish					
Fri 23/09/2022	15:52:26	23:00:00	07:02:05	day	24.0	34.0	58.8
	23:00:00	07:00:00	07:57:48	night	17.6	31	52.9
	07:00:00	15:45:00	08:45:00	day	24.3	34.5	55.3

Table 2
Summary of internal noise monitoring results

A summary of the night and day noise levels is:

Night 31 dB(A)
Day 34 dB(A)

5 ACOUSTIC ASSESSMENT

5.1 RESULTS OVERVIEW

Façade	period	room	Internal Levels L _{Aeq} (dB)			Result Discussion
			Limit	Meas	Diff	
Ashton Old Rd / Lees Street	night	bedroom	30	31	+1	Noise level only just over the limit by 1 dB
	day	lounge	35	34	-1	Noise level under the limit by 1 dB

Table 3
Measured noise level compared with day and night limits.

The night time noise level was 1dB over the limit of 30 dB. However, as mentioned above in Section 4.2.1, the room was unfurnished and so the internal noise level will decrease once furnished. The amount of absorption needed to reduce the internal level by 1 dB is negligible, so the internal noise level once inhabited will be within the limit.

The daytime noise level was 1dB under the limit of 35dB. Even with relatively high reverberation noise, the day time noise level has been met.

6 CONCLUSION

A verification acoustic survey has taken place at Lees St, Openshaw to discharge condition 16 of planning application 124265/FO/2019 for the erection of residential dwellings.

The results show that, when the rooms are furnished, the day and night internal noise levels with a habitable room facing Ashton Old Road will be within Council limits.



7 REFERENCES

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



Appendix

A1 AS-BUILT SITE LAYOUT

