



BRAIDEN ACOUSTICS LTD

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

RESIDENTIAL ACOUSTIC SURVEY

Prepared For : Alam Investments Ltd

Date : 18 Sep 2025

Site : 160-162 Yorkshire Street, Rochdale

Report No. : 10746revA

1 INTRODUCTION

Braiden Acoustics has been commissioned by Alam Investments Ltd to undertake an acoustic survey at the site of 160-162 Yorkshire Street, Rochdale in order to support a planning application for change of use from offices to residential.

1.1 PLANNING APPLICATION

The original report, number 10746, dated 5 Dec 2019, supported the initial planning application, number 20/00184/FUL which proposed “Change of use and conversion from offices to 21 apartments”. The Decision Notice, dated 9th July 2021, had the following noise-related Conditions:

4 The development hereby approved shall not be occupied until a scheme for mechanical ventilation and noise attenuation arrangements in accordance with the recommendations in both the approved Air Quality Assessment and the approved Residential Acoustic Survey has been submitted to and approved in writing by the Local Planning Authority.
Upon completion of the approved development including the installation of the approved scheme for ventilation and noise attenuation, and prior to first occupation of the dwellings, verification testing shall be carried out to demonstrate the required internal and external noise attenuation levels specified in the reports have been met. The test site(s) and methodology shall be representative of the site and condition and shall be submitted in writing to the Local Planning Authority and agreed prior to first occupation of the dwellings.

The approved scheme for ventilation and noise attenuation shall be maintained in good working order thereafter.

Reason: in the interest of ensuring sensitive new development, such as housing, is not adversely affected by existing sources of pollution, in accordance with the requirements of Core Strategy Policies G9 and DM1, and the National Planning Policy Framework.

Condition 4 stipulated that mechanical ventilation was required. It is not known if any such scheme was proffered. Any mechanical ventilation scheme would, itself, need to be assessed for both internal and external noise.

Unfortunately, more than three years have elapsed, so a fresh planning application is required. In addition, there has been a change to the site layout.

1.2 AIM

This Noise Impact Assessment shall be updated to reflect the change in floor layout design.

2 DESCRIPTION OF SITE

The site is the relatively recently built building called St James Place, as shown in Figure 1.



Figure 1
Proposed site street view

2.1 SITE LOCATION AND SURROUNDING AREA

The site is bounded by Yorkshire Street to the north, John Street to the west and Pagan Street to the south, as depicted Figure 2.

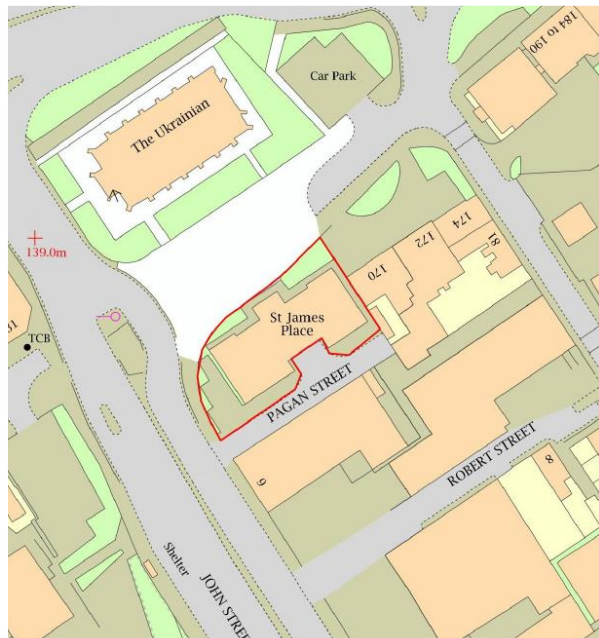


Figure 2
Site outline in red

On the other side of Yorkshire Street is the Ukrainian Church – Yorkshire Street at this point is pedestrianised (shown in off white in Figure 2). Beyond the Ukrainian Church is St Mary's Gate (A58) which is a main arterial road to Rochdale town centre. Consequently, the road has two lanes each way (four lanes in total).

On the other side of Pagan Street, to the south of the site, is Verotax House which is predominantly residential.

To the east of the site are three listed dwellings (now flats) at 170, 172 and 174 Yorkshire Street.

To the west of the site is the busy John Street which has two lanes in each direction.



2.2 PROPOSED USE

2.2.1 Original planning application

The original ground floor layout was mostly used for bin and bike storage, with one apartment.

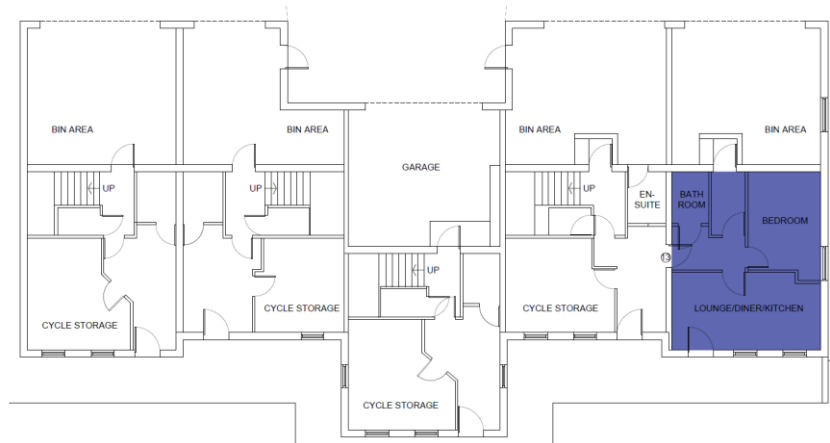


Figure 3
Original ground floor layout

The two upper floors would have had the same layout with ten apartments as depicted in Figure 4.



Figure 4
Original proposed layout of upper floor

2.2.2 New application

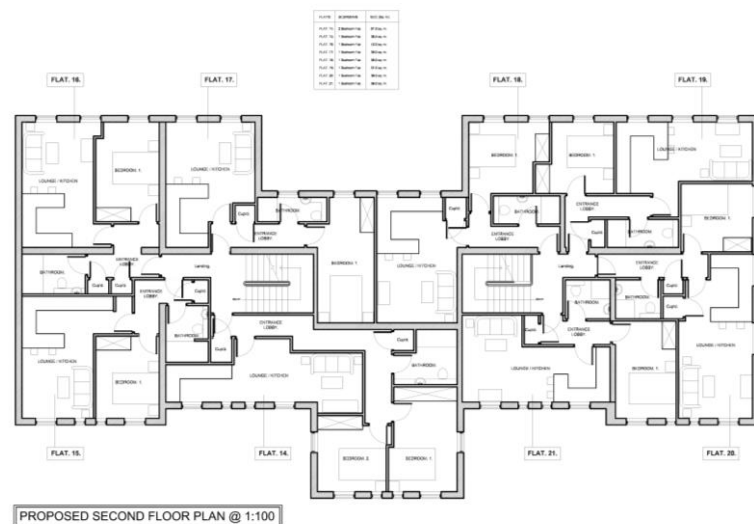
The new layout reduces the storage at ground floor level so that there can be five apartments instead of only one.





The total number of apartments is still twenty-one but the apartments are bigger as they are spread over three floors instead of two.

As before, the two upper floors are the same but there are now 8no. apartments instead of 10.



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.



3.2.3 Council criteria

This assessment will treat all living areas the same and therefore a more rigorous assessment than the Council suggests and the levels given in BS8233.

The noise criteria this assessment will follow are:

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

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

4 MONITORING DETAILS

After an initial site visit, it was deemed the overwhelming predominant noise source was road traffic noise from the surrounding road network. Therefore, overnight noise monitoring was undertaken on site to capture road traffic noise and general vehicular movements, predominantly from John Street.

4.1 VISIT ONE

4.1.1 Monitoring details

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

Weather: 8-12-°C temperature; ~5ms⁻¹ wind; ~20 -40% cloud;

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

Date & time: Fri 13/09/2019 from 16:00 for over 24 hours

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

Monitoring was unmanned with audio recorded.

NB The original noise monitoring was undertaken almost exactly five years to the day. As the original noise monitoring was pre-Covid then it is reasonable to assert that these noise levels are representative of those today.**

4.1.2 Location

The microphone was 1m from an upper floor windows facing John Street.

4.1.3 Results

Date	Time		Duration	Time Period	L _{A90} dB	L _{Aeq} dB	L _{Amax} dB
	Start	Finish					
Fri 13/09/2019	15:56:30	23:00:00	07:03:20	day	56.7	68.1	99.3
	23:00:00	07:00:00	08:00:00	night	46.1	62.8	99.4
	07:00:00	18:13:22	11:13:22	day	58.2	69.9	102.9

Table 2
Summary of facade noise monitoring results



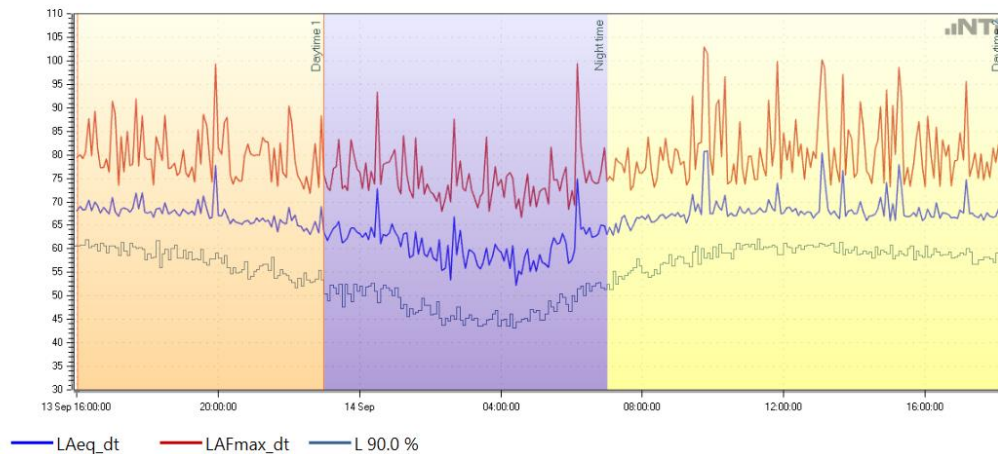


Figure 5
Time history

Noise levels at the monitoring location were primarily due to road traffic noise from John Street. This accounted for noise levels dropping during the night-time period where traffic flows were low.

5 ACOUSTIC ASSESSMENT

The required internal noise levels are given in section 3.2.3 and the amount of attenuation from the building façades were readily computed using the simple method in Appendix G of BS 8233:2014 whereby the sound insulation index (SRI) of the glazing (the weakest element of the building façade, acoustically) is determined by simply deducting the required internal noise level from the external *free field* noise level.

5.1 BS8233

5.1.1 Target internal noise levels

In order to determine the sound insulation of the building envelope the target internal noise levels of sensitive rooms must be established. BS 8233 Table 5 given guidance on typical internal values for habitable rooms equivalent noise levels

The relevant internal noise levels are summarised in Table 3.

Criterion	Room	Time period <i>T</i>	$L_{Aeq,T}$
			Reasonable
Resting conditions	Living rooms	day	35
Resting/sleeping conditions	Bedrooms	night	30

Table 3
Internal noise criteria based on BS 8233 Table 5

5.1.2 Glazing

The weakest structural element is the glazing. The required glazing was calculated using recommended internal values. The Table below shows the required Sound Reduction Indices (SRI) for the bedrooms (night) and living areas (day) on each relevant elevation.

The day and night-time noise levels are correct for the free field and shown below:

⇒ day time (07.00-23.00) L_{Aeq} is 66 dB(A)



⇒ night time (23.00-07.00) L_{Aeq} is 60 dB(A)

The same noise levels are given to each facade.

Façade	period	room	External Levels measured		Internal Levels recommended		Required glazing	
			L_{Aeq} (dB)	L_{Amax} (dB)	L_{Aeq} (dB)	L_{Amax} (dB)	SRI ($R_w + C_{tr}$)	Example spec
ALL	night	bedroom	60		30		30	10/(6-16)/4
	day	lounge	66		35		31	10/(6-16)/4

Table 4
Calculated SRI values and recommended glazing

All habitable rooms will require glazing of 10/(6-16)/4mm or better.

5.1.1 Ventilation

It is usual to open a window to aid ventilation; however, local noise sources may disturb future sleeping tenants when a window is opened. When a window is opened, the sound attenuation of the window reduces to approximately 15 dB.

This means that the bedrooms should employ alternative ‘purge’ ventilation .

5.1.1.1 Alternative ventilation

The alternative ventilation should simulate the rapid cooling provided by an open window, in other words, the ventilation unit must have a ‘boost’ function. This ventilation requirement can be achieved by whole house heat recovery systems, for example.

Airflow requirements should be checked before installation with any unit adhering to Approved Document F; ventilation advice is out of the scope of this report. Ideally, intake vents should not be mounted in the external walls but rather in the roof and not facing the noise source. If there are terminations in the exterior wall then the sound reduction values of the vent/grille must be at least as good as the glazing in that room. Furthermore, self-noise of the fan should not exceed the internal threshold noise levels in.

An in-wall mechanical vent would need to be installed on every external habitable wall to the front and side elevations. Such a unit could be the Greenwood Airvac MA 3051 which gives a significant sound reduction of 52 dB $D_{n,e,w} + C_{tr}$.



Figure 6
Exploded view of MA3051

Details on an MVHR (Mechanical Ventilation Heat Recovery) from Greenwood can be found here:



6 CONCLUSION

An acoustic survey has taken place at the 160-162 Yorkshire Street, Rochdale to support a planning application for the erection of apartment dwellings.

The layouts have been updated to reflect the revised design.

Upgraded glazing and ventilation has been recommended to habitable rooms on all elevations .

No mechanical ventilation systems has yet been proposed but it will likely to be subject to an additional noise assessment for both internal and external noise.

An alternative ventilation strategy has also been proposed for the bedrooms.

Thus, implementing the recommendations made in this report ensures that the amenity of the occupants of the proposed dwellings will be safeguarded against environmental noise.

7 REFERENCES

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



Appendix

A1 DRAWINGS



REVISIONS	
NOTES: ALL DRAWINGS ARE THE PROPERTY OF IDENTITY INTERIORDesign PARTNERSHIP. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF IDENTITY INTERIORDesign PARTNERSHIP. identityinteriordesign partnership 84 TOWN STREET - HORSFORTH - LEEDS - LS18 4AP TEL: 0113 258 0875 FAX: 0113 258 0875 E-MAIL: ID@ID.CO.UK WWW: ID.ID.CO.UK	
PROJECT: St. James Place Partnership	
CLIENT: A&B Charities	SIGNED:
DRAWING TITLE: Existing Ground, First and Second Floor Plans	
DRAWING NO. BL0000	SCALE: 1:100 @ A1
DRAWN BY: Charlotte Pitt	DATE: 01/11/08

