

8-10 Outram House Great Ancoats Street Manchester

Indoor Sound Survey Report
1239/ISSR1
Revision 1

29 May 2025

For:

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1.0 Introduction

Lighthouse Acoustics has been appointed by Domicile Construction Ltd to undertake an indoor sound survey at 8-10 Outram House, Great Ancoats Street, Manchester in order to demonstrate that the internal sound limits designed to within residential apartments are achieved.

The survey methodology, results and assessment are presented in this report.

2.0 Objectives

To visit site to undertake a detailed indoor sound survey in order to establish indoor daytime and night-time sound levels within the worst affected residential apartments.

To compare the measured indoor daytime and night-time sound levels to the internal sound limits for residential apartments and comment on the acceptability.

3.0 Site Description

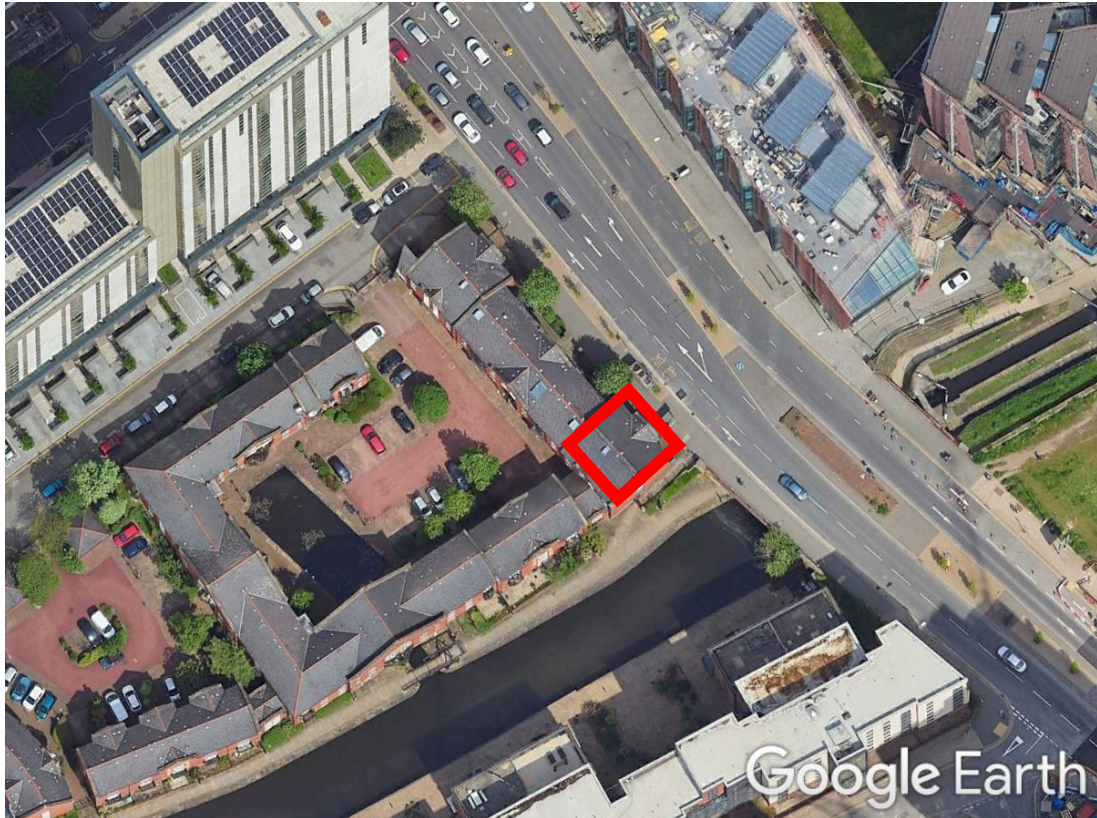
The residential development is at 8-10 Outram House, Great Ancoats Street, Manchester. The site comprises an existing 4 storey development with 1No. residential apartment at lower ground floor and 2No. residential apartments at upper ground floor.

The site is bound by Great Ancoats Street (A665) to the north east, Ashton Canal to the south east and adjoining buildings to the south west and north west.

All apartments feature a mechanical ventilation system that provides ventilation to the apartments without the need for trickle ventilators or open windows.

The worst affected apartments are the 2No. residential apartments at upper ground floor which are situated at street level with line of sight to Great Ancoats Street (A665).

The site plan overleaf indicates the extent of the site and the surrounding environment.



Site plan indicating the extent of the site and the surrounding environment

4.0 Acoustic Requirements

The internal sound limits for residential apartments required by Manchester City Council are detailed in the table below.

Room Type	07:00 to 23:00	23:00 to 07:00
Living Room	35dB $L_{Aeq,16hour}$	-
Bedroom	35dB $L_{Aeq,16hour}$	30dB $L_{Aeq,8hour}$ 45dB $L_{Amax,F}^*$

* Individual noise events should not normally exceed 45dB $L_{Amax,F}$ by more than 15 times.

5.0 External Sound Break-In Survey

5.1 Measurements

Automated indoor sound measurements were undertaken from 10:00 hours on Monday 28 April 2025 to 10:00 hours on Tuesday 29 April 2025. During these periods the $L_{Amax,F}$ and L_{Aeq} sound pressure levels were measured continuously over 15 minute periods.

In addition, the sound level meters were set to log the number of events exceeding $L_{Amax,F}$ 45dB during the night-time periods (23:00 to 07:00 hours).

Windows and doors were closed and the mechanical ventilation units were operational for the duration of the survey period whilst all rooms were fully furnished.

5.2 Weather Conditions

At the start of the survey period there was a light southerly breeze (<3m/s) and the sky was scattered cloud. There was no rainfall and road surfaces were dry. The temperature was approximately 14°C.

At the end of the survey period there was a light southerly breeze (<3m/s) and the sky was scattered cloud. There was no rainfall and road surfaces were dry. The temperature was approximately 19°C.

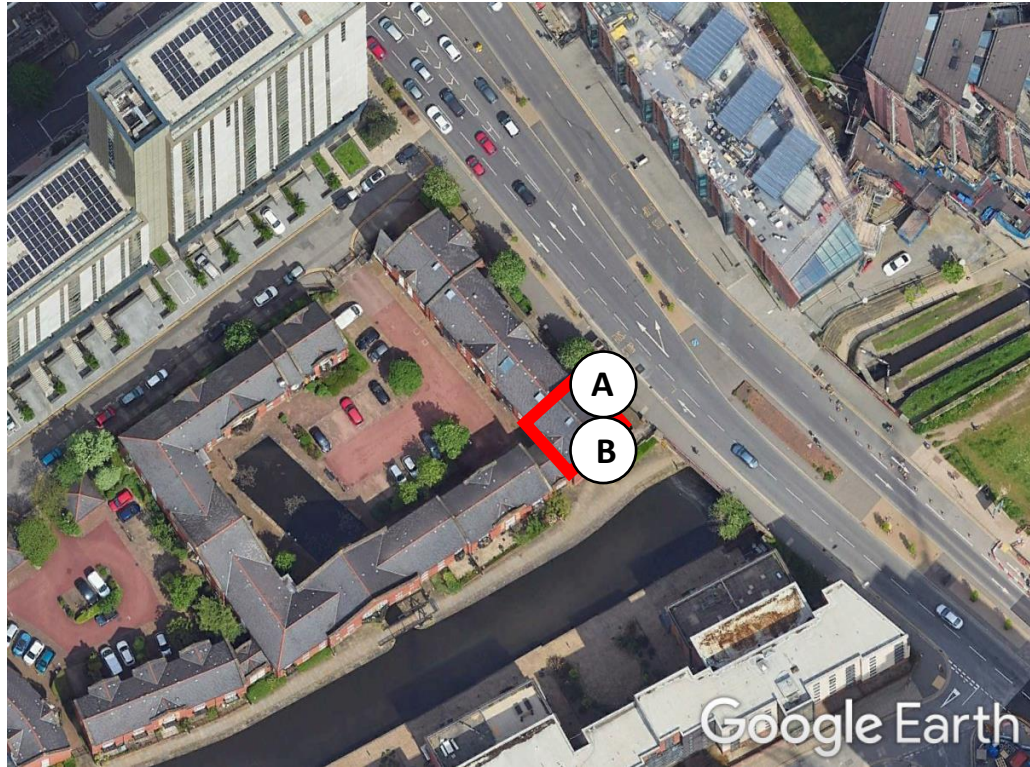
Based on publicly available weather data for the survey periods it is understood that weather conditions remained similar for the duration of the surveys with no significant periods of rainfall or strong breezes. The weather conditions during the survey periods are therefore considered to be suitable for undertaking measurements of sound levels.

5.3 Measurement Positions

Indoor sound levels were measured within the worst affected 2No. apartments on-site as described in the table below.

Position	Description
A	Microphone situated in upper ground floor Apartment 8 Bedroom with window in the north east façade overlooking Great Ancoats Street in the centre of the room at 1.2m above floor level.
B	Microphone situated in upper ground floor Apartment 10 Living Room with window in the south east façade overlooking Ashton Canal in the centre of the room at 1.2m above floor level.

The measurement positions are shown on the site plan below.



Site plan showing measurement positions

The measurement positions were selected in order to assess typical indoor sound levels in apartments on the two worst affected facades of the building.

5.4 Equipment

The following equipment was used to undertake the indoor sound survey.

Equipment	Manufacturer	Model	Serial No.	Calibration Date
Class 1 Sound Level Meter	Casella	633C	0721320	07/11/2023
Preamplifier	Casella	495	001414	07/11/2023
Microphone	Casella	251	1025	07/11/2023
Class 1 Sound Level Meter	Casella	633C	0721319	07/11/2023
Preamplifier	Casella	495	001446	07/11/2023
Microphone	Casella	251	1996	07/11/2023
Class 1 Sound Calibrator	Casella	120/1	3864878	31/10/2024

Field calibration checks were performed on the sound level meters prior to and on completion of the survey and were found to be within acceptable tolerance limits.

5.5 Results

5.5.1 $L_{Aeq,T}$ Ambient Sound Levels

In order to compare the results of the indoor sound survey with the internal noise limits it is necessary to convert the $L_{Aeq,15min}$ indoor sound levels into single figure daytime $L_{Aeq,16hour}$ and night-time $L_{Aeq,8hour}$ sound levels. This has been calculated using the following formula:

$$L_{Aeq,T} = 10 \log_{10} \left(\frac{1}{N} \sum_i^N 10^{L_{Aeq,15min,i}/10} \right)$$

The calculated daytime $L_{Aeq,16hour}$ and night-time $L_{Aeq,8hour}$ indoor sound levels at each measurement position are presented in the table below.

Position A		Position B*	
Daytime $L_{Aeq,16hour}$ (dB)	Night-time $L_{Aeq,8hour}$ (dB)	Daytime $L_{Aeq,16hour}$ (dB)	Night-time $L_{Aeq,8hour}$ (dB)
30	27	35	32

* Position in living room so night-time requirement is not applicable.

5.5.2 $L_{Amax,F}$ Sound Level Events

The number of events exceeding $L_{Amax,F}$ 45dB during the night-time period (23:00 to 07:00 hours) at each position are detailed in the table below.

No. of Events Exceeding $L_{Amax,F}$ 45dB During the Night-time Period	
Position A	Position B*
4	7

* Position in living room so night-time requirement is not applicable.

5.6 Discussion of Results

The measured daytime $L_{Aeq,16hour}$ indoor sound level due to external sound break-in achieves the internal sound limit of $L_{Aeq,16hour}$ 35dB for bedrooms at Position A.

The measured night-time $L_{Aeq,8hour}$ indoor sound level due to external sound break-in achieves the internal sound limit of $L_{Aeq,8hour}$ 30dB for bedrooms at Position A.

The measured number of events exceeding the internal sound limit of $L_{Amax,F}$ 45dB during the night-time period for bedrooms due to external sound break-in achieve the limit of 15 events in any night-time period at Position A.

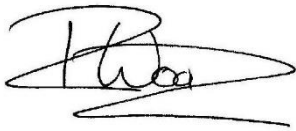
The measured daytime $L_{Aeq,16hour}$ indoor sound level due to external sound break-in achieves the internal sound limit of $L_{Aeq,16hour}$ 35dB for living rooms at Position B.

Based on the above, the internal sound limits for residential apartments required by Manchester City Council are achieved due to external sound break-in.

6.0 Conclusions

A detailed indoor sound survey has been undertaken in order to establish indoor daytime and night-time sound levels within the worst affected residential apartments.

The measured indoor daytime and night-time sound levels have been found to comply with the internal sound limits for residential apartments required by Manchester City Council.

A handwritten signature in black ink, appearing to read 'Robin Wood', with a stylized flourish underneath.

Robin Wood
LIGHTHOUSE ACOUSTICS