

Ref: 1398/le/03

24 April 2025

Ahmed Zahid



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Dear Ahmed

5-7 WILBRAHAM ROAD, MANCHESTER ACOUSTIC CONSULTANCY SERVICES

Further to our review we are pleased to present our findings as detailed below.

1.0 Introduction

It is understood that the existing 1st and 2nd floor vacant space is proposed to be converted to form residential flats.

Lighthouse Acoustics has subsequently been appointed to undertake a desktop assessment of airborne sound insulation between the existing ground floor restaurant and proposed first floor residential flats and to undertake a desktop assessment of internal noise transfer from the proposed MVHR units to internal spaces based on information received.

The assessments are presented in this report.

2.0 Objectives

To undertake a desktop assessment of airborne sound insulation between the existing ground floor restaurant and proposed 1st floor residential flats based on information received and to advise on additional treatment where required in order to maximise the level of airborne sound insulation.

To undertake a desktop assessment of internal noise transfer from the proposed MVHR units to internal spaces based on information received and to propose mitigation measures where required in order to achieve acceptable levels.

3.0 Site Description

The proposed residential development is at 5-7 Wilbraham Road, Manchester and comprises an existing 3 storey detached building. The 1st and 2nd floors are currently vacant space whilst the ground floor is a restaurant.

4.0 Separating Floor Assessment

4.1 Requirements

Building Regulations Approved Document E 2010, "Resistance to the passage of sound", provides performance standards for separating walls, separating floors and stairs that have a separating function. The table below presents the performance standards for flats formed by material change of use.

Flats formed by material change of use	Airborne sound insulation $D_{nT,w} + C_{tr}$ dB (Minimum values)	Impact sound insulation $L'_{nT,w}$ dB (Maximum values)
Walls	43	-
Floors and stairs	43	64

In addition, Building Regulations Approved Document E 2010 states the following with regard to communal or non-domestic spaces:

"The performance standards set out in Tables 1a and 1b are appropriate for walls, floors and stairs that separate spaces used for normal domestic purposes. A higher standard of sound insulation may be required between spaces used for normal domestic purposes and communal or non-domestic purposes. In these situations the appropriate level of sound insulation will depend on the noise generated in the communal or non-domestic space. Specialist advice may be needed to establish if a higher standard of sound insulation is required and, if so, to determine the appropriate level."

The current uses of the ground floor space is a restaurant and as such the performance standards for normal domestic purposes may need to be increased.

BS8233:2014 "Guidance on sound insulation and noise reduction for buildings" contains "Examples of design criteria adopted by hotel groups" in Annex H. Between a bedroom and a restaurant/bar within the same hotel a sound insulation performance of $D_{nT,w}$ 60dB (approx. $D_{nT,w} + C_{tr}$ 52dB) is recommended.

The impact sound insulation requirement is not applicable to the ground floor restaurant.

4.2 Sound Insulation Test

It is understood that the existing 1st floor comprises a section of timber construction on the left hand side of the building and a section of concrete construction on the right hand side of the building.

The Sound Insulation Test Report produced by Martec Environmental Consultants Ltd, Ref: 20220525 9203, dated 25 May 2022 details the sound insulation testing of the timber section of the existing 1st floor construction. The report states that large areas of both the timber and concrete constructions were missing. As such, the testing was not fully representative of the overall floor construction once made good.

The result of the airborne sound insulation test is presented in the following table.

Source Room	Receive Room	Measured Airborne Sound Insulation	
		$D_{nT,w}$ dB	$D_{nT,w} + C_{tr}$ dB
GF Restaurant LH side	FF Level LH side	38	34

4.3 Discussion

The result of the sound insulation test indicates that the existing separating floor construction falls short of providing a suitable level of sound insulation between the existing ground floor restaurant and the proposed 1st floor flats.

As such, mitigation measures are proposed in order to maximise the level of airborne sound insulation provided by the existing separating floor constructions.

4.4 Mitigation Measures

It is understood that the existing 1st floor comprises the following constructions:

Left Hand Side

- Timber boarding;
- Timber joists;
- Plasterboard ceiling.

Right Hand Side

- ~150mm concrete slab;
- ~400mm ceiling void;
- Suspended ceiling.

In order to maximise the level of airborne sound insulation between the existing ground floor restaurant and the proposed 1st floor flats the following treatment is proposed:

Left Hand Side

- 1No. layer timber board (min. 10kg/m²);
- 70mm (min.) deep resilient timber battens (min. ΔL_w 17dB);
- 25mm (min.) mineral wool (min. 10kg/m³) between battens;
- New timber boarding installed (min. 20kg/m²) and sealed with mastic at the junction with external/internal walls;
- 150mm insulation inserted between existing timber joists (min. 16kg/m³).

Right Hand Side

- 1No. layer timber board (min. 10kg/m²);
- 70mm (min.) deep resilient timber battens (min. ΔL_w 17dB);
- 25mm (min.) mineral wool (min. 10kg/m³) between battens;
- Holes/gaps in existing concrete slab made good with concrete to at least the same depth as existing.

The timber board and batten floating floor must be installed per flat, must not be bridged at the perimeter with the surrounding walls/skirting (i.e. use resilient flanking strips) and should be installed in accordance with the manufacturer's guidance. Separating walls must not be built off the floating floor.

The attached existing and proposed floor drawings detail the floor constructions detailed above.

The proposed floor constructions are likely to achieve the proposed target sound insulation performance of $D_{nT,w}$ 60dB (approx. $D_{nT,w} + C_{tr}$ 52dB) with a high standard of workmanship and suitable flanking details.

A site visit should be arranged once works begin to undertake an inspection.

5.0 MVHR Unit Assessment**5.1 Acoustic Requirements**

The Road Traffic Noise Assessment Report produced by Martec Environmental Consultants Ltd, Ref: 20220203 9203, dated 2 March 2022 states internal noise limits to be achieved within residential properties.

Based on this the ventilation system should achieve noise levels of $L_{Aeq} \leq 30$ dB in bedrooms and $L_{Aeq} \leq 35$ dB in living rooms where providing continuous background ventilation.

5.2 Ventilation Proposals

The assessment has been based on the following drawings.

Author	Drawing No.	Revision	Date
Viridian Consulting Engineers Ltd	22686(50)100	P1	-
	22686(50)200	P1	-

The proposals include an MVHR unit (Nuair MRXBOX-ECO3) serving flats 1, 3, 4, 5, 7 & 8 with Intake and Exhaust air ducted to air bricks in the facade. It is understood that the use of an MVHR unit negates the need for trickle ventilators in the façade of the rooms. The MVHR units are situated in a cupboard within each flat.

It is understood that the MVHR units operate at 50% (Curve 3) for background ventilation.

5.3 Mitigation Measures

Based on the manufacturers noise data it is recommended that the following attenuation measures are implemented in order to achieve the requirements of the Local Authority.

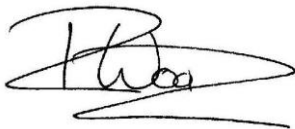
Inlet/Outlet	Attenuation Measure
Intake	Manufacturers PVCSIL-500 (204mm x 60mm) or equal approved attenuators
Supply	Manufacturers PVCSIL-1500 (204mm x 60mm) or equal approved attenuators
Extract	Manufacturers PVCSIL-1000 (204mm x 60mm) or equal approved attenuators
Exhaust	Manufacturers PVCSIL-500 (204mm x 60mm) or equal approved attenuators
Casing	Cupboard door to the MVHR units is well fitting with seals to the perimeter

6.0 Conclusions

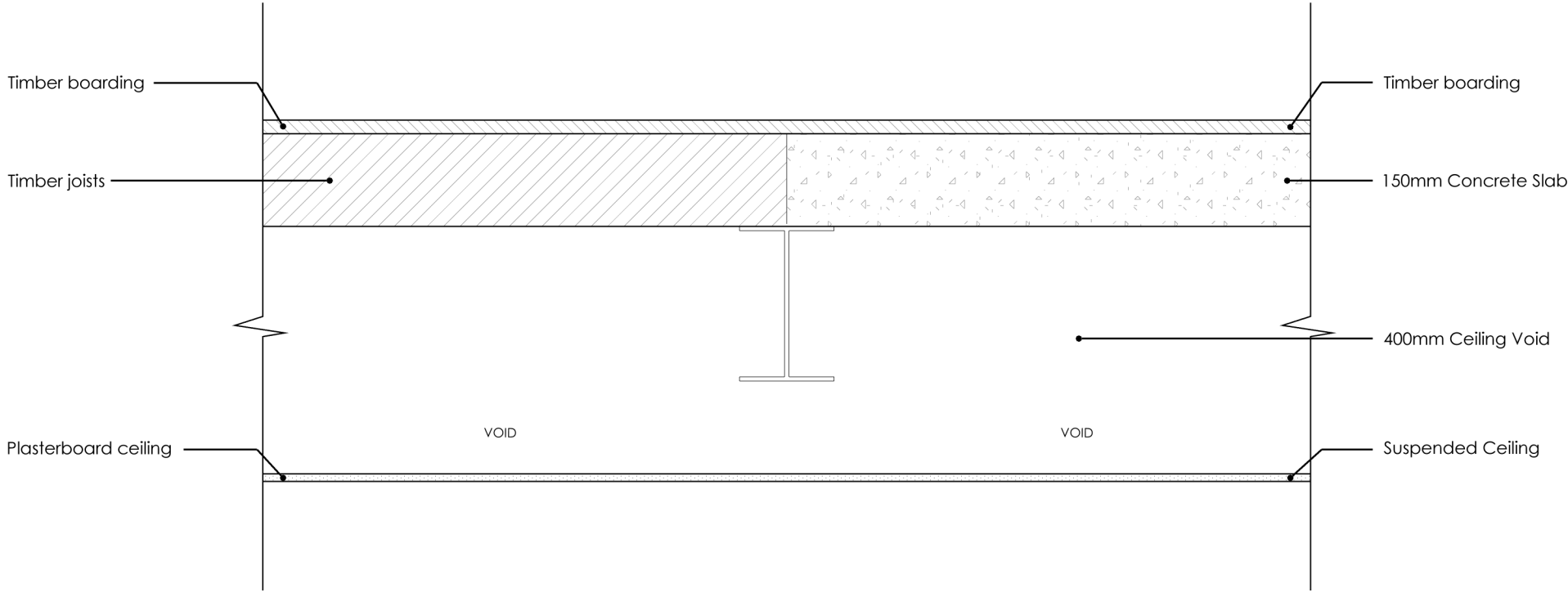
A desktop assessment of airborne sound insulation between the existing ground floor restaurant and proposed 1st floor residential flats has been undertaken and additional treatment has been proposed in order to maximise the level of airborne sound insulation provided by the existing separating floor constructions.

A desktop assessment of internal noise transfer from the proposed MVHR units to internal spaces has been undertaken and mitigation measures have been proposed in order to achieve acceptable levels.

Yours sincerely
for LIGHTHOUSE ACOUSTICS



Robin Wood



GENERAL NOTES
Do not scale from drawing. Use marked dimensions.
To be read in conjunction with all other Consultant's drawings.

The Architect to be immediately notified of any discrepancies.

Copyright on this drawing retained by the Architect.

B1 28/03/2025 SA SH Initial Issue
No. Date Dwn Chk App Revision or reason for issue

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Project Title
5-7 Wilbraham Rd,
Fallowfield, M14 6JS

Scale / North Point
Scale 1:10

Drawing Title
EXISTING INTERMEDIATE FLOOR

Drawing Number
E-1
Drawing Status
Construction
Revision
B1

The timber board and batten floating floor must be installed per flat, must not be bridged at the perimeter with the surrounding walls/skirting (i.e. use resilient flanking strips) and should be installed in accordance with the manufacturer's guidance. Separating walls must not be built off the floating floor.

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Scale 1:10

Drawing Title
PROPOSED INTERMEDIATE FLOOR

Drawing Number
P-1
Drawing Status
Construction
Revision
B1

