
577-579 Wilbraham Road, Chorlton Noise Validation Report



Project: 577-579 Wilbraham Road, Chorlton (Kemps Corner)

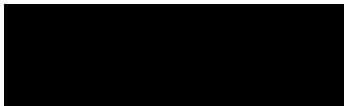
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Authorised by	Ryan Swales, BSc, MIOA Director & Principal Consultant
Signature	

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RS Acoustic Engineering Ltd
76 Marple Road
Stockport
SK2 5QH
Web: www.rsacoustic.co.uk
Email: info@rs-acoustic.co.uk

A company registered in England & Wales (No: 07604309)
Corporate Member of the Institute of Acoustics (MIOA)

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1. Introduction

- 1.1 RS Acoustic Engineering Ltd has been appointed by Nota Construction to undertake a noise survey and provide a validation report with regard to a new residential development at No.577-579 Wilbraham Road, Chorlton, Manchester, M21.
- 1.2 The existing property known as Kemps Corner has been refurbished and extended to provide six self-contained apartments split over the first and second floor. The ground floor of the property is to be used for commercial/retail use.
- 1.3 Planning permission was granted for the development in September 2023, subject to several conditions. There is a noise related planning condition which states that a noise validation survey and report need to be submitted to the Local Planning Authority prior to the occupation of the apartments.
- 1.4 Continuous sound level monitoring was conducted in September 2025 within a fully complete apartment. Measurements were conducted within a second-floor lounge/kitchen and also within a bedroom on the east facing elevation overlooking Barlow Moor Road.
- 1.5 The dominant source of noise at the site is road traffic on Barlow Moor Road and Wilbraham Road. There was on-going construction work at the time of the survey, however the works did not adversely affect the measurements conducted.
- 1.6 The survey and assessment were conducted by Mr Ryan Swales (BSc(Hons), MIOA), Principal Acoustic Consultant and Member of the Institute of Acoustics.
- 1.7 The results of the noise survey have been presented, along with a discussion of the results with respect to the appropriate planning condition and acoustic performance targets.

2. Assessment Guidance & Design Criteria

Manchester City Council Planning Conditions

2.1 Manchester City Council granted full planning permission for the development subject to several conditions (ref: 137425/FO/2023).

2.2 With regard to noise, the following condition was stipulated:

8b). Prior to first occupation of the residential units, a verification report shall be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report. The report shall also undertake post completion testing to confirm that the internal noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the internal noise criteria.

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

British Standard 8233:2014: Guidance on sound insulation and noise reduction for buildings

2.3 BS 8233 provides guidance regarding acoustic criteria and noise levels appropriate for various types of space that have different functions.

2.4 With regard to dwellings, appropriate internal ambient sound levels are given in Table 2.1 for bedrooms, living rooms and dining rooms. The guidelines take into consideration the effect of internal noise on sleep and also the effect of noise on resting, listening and communicating.

Table 2.1 - Indoor ambient noise levels for dwellings

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB $L_{Aeq,16hour}$	---
Dining	Dining room/area	40 dB $L_{Aeq,16hour}$	---
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$

2.5 BS 8233 (Note 7) also suggests that in some circumstances, it is appropriate to relax the indoor ambient noise level targets by up to 5 dB:

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.

World Health Organisation: Guidelines for community noise (1999)

2.6 The guidelines and corresponding sound level targets within this historical document corroborate those given within BS 8233:2014. The guideline values are to help avoid speech interference, annoyance and sleep disturbance within dwellings.

2.7 With regard to sleep disturbance and maximum L_{AFmax} sound levels, the study undertaken by Vallet & Vernet (1991) suggests that for good sleep, indoor sound pressure levels should not exceed approximately 45 dB L_{Amax} more than 10-15 times per night.

Professional Practice Guidance on Planning & Noise (2017)

- 2.8 Professional Practice Guidance on Planning and Noise (ProPG) has been produced in order to provide practitioners with guidance on a recommended approach to the management of noise within the planning system in England.
- 2.9 The NPPF encourages improved standards of design. This guidance document encourages better acoustic design for new residential development and aims to protect people from the harmful effects of noise.
- 2.10 The scope of ProPG is restricted to the consideration of new residential development that will be exposed predominantly to airborne noise from transportation sources.
- 2.11 The recommended ProPG internal noise level guidelines are presented in Table 2.2. The guidelines reflect and extend current practice contained within BS 8233:2014.

Table 2.2 - ProPG internal noise level guidelines

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB $L_{Aeq,16hour}$	---
Dining	Dining room/area	40 dB $L_{Aeq,16hour}$	---
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$ 45 dB $L_{Amax,F}$

3. Internal Noise Survey

Survey methodology

- 3.1 Continuous sound level monitoring was conducted over a 22-hour period within the second-floor lounge/kitchen of flat 6 on the east facing elevation. The lounge/kitchen is located within the new extension.
- 3.2 Measurements were performed from 14:00 hours on Tuesday 16th through to 12:00 hours on Wednesday 17th September 2025.
- 3.3 Continuous sound level monitoring was also conducted over a 22-hour period within the second-floor master bedroom on the same elevation overlooking Barlow Moor Road. Measurements were again performed from 14:00 hours on Tuesday 16th through to 12:00 hours on Wednesday 17th September 2025.
- 3.4 All windows were closed during the survey and the mechanical ventilation system was fully operational. Subjectively, the noise ingress via the glazed units was relatively low.
- 3.5 The survey measurement positions are shown in Figure 3.1 to Figure 3.3. The measurement rooms and survey equipment are shown in the photographs overleaf.

Figure 3.1 - Second floor layout showing survey measurement positions

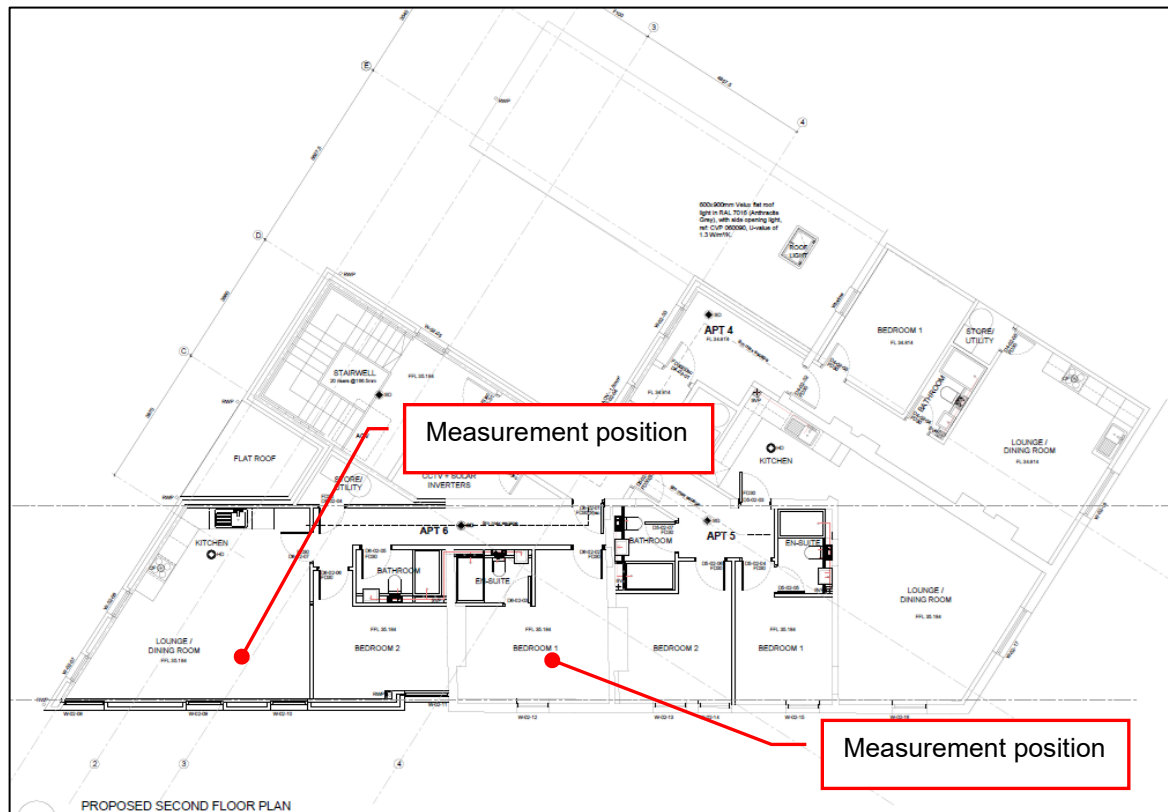


Figure 3.2 - East facing elevation showing measurement positions

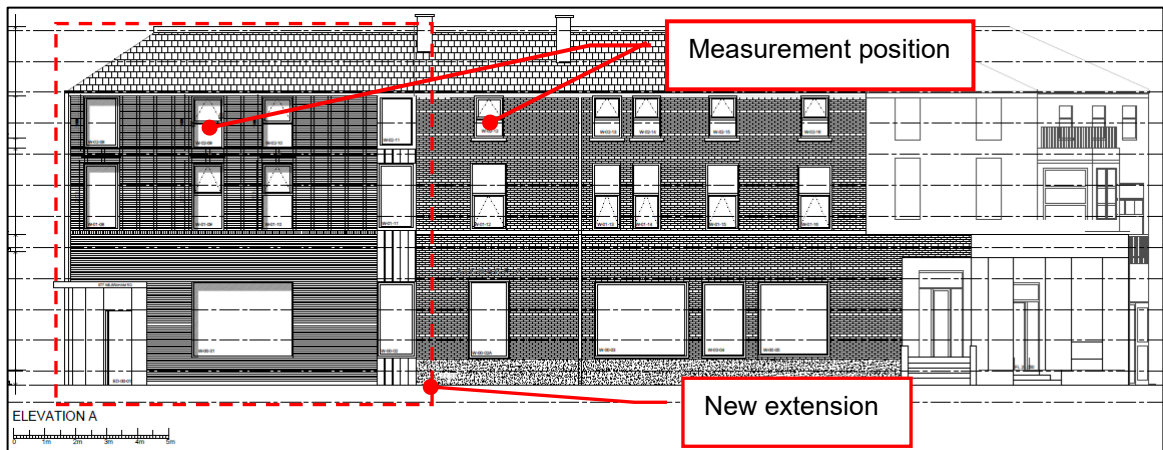


Figure 3.3 - Photographs showing measurement rooms and survey equipment



Survey equipment

- 3.6 The survey was conducted using the following Class-1 specification equipment:
- Brüel & Kjaer 2250 sound level meter, microphone type 4189, preamplifier type ZC0032.
 - Brüel & Kjaer 2260 sound level meter, microphone type 4189, preamplifier type ZC0032.
 - CEL-120/1 Acoustic calibrator.
- 3.7 Calibration of the sound level meter and microphone used for the measurements are traceable to UKAS accredited laboratories (calibration certificates can be provided upon request).
- 3.8 The calibration of both sound level meter and microphone was checked using a 1 kHz tone at 94 dB prior to and following the measurements performed. Calibration drift was less than 0.1 dB.

Measured indices

- 3.9 Although a wide range of statistical sound level data was recorded during the survey, the L_{Aeq} and L_{AFmax} indices are of most interest in this instance:
- $L_{Aeq,T}$ - The A-weighted equivalent continuous sound pressure level over a period of time, T. Representative of the 'average' sound pressure level over a given period (commonly used to describe the 'ambient' sound level).
 - $L_{AFmax,T}$ - The A-weighted 'maximum' sound pressure level that occurred during a given period, T (commonly used for the assessment of occasional loud noises).
- 3.10 Sound pressure level measurements are taken with an A-weighting (denoted by a subscript 'A', e.g. L_{Aeq}) to approximate the frequency response of the human ear.
- 3.11 Further information regarding the basic quantities used for the description of noise in community environments can be found within BS 7445-1:2003.

Results summary

- 3.12 Table 3.1 presents the survey results for the lounge/kitchen of flat 6. Measured values have been rounded to the nearest whole number.

Table 3.1 - Summary of measured ambient sound pressure levels, lounge/kitchen

Date	Period	Duration, T (hours)	$L_{Aeq,T}$ dB	10 th highest ¹ $L_{AFmax,T}$ dB
Tuesday 16/09/2025 to Wednesday 17/09/2025	Daytime (07:00-23:00)	14	35	---
	Night-time (23:00-07:00)	8	30	45
¹ The 10 th highest measured value (indoor sound levels should ideally not exceed 45 dB L_{Amax} more than 10-15 times per night within bedrooms) ---Daytime values are not presented since there is no daytime L_{AFmax} criterion.				

- 3.13 Within the lounge/kitchen the daytime sound pressure level was 35 dB $L_{Aeq,14hour}$ and the night-time sound pressure level was 30 dB $L_{Aeq,8hour}$.
- 3.14 Table 3.2 presents the survey results for the master bedroom of flat 6. Measured values have again been rounded to the nearest whole number.

Table 3.2 - Summary of measured ambient sound pressure levels, bedroom

Date	Period	Duration, T (hours)	$L_{Aeq,T}$ dB	10 th highest ¹ $L_{AFmax,T}$ dB
Tuesday 16/09/2025 to Wednesday 17/09/2025	Daytime (07:00-23:00)	14	34	---
	Night-time (23:00-07:00)	8	29	45
¹ The 10 th highest measured value (indoor sound levels should ideally not exceed 45 dB L_{Amax} more than 10-15 times per night within bedrooms) ---Daytime values are not presented since there is no daytime L_{AFmax} criterion.				

- 3.15 Within the bedroom the daytime sound pressure level was 34 dB $L_{Aeq,14hour}$ and the night-time sound pressure level was 29 dB $L_{Aeq,8hour}$.
- 3.16 The daytime sound level target of 35 dB $L_{Aeq,16hour}$ for living rooms/lounges and bedrooms is therefore being achieved.

- 3.17 The night-time sound level targets of 30 dB $L_{Aeq,8hour}$ and 45 dB $L_{AFmax,T}$ for bedrooms are also being achieved.
- 3.18 The measured sound pressure levels are presented graphically in Figure 3.4 and Figure 3.5.

Figure 3.4 - Graph showing measured ambient sound pressure levels, lounge/kitchen

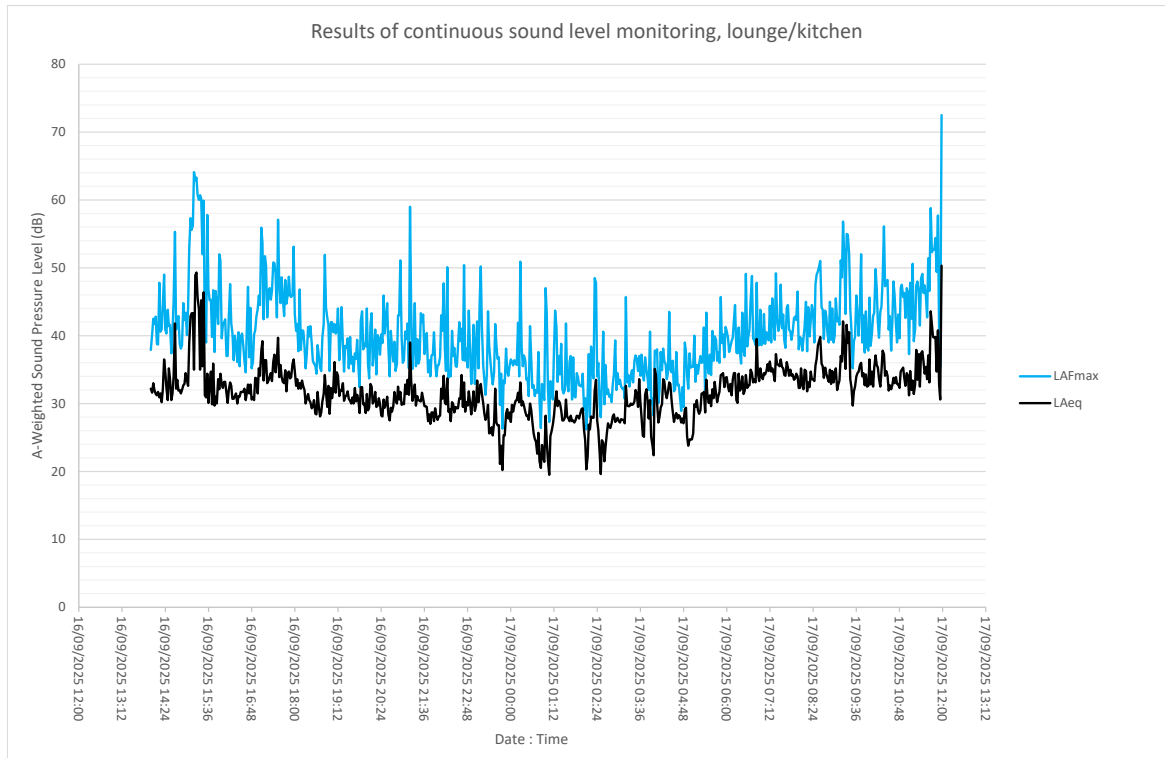
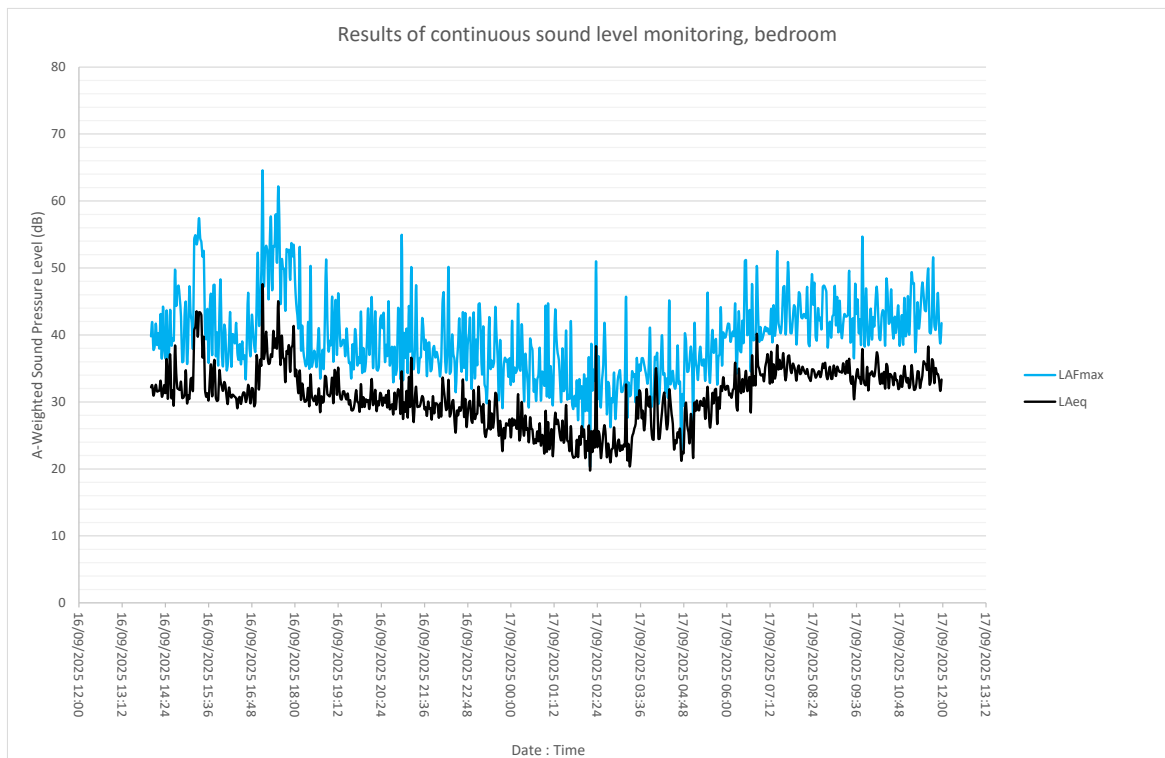


Figure 3.5 - Graph showing measured ambient sound pressure levels, bedroom



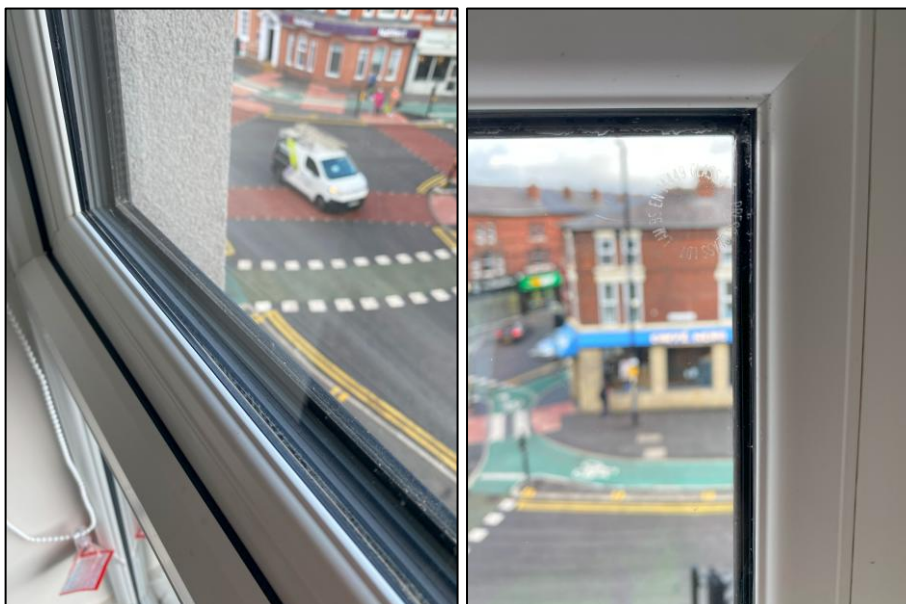
4. Building Envelope Construction & Ventilation

- 4.1 The external walls to the existing building are of a traditional double-leaf brickwork construction. The sound insulation performance is estimated to be approximately 50 to 60 dB R_w .
- 4.2 The external walls to the new extension consist of a brickwork/cavity/blockwork construction. The sound insulation performance is estimated to be approximately 50 to 60 dB R_w .
- 4.3 The roof and ceiling construction consists of a pitched tiled roof, loft insulation and plasterboard ceiling. The roof and ceiling combination is estimated to provide a sound insulation performance of approximately 40 to 50 dB R_w .
- 4.4 The original sash windows were single glazed, approximately 4 mm thick with timber frames.
- 4.5 The original windows and frames have been replaced with laminated double-glazing set in uPVC frames. The sound insulation performance is estimated to be approximately 38 to 41 dB R_w .

Figure 4.1 - Photographs showing existing building and new extension



Figure 4.2 - Photographs showing new laminated glazing and uPVC frames



- 4.6 Ventilation was previously provided to habitable rooms via opening the sash windows.
- 4.7 Ventilation of the apartments is now achieved via a Nuaire mechanical ventilation with heat recovery system (MVHR). The heat recovery fan unit is located within the store cupboard of each apartment and air is distributed via a flat duct system positioned within the ceiling void.
- 4.8 There are also supplementary frame-mounted trickle vents which can be operated manually and independently of the MVHR system.
- 4.9 Air extract points are provided to the kitchen and bathroom and a fresh air supply is provided to the bedrooms and living spaces. The ventilation system is designed to operate on a continuous trickle ventilation basis with the facility to boost the ventilation rate. Purge ventilation can be provided by opening windows.

Figure 4.3 - Photographs showing MVHR fan unit and bedroom air supply valve



- 4.10 The glazing and ventilation system are therefore in accordance with the recommendations given within the acoustic report dated December 2023 (ref: RSA447/2023).

5. Conclusion

- 5.1 Continuous sound level monitoring has been conducted within a fully complete second floor apartment.
- 5.2 The daytime and night-time sound level targets have been achieved within two habitable rooms with the windows closed and the ventilation system operating.
- 5.3 The survey results indicate that the building envelope construction and glazed units provide sufficient sound insulation.
- 5.4 The MVHR system provides sufficient ventilation rates and will enable the future occupants to leave windows closed if required (e.g. during noisy periods).
- 5.5 The noise related planning condition stipulated by Manchester City Council has been satisfied in this instance.

Appendix A

Assessment terminology

Assessment terminology

Term	Description
dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure ($2 \times 10^{-5} \text{Pa}$).
dB(A)	The most widely used weighting mechanism that best corresponds to the response of the human ear is the 'A'-weighting scale. This is widely used for environmental noise measurement, and the levels are denoted as dB(A) or L_{Aeq} , L_{A90} etc, according to the parameter being measured.
Acoustic environment	Sound from all sources as modified by the environment.
Ambient sound level	The totally encompassing sound in a given situation at a given time; it is usually composed of sound from many sources, near and far.
Equivalent continuous sound level - $L_{Aeq,T}$	The A-weighted equivalent continuous sound pressure level over a period of time, T. Representative of the 'average' sound pressure level over a given period (commonly used to describe the 'ambient' sound level).
Maximum sound level - $L_{AFmax,T}$	The A-weighted 'maximum' sound pressure level that occurred during a given period, T (commonly used for the assessment of intermittent and transient loud noises).
Habitable room	Any room used or intended to be used for sleeping, cooking, living or eating purposes (enclosed spaces such as bath or toilet facilities, service rooms, corridors, laundries, hallways, utility rooms or similar spaces are excluded from this definition).
R_w	The weighted sound reduction index expressed in dB. A single number quantity for airborne sound insulation rating.