
Our Reference: NIA/1376/25/441/v1.0/121 Drake Street, Rochdale

12th May 2025

Mr Belal Rashid
Belal Rashid Technical Architecture
11 Queen Street
Oldham
OL1 1RD



Dear Sir,

NOISE IMPACT ASSESSMENT

CHANGE OF USE FROM COMMERCIAL PREMISES (USE CLASS E) TO A SELF-CONTAINED FLAT (USE CLASS C3) AT FIRST FLOOR AND AN OFFICE SPACE (USE CLASS E) AT GROUND FLOOR

121 DRAKE STREET, ROCHDALE, OL16 1PZ

ROCHDALE BOROUGH COUNCIL 25/00330/FUL

1.00 INTRODUCTION

1.01 RP Acoustics Limited has been commissioned by Mr Seraj Ahmed Khan to carry out a noise impact assessment for the change of use from commercial premises (Use Class E) to a self-contained flat at first floor and an office space (Use Class E) at ground floor at 121 Drake Street, Rochdale, OL16 1PZ (hereafter referred to as the application site).

1.02 The objectives of the noise assessment were to:

- Determine the ambient and maximum noise levels at the application site
- If required, specify the mitigation measures required to protect residential amenity in accordance with noise related guidelines and standards

1.03 This report sets out the methodology and findings of the noise assessment. It has been prepared on behalf of Mr Seraj Ahmed Khan for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Mr Seraj Ahmed Khan (the applicant), Belal Rashid Technical Architecture (the applicant's agent) and RP Acoustics Limited as to the extent to which the findings may be appropriate for their use.

1.04 A glossary of acoustic terms is contained in Appendix 1 for reference.

2.00 APPLICATION SITE SETTING AND PROPOSED DEVELOPMENT

2.01 The application site is located in a mixed commercial and residential area to the south of Rochdale town centre. The application site location plan is reproduced in Appendix 2 for reference.

2.02 The proposed redevelopment consists of the change of use to a self-contained flat at first floor with the ground floor changing from a former dental practice to an office. The proposed floor plans are contained in Appendix 3 for reference.

2.03 The principal noise source is Drake Street traffic at the front façade and occasional noise (albeit at relatively low levels) from St John's Primary School (with MUGA) at the rear façade.

3.00 BASELINE NOISE SURVEY

- 3.01 A baseline noise survey was carried out on Friday 9th May 2025.
- 3.02 For the purpose of the survey, the following noise monitoring positions were adopted (see Appendix 4):
- NMP1 was at first floor level at the front façade overlooking Drake Street
 - NMP2 was at first floor level at the rear façade overlooking the school (circa 30 metres to the school's MUGA)
- 3.03 Baseline noise measurements were undertaken using NTi Audio XL2 Type 1 integrating sound level meters. A 90 mm windshield was fitted for all measurements. The measurement system calibration was verified immediately before and after measurement sessions and no drift in calibration level was noted (calibration certificates reproduced in Appendix 5 for reference). Weather conditions throughout the survey were appropriate for monitoring.
- 3.04 Baseline noise measurements consisted of A-weighted broadband parameters, together with linear one-third octave band L_{eq} levels, with a logging interval of 1 second. The following table contains a summary of the data rounded to the nearest decibel (and includes a – 3 decibel façade enhancement correction in order to ascertain free field noise levels).

Table 3.1 – Baseline Noise Measurement Data

NMP	Date	Time	L _{Aeq} (dB)	L _{A90} (dB)	L _{A10} (dB)	L _{A1} (dB)	Comments
1	Friday 09/05/2025	0700–2300	64	52	67	71	Drake Street traffic
	Friday 09/05/2025	2300–0700	58	38	61	68	
Daytime ambient noise level 64 dB L _{Aeq} (0700–2300)							
Night time ambient noise level 58 dB L _{Aeq} (2300–0700); 10 th highest maxima 76 dB L _{AFMax}							
2	Friday 09/05/2025	1230–1530	46	44	49	54	School
Circa 18 decibels quieter at the rear façade compared to the front façade as fully screened from Drake Street traffic (note: school and MUGA daytime use only)							

- 3.05 The principal noise source is Drake Street traffic at the front façade and occasional noise (albeit at relatively low levels) from St John's Primary School (with MUGA) at the rear facade.
- 3.06 For reference, the proposed floor plans illustrate that a bedroom will be located at the front façade overlooking Drake Street. With respect to bedrooms, consideration is required of both the ambient noise level and the maximum noise levels during the night time. Based on the noise measurement data, it is evident that the control of night time maxima will dictate the glazing and ventilation specification. Furthermore, given the front façade overlooking Drake Street is north facing, overheating within this bedroom is considered highly unlikely as the sun rises in the east and sets in the west.

4.00 BRITISH STANDARD 8233:2014 GUIDANCE ON SOUND INSULATION AND NOISE REDUCTION FOR BUILDINGS (BS 8233)

- 4.01 BS 8233 sets guideline indoor ambient noise levels for dwellings, for steady external noise sources. These levels are reproduced in the following table.

Table 4.1 – BS 8233:2014 Indoor Ambient Noise Levels in Dwellings

Activity	Location	0700–2300 hours	2300–0700 hours
Resting	Living Room	35 dB L_{Aeq}	–
Dining	Dining Room	40 dB L_{Aeq}	–
Sleeping (daytime resting)	Bedroom	35 dB L_{Aeq}	30 dB L_{Aeq}

- 4.02 Note 5 to the above table states '*If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the façade insulation or the resulting noise level. If applicable, any room should have adequate ventilation (e.g. trickle ventilators should be open) during assessment.*'

5.00 SCHEME OF NOISE MITIGATION

Glazing and Ventilation

- 5.01 The sound insulation (glazing and ventilation) requirements of the first floor bedroom on the Drake Street façade have been calculated using the methodology advocated in BS 8233:2014 and are set out in the following table.

Table 5.1 – Scheme of Noise Mitigation Measures

Façade	External Level	Noise Mitigation Measures
Drake Street	64 dB L_{Aeq} (0700–2300) 58 dB L_{Aeq} (2300–0700) 76 dB L_{AFMax} (2300–0700)	Enhanced double glazed unit rated at least 40 dB R_w (see Appendix 6) Acoustic trickle vents rated at least 42 dB $D_{n,e,w}$ open per 5,000 mm ² are required i.e. Greenwood 5000EAW.AC2 (see Appendix 7)
Rear	46 dB L_{Aeq} (0700–2300) 40 dB L_{Aeq} (2300–0700) 56 dB L_{AFMax} (2300–0700)	No acoustic requirements

- 5.02 The control of the ambient noise levels has been assessed by the Building Research Establishment's Building Envelope Insulation software (as reproduced in Figure 5.1). These models illustrate a reduction of at circa 33 dB from outside to inside. This is sufficient to reduce the 10th highest night time maxima on the Drake Street façade to below 45 dB L_{AFMax} (2300–0700) internally as prescribed by BS 8233.
- 5.03 For reference, the existing ventilation grille in the Drake Street façade at first floor should be removed and infilled with masonry.

**Figure 5.1 – BRE Building Envelope Insulation Model
(Acoustic Double Glazing and Acoustic Vents as per Table 5.1)**

BRE Building Envelope Insulation

Switch to Reverberation Time Calculation

2) Select elements of facade structure, and enter corresponding internal surface area in m² OR enter number of vents.

Surface area OR number of vents

Wall 1	Brick/block cavity		m ²
Wall 2	None		m ²
Window 1	40 dB Rw	4	m ²
Window 2	None		m ²
Door	None		m ²
Roof/Ceiling	None		m ²
Vent 1	5000EAW.AC2	2	
Vent 2	None		

Check surface area or number of vents

View/Edit Data

3) Enter reverberation time of the room.

0.5 seconds

4) Select exterior sound level type

Option (A) ☒ User defined spectrum

64 dB LAeq

View/Edit Data

Option (B) ☐ Spectrum shape

Select spectrum shape and enter free field exterior sound level, L_{Aeq} (considering only the octave bands between 125Hz and 2kHz)

L_{Aeq} 64 dB

ISO 717 -1 (C)

View Data

Internal sound level

L_{Aeq} 31.1 dB

Separating Floor Between First Floor Self-Contained Flat and First Floor Office

- 5.04 With respect to sound insulation, Building Regulations Approved Document E 'Resistance to the Passage of Sound' (ADE) Requirement E1 states '*Dwelling-houses, flats, and rooms for residential purposes shall be design and constructed in such a way that they provide reasonable resistance to sound from other parts of the same building and from adjoining buildings*'.
- 5.05 Building Regulations ADE 2003 sets out minimum performance criteria for separating elements (floors and walls) between residential uses as follows: airborne sound insulation of separating walls and floors should be at least 43 dB $D_{nT,w} + C_{tr}$ (the higher the better).
- 5.06 In the situation where residential use is adjacent to commercial use, a judgement is to be made whether a higher standard of sound insulation is required due to the level and/or character of noise generated within the commercial use.
- 5.07 The former ground floor commercial use will remain as commercial (office). It is not considered that the noise sources within an office retail unit are materially different in character to those found within a residential setting. It is therefore considered that the minimum performance criteria set out in Building Regulations ADE 2003 will provide sufficient protection to noise to the future occupiers of the proposed first floor residential unit directly above the ground floor use.
- 5.08 Such a level of sound insulation is readily achieved by an independent ceiling (see Appendix 8) below the existing timber separating floor (upgraded with 15 mm fire board to the underside of the existing ceiling for fire protection). This is a standard ADE solution and typically achieves at least 48 dB $D_{nT,w} + C_{tr}$ (5 decibels above the minimum requirement).
- 5.09 At the rear, due to limited floor to ceiling height (2370 mm), the solution is an additional 15 mm fire board to the underside of the existing ceiling, 50 mm timber battens at 600 mm (maximum) centres perpendicular to the floor joists with 50 mm acoustic partition roll between the battens, 30 mm Hush deep resilient bar at 600 mm (maximum) centres perpendicular to the battens, 2 x 12.5 mm sound bloc plasterboard.
- 5.09 The existing walls to adjacent premises are circa 250 mm solid masonry which will also readily comply with the minimum performance criteria set out in Building Regulations ADE 2003.

6.00 CONCLUSIONS

- 6.01 A noise impact assessment has been undertaken for to carry out a noise impact assessment for the change of use from commercial premises (Use Class E) to a self-contained flat at first floor and an office space (Use Class E) at ground floor at 121 Drake Street, Rochdale, OL16 1PZ.
- 6.02 The principal noise source is Drake Street traffic at the front façade and occasional noise (albeit at relatively low levels) from St John's Primary School (with MUGA) at the rear façade (note: during the weekday daytime period only).
- 6.03 A scheme of noise mitigation has been proposed in accordance with current standards and guidelines.
- 6.04 In conclusion, noise does not pose a material constraint to the granting of planning permission.

We trust the foregoing is to your satisfaction. Should you have any queries, please do not hesitate to contact us.

Yours sincerely

Jonathan Rigg
Associate Member of the Institute of Acoustics
For and on behalf of RP Acoustics Ltd

APPENDIX 1 GLOSSARY OF ACOUSTIC TERMS

Sound Pressure Level (L_p)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 μPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$$L_p = 20 \log_{10}(p/p_0)$$

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 μPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$

The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T , has the same mean-square sound pressure as a sound that varies with time. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night time noise levels.

$L_{A10, T}$

The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T . $L_{A10, 18h}$ is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T . L_{A90} is typically taken as representative of background noise.

$L_{AF \max}$

The maximum A-weighted noise level recorded during the measurement period. The subscript 'F' denotes fast time weighting, slow time weighting 'S' is also used.

Sound Exposure Level (SEL or L_{AE})

The energy produced by a discrete noise event averaged over one second, no matter how long the event actually took. This allows for comparison between different noise events that occur over different lengths of time.

APPENDIX 2 APPLICATION SITE LOCATION PLAN



121 Drake Street, Rochdale, OL16 1PZ



Location Plan shows area bounded by: 389703.24, 412821.87, 389844.66, 412963.29 (at a scale of 1:1250), OSGridRef: SD89771289. The representation of a road, track or path is no evidence of a right of way. The representation of features as lines is no evidence of a property boundary.

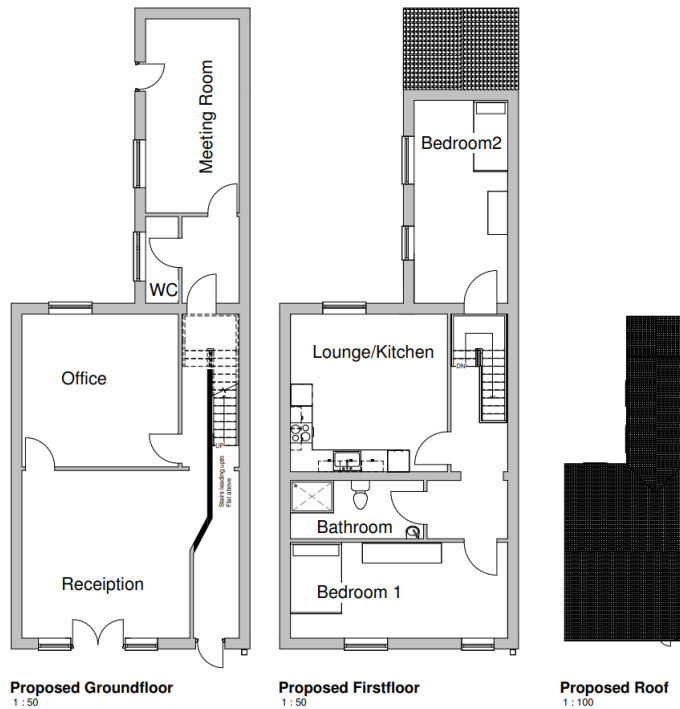
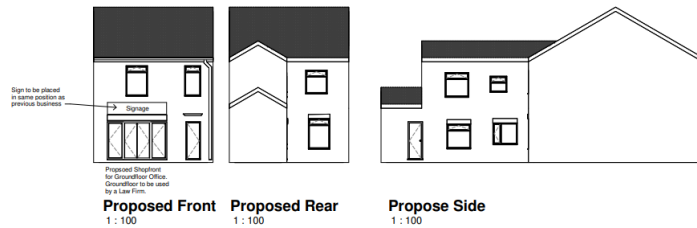
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APPENDIX 3 PROPOSED FLOOR LAYOUTS



Scale: @ A1.
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If in doubt, ask.
Dimensions must be checked by
contractor before work is commenced.

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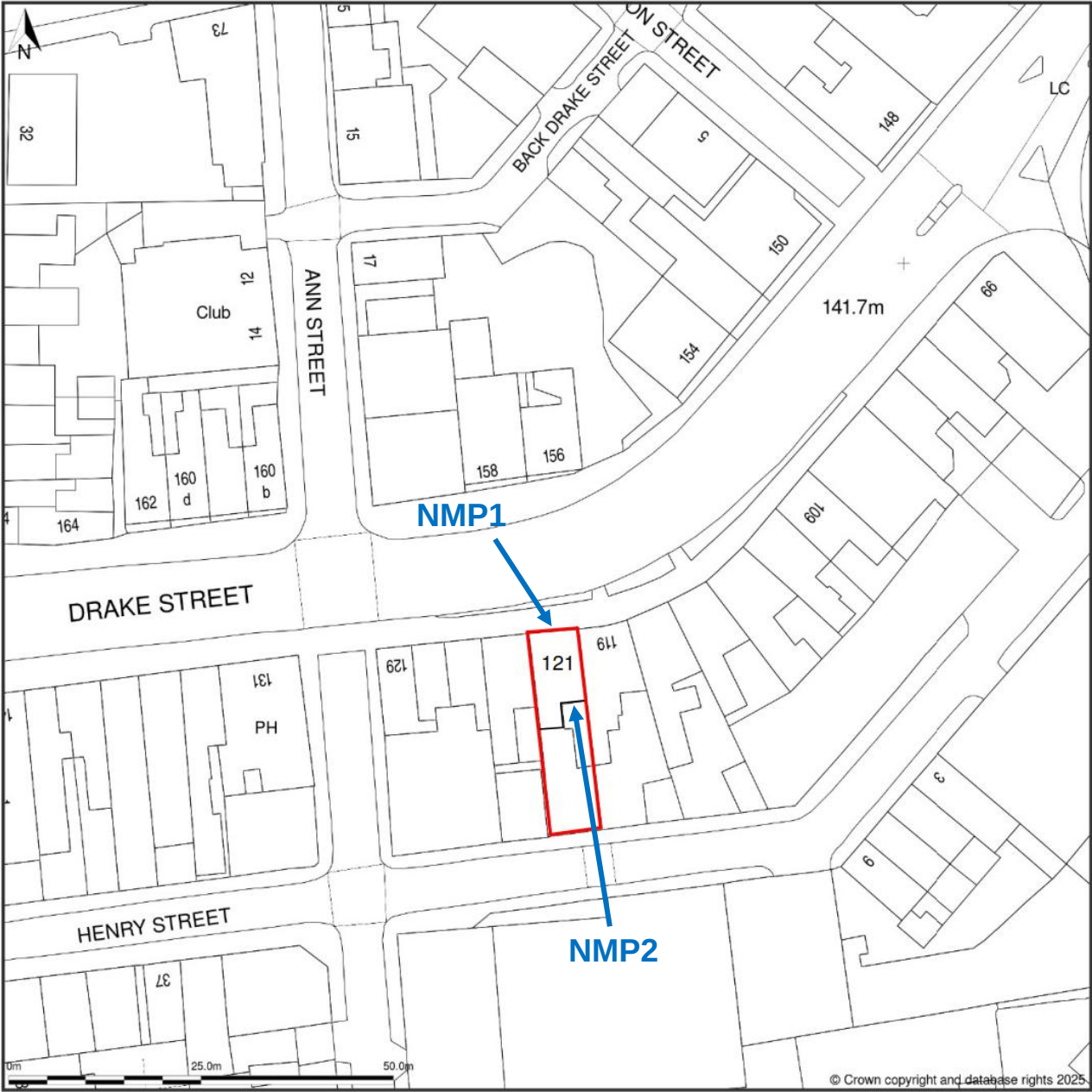
Client:	Seraj Ahmed Khan
Project:	Change of Use
Project Address:	121 Drake St Rochdale OL16 1P2
Drawing Name:	Proposed
Drawing Number:	A102
Drawing Date:	21/03/25
Author:	R. Jabr B. Rashid. C.GM

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APPENDIX 4
NOISE MONITORING POSITIONS



APPENDIX 5

CALIBRATION CERTIFICATE FOR SOUND LEVEL METER (CALIBRATION EVERY 2 YEARS)

Laboratory Location

Campbell Associates Ltd

5b Chelmsford Road Industrial Estate
GREAT DUNMOW, Essex, GB-CM8 1HD
Phone 01371 871030



Certificate of Calibration and Conformance

Certificate number: **U46717**

Test Object: **Sound Level Meter, BS EN IEC 61672-1:2013 Class 1**
Associated Frequency Analyser to BS EN IEC 61260:1996 Class 1

Producer: **NTi Audio**
Type: **XL2-TA**
Serial number: **A2A-17283-E0**
Customer: **RP Acoustics Ltd**
Address: **1 Dobcroft Close,
Sheffield. S11 9LL.**
Contact Person: **Richard Pennell**
Order No: **RPA/24/CAL/01**

Introduction:

Calibration has been performed as set out in CA Technical Procedures which are based on the procedures for periodic verification of sound level meters as per the **Test Object** listed above. Results and conformance statement are overleaf and detailed results, where appropriate, are provided in the attached Measurement Report.

Tested:	Producer	Type	Serial No	Certificate No
Microphone	NTi Audio	MC230A	A23655	46716
Calibrator*	Larson Davis	CAL200	17115	U46700
Preamplifier	NTi Audio	MA220	11174	Included

* The calibrator was complete with any required coupler for the microphone specified.

Additional items that have also been submitted for verification:

Wind shield N/A
Attenuator N/A
Extension cable N/A

These items have been taken into account wherever appropriate.

Instruction Manual: NTi-Audio XL2 Operating Manual v3.11.02 August 2016 Firmware Version: V4.71 The test object is a single channel instrument.

Conditions	Pressure kPa	Temperature °C	Humidity %RH
Reference conditions	101.325	23	50
Measurement conditions	97.15 ±0.02	22.30 ±0.4	43.48 ±0.65

Calibration Dates:

Received date: 23/01/2024 Reviewed date: 09/02/2024
Calibration date: 09/02/2024 Issued date: 09/02/2024

Technicians: (Electronic certificate)

Calibrated by: *Palanivel Marappan B.Eng (Hons), M.Sc*

Reviewed by: *Darren Batten*

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Doc ref: SIM-Cert-Master-V3-07

APPENDIX 6
GLAZING SPECIFICATION
(FIRST FLOOR BEDROOM ON THE DRAKE STREET FAÇADE)



COMPARISON CHART

The charts below show comparisons between various types of glass and insulated glass units and also between the Rw, Rw+C & Rw+Ctr indices.

Single Glass	Rw	Rw+C	Rw+Ctr
6.4mm Laminated Safety Glass	32 dB	31 dB	29 dB
6.8mm Laminated Safety Glass	33 dB	31 dB	29 dB
10.8mm Laminated Safety Glass	34 dB	33 dB	31 dB
6.8mm Acoustic Laminated	35 dB	34 dB	32 dB
8.8mm Acoustic Laminated	37 dB	36 dB	33 dB
10.8mm Acoustic Laminated	38 dB	37 dB	36 dB
12.8mm Acoustic Laminated	39 dB	39 dB	37 dB
16.8mm Acoustic Laminated	40 dB	40 dB	38 dB

Double Glazed Units	Rw	Rw+C	Rw+Ctr
4mm / 20 spacer / 4mm IGU	31 dB	30 dB	25 dB
6mm / 16 spacer / 6mm IGU	31 dB	30 dB	27 dB
8mm / 16 spacer / 6mm IGU	35 dB	33 dB	29 dB
10mm / 16 spacer / 6mm IGU	40 dB	38 dB	35 dB
6.8mm Acoustic / 16 spacer / 6mm IGU	38 dB	36 dB	33 dB
8.8mm Acoustic / 16 spacer / 6mm IGU	41 dB	38 dB	34 dB
10.8mm Acoustic / 16 spacer / 6mm IGU	41 dB	39 dB	35 dB
12.8mm Acoustic / 16 spacer / 6mm IGU	41 dB	40 dB	36 dB
16.8mm Acoustic / 16mm spacer / 16.8mm Acoustic	48 dB	46 dB	42 dB

Triple Glazed Units	Rw	Rw+C	Rw+Ctr
4mm / 8mm spacer / 4mm / 8mm spacer / 4mm	31 dB	30 dB	27 dB
4mm / 10mm spacer / 4mm / 10mm spacer / 4mm	32 dB	31 dB	26 dB

Secondary Glazing	Rw		Rw+Ctr
6 / 100 / 4	46 dB		37 dB
6 / 150 / 4	47 dB		39 dB
10 / 200 / 6	49 dB		45 dB

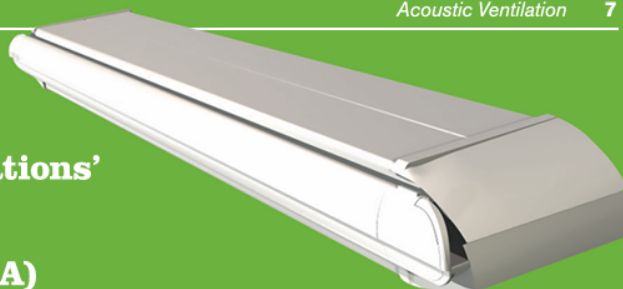
Sound insulation data measured in accordance with BS EN ISO 140-3 and indices derived in accordance with BS EN ISO 717-1

APPENDIX 7

ACOUSTIC TRICKLE VENT SPECIFICATION (FIRST FLOOR BEDROOM ON THE DRAKE STREET FAÇADE)

Acoustic Ventilation 7

The best of both worlds... achieves Building Regulations' EA requirements along with fantastic acoustic performances up to 45dB(A)



Features and benefits

- Smallest acoustic window vents providing 2500mm² or 5000mm² equivalent area ventilation on the market
- Achieves the best acoustic performance for window ventilators available within the UK – up to 45dB(A)
- A simple, yet adaptable, solution to meet required specification/ Building Regulation requirements incorporating both high levels of equivalent area ventilation and acoustic noise reduction
- Modularity of acoustic sets provides flexibility for installation and acoustic performance
- Aesthetically pleasing design which is easy to open and control by the homeowner
- Excellent airtightness performance with upward air deflection to reduce the risk of draughts
- May require add on section in some window installations
- Available in any RAL colour on a made-to-order basis, please contact us for more information

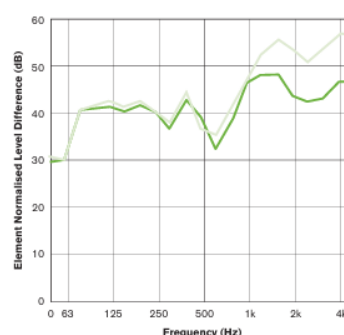
Sets comprise of:

1 EA vent + 1 external acoustic module – providing noise reduction with discreet internal aesthetics.

1 EA vent + 2 acoustic modules (for internal and external install) – providing maximum noise reduction.

Performance

2500EA acoustic performance

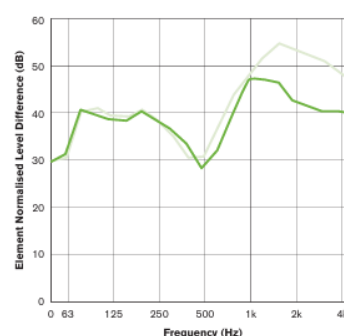


Key

2500EAW.AC1

2500EAW.AC2

5000EA acoustic performance



Key

5000EAW.AC1

5000EAW.AC2

Models, control options and key data

Product code	Description	Controls	Acoustic performance			Equivalent area mm ²	Colour
			Dn,e,w	Dn,e,w (C)	Dn,e,w (Ctr)		
2500EAW.AC1 *	Vent + 1 Acoustic External Module	Front	42dB(A)	41dB	40dB	2749	White
2500EAW.AC2 *	Vent + 2 Acoustic Modules	Front	45dB(A)	43dB	42dB	2736	White
5000EAW.AC1 *	Vent + 1 Acoustic External Module	Front	39dB(A)	38dB	37dB	5713	White
5000EAW.AC2 *	Vent + 2 Acoustic Modules	Front	42dB(A)	40dB	38dB	5497	White

* Pricing is variable depending on quantity ordered - please call for details

APPENDIX 8
SEPARATING FLOOR UPGRADE

Diagram 4.3 **Floor treatment 1**

