



Acoustic Survey and Assessment for Proposed change of use of the ground floor from office to residential accommodation at 119 Drake Street, Rochdale, OL16 1PZ.

Prepared for:

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1. Introduction

- 1.1. Martin Environmental Solutions has been commissioned to undertake an acoustic survey and assessment to support a planning application for the change of use to the ground floor from office to residential apartment at 119 Drake Street, Rochdale, OL16 1PZ.

Site Location and Context

- 1.2. The development site is situated to the south side of Drake Street, forming a mid-terrace property. Neighbouring properties consist of an office to the east and dental surgery to the west. The first floor will remain as offices. To the rear south a car parking area and Henry Street, with a school sports track beyond.
- 1.3. An aerial Photograph is enclosed in Figure 1, together with a proposed layout drawing in Figure 2.
- 1.4. The report has been produced to clarify the potential impact on the proposed development and to identify mitigation measures if required to ensure the development is appropriate in terms of noise impact.



2. Policy and Guidance

- 2.1. The impact of noise can be a material consideration in the determination of planning applications. The planning system has the task of guiding development to the most appropriate locations. It is recognised that on occasions it will be difficult to reconcile some land uses, such as housing, hospitals, or schools, with other activities that generate high levels of noise. However, the planning system is tasked to ensure that, wherever practicable, noise-sensitive developments are separated from major sources of noise (such as road, rail and air transport and certain types of industrial development).
- 2.2. The Government's publication of the National Planning Policy Framework (NPPF), updated in December 2023, states that planning policies and decisions should prevent new and existing development from contributing to or being put at unacceptable risk from, of being adversely affected by unacceptable levels of noise pollution.
- 2.3. The Government have also issued the Noise Policy Statement for England (NPSE). The NPSE clarifies the Government's underlying principles and aims in relation to noise and sets a vision to promote good health and a good quality of life through the effective management of noise while having regard to the Government's sustainable development strategy. The NPSE aims to mitigate and minimise adverse impacts on health and quality of life through the effective management and control of noise.
- 2.4. The NPSE introduces the following terms, although no sound levels are given to represent these, many authorities have identified the sound level criteria in line with the World Health Organisation, BS8233:2014 and BS4142: 2014 levels. The terms introduced by the NPSE are:
- NOEL – No Observed Effect Level (<30dB(A) inside <50dB(A) outside, 10dB below background)
- LOAEL – Lowest Observed Adverse Effect Level (30-35dB(A) inside 50-55dB(A) outside, background to +5dB)
- SOAEL – Significant Observed Adverse Effect Level (>35dB(A) inside, >55dB(A) outside, >+10dB above background)
- 2.5. The sound levels within the brackets of the previous paragraph are those determined as appropriate levels to indicate the relevant effect levels represented by the NPSE.



- 2.6. Other commonly used examples of standards utilised by Local Planning authorities for the consideration of noise impacts include comparison of the likely noise levels to be experienced at a development, with levels that have been recommended by the World Health Organisation (WHO) as Guidelines for the prevention of Community Noise Annoyance and within BS8233: 2014.
- 2.7. The WHO recommended noise levels for outdoor amenity areas (gardens) that should not be exceeded are 55dB(A) $L_{Aeq,16hr}$ in order to avoid 'Serious Community Annoyance' or 50dB(A) $L_{Aeq,16hr}$ to avoid 'Moderate Community Annoyance' during the day. For indoor levels WHO set 35dB(A) $L_{Aeq,16hr}$ during the day to prevent Moderate Annoyance and 30 dB(A) $L_{Aeq,8hr}$ at night to prevent sleep disturbance.
- 2.8. The WHO guidance also recommends that maximum sound levels at night should not regularly exceed 45dB(A) within bedrooms to prevent sleep disturbance. Regularly is considered to be more than 10 times during any 8-hour night-time period.
- 2.9. BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' also specifies desirable noise levels to be achieved inside dwellings.
- 2.10. BS 8233:2014 'Sound insulation and noise reduction for buildings – Code of Practice' also specifies desirable noise levels to be achieved inside dwellings. BS 8233 presents two levels, the first between the hours of 07:00 – 23:00 and the second between 23:00 -07:00.
- 2.11. The daytime period suggests internal noise levels of 35dB $L_{Aeq,16hr}$, for resting in living rooms and bedrooms while for night-time a level of 30dB $L_{Aeq,8hr}$ is recommended. Criteria for external areas mirrors that within the WHO guidance.
- 2.12. In addition, the 'ProPG Planning & Noise, Professional Practice Guidance on Planning & Noise, New Residential Development' provides a 4-staged approach to undertaking a risk assessment in relation to anticipated sound levels at new residential development and the provision of mitigation measures. The guidance is principally aimed at sites exposed predominantly to noise from transportation sources.

2.13. The first stage consists of an initial noise risk assessment, based on indicative day and night-time *noise* levels. Simply put, the higher the ambient noise in an area the greater the impact. The levels given are shown below although it should be noted that these are in excess of both the WHO and BS 8233: 2014 guidance.

Noise Risk Category*	Potential Effect if Unmitigated	Pre-Planning Application Guidance
0 – Negligible $L_{Aeq,16hr} < 50dB$ $L_{Aeq,8hr} < 40dB$	May be noticeable but no adverse effect on health and quality of life	In this category the development is likely to be acceptable from a noise perspective, nevertheless a good acoustic design process is encouraged to improve the existing environment and/or safeguard against possible future deterioration and to protect any designated tranquil areas. A noise assessment may be requested to demonstrate no adverse impact from noise. Application need not normally be delayed on noise grounds.
1 – Low $L_{Aeq,16hr} 50-63dB$ $L_{Aeq,8hr} 40-55dB$	Adverse effect on health and quality of life	In this category the development may be refused unless a good acoustic design process is followed and is demonstrated via a Level 1 Acoustic Design Statement which confirms how the adverse impacts of noise on the new development will be mitigated and minimised and that a significant adverse impact will not arise in the finished development. Planning conditions and other measures to control noise may be required.
2 – Medium $L_{Aeq,16hr} 63-69dB$ $L_{Aeq,8hr} 55-60dB$ $L_{AFmax} > 80dB^{**}$	Significant adverse effect on health and quality of life	In this category the development is likely to be refused unless good acoustic design process is followed and is demonstrated via a Level 2 Acoustic Design Statement which confirms how the adverse impacts of noise on the new development will be mitigated and minimised, and clearly demonstrates that a significant adverse noise impact will not arise in the finished development. Planning conditions and other measures to control noise will normally be required.
3 – High $L_{Aeq,16hr} > 69dB$ $L_{Aeq,8hr} > 60dB$ $L_{AFmax} > 80dB^{**}$	Unacceptable adverse effect of health and quality of life	In this category the development is very likely to be refused on noise grounds, even if a good acoustic design process is followed and is demonstrated via a Level 2 Acoustic Design Statement. Applicants are advised to seek expert advice on possible mitigation measures. Advice on the circumstances when the refusal of a new housing on noise grounds should normally be anticipated is included in the ProPG.

2.14. Stage 2, consists of a full assessment of the prevailing ambient noise and requires 4 elements to be considered:

- I. Element 1 – Good Acoustic Design
- II. Element 2 – Internal Noise Level Guidelines
- III. Element 3 – External Amenity Area Noise Assessment
- IV. Element 4 – Assessment of Other Relevant Issues

2.15. A good acoustic design is implicit in meeting the requirements of the NPPF and can help to resolve many potential acoustic issues.



2.16. Details of the criteria considered suitable are provided above for both internal and external sound levels. Element 4 includes such issues as local and national policy, likely occupants, wider planning objectives.



3. The Assessment

The development

- 3.1 The proposed development consists of a change of use of the ground floor of property from offices to residential accommodation.
- 3.2 Figure 2 below provides an overview of the proposed development.

Existing Situation.

- 3.3 In order to obtain representative background sound levels for the area on site monitoring was undertaken over the 4th-5th September 2024.
- 3.4 Two sound level meters were utilised for the monitoring, both Cirrus Optimus Green units were placed at a first-floor level 1m from the facade. One was placed to the rear façade overlooking the other to the front over-looking Drake Street.
- 3.5 The meters were field calibrated at the start and end of the monitoring period with no significant variation and full laboratory calibration certificates are available on request.
- 3.6 The weather during the monitoring was dry with little to no wind <5m/s.
- 3.7 The full results are shown in Appendix A, with a summary in the tables below.

Front

Start Time	End Time	Duration	L _{Aeq}	L _{A90}	L _{AMax}
04/09/2024 15:00	04/09/2024 23:00	07:59:59	68.7	56.4	102.1
04/09/2024 23:00	05/09/2024 07:00	08:00:00	63.9	39.0	97.2
05/09/2024 07:00	05/09/2024 23:00	16:00:00	68.6	58.0	103.4
05/09/2024 23:00	06/09/2024 07:00	08:00:00	62.2	42.2	84.9
06/09/2024 07:00	06/09/2024 09:00	02:00:01	68.5	56.9	85.2

Rear

Start Time	End Time	Duration	L _{Aeq}	L _{A90}	L _{AMax}
04/09/2024 15:00	04/09/2024 23:00	07:59:58	51.1	44.3	80.5
04/09/2024 23:00	05/09/2024 07:00	08:00:00	45.1	36.2	80.6
05/09/2024 07:00	05/09/2024 23:00	16:00:00	54.1	47.4	83.1
05/09/2024 23:00	06/09/2024 07:00	08:00:00	46.7	37.8	74.2
06/09/2024 07:00	06/09/2024 09:00	02:00:01	50.7	47.5	74.1



- 3.8 Background sound levels were dominated by passing traffic with night-time maximum sound levels regularly exceeded at identified at 82.8dB(A).

Impact from External Sound sources

- 3.9 Given a 15dB attenuation¹ for an open window the sound levels to be experienced by the future occupants are above those identified within the guidance documents detailed in section 2 of the report. Therefore, further mitigation measures are required.
- 3.10 A standard 6/12/6 double glazing unit will, when closed, provide a sound reduction, $R_w(C;C_{tr})$, of 33(-1;-3). Therefore, adequate to protect the future occupants to the rear of the site and from the average day and night-time sound levels to the front. However, the night-time regularly exceeded maximum sound level would result in internal sound levels above the recommended 45dB(A), even when taking the full façade into account.
- 3.11 A secondary 6mm pane of glass is therefore required to the front façade of the property, with a 100mm space between it and the standard fitted 6/2/6 double glazing unit installed. The combined façade will ensure internal sound levels are below the recommended 45dB(A) maximum sound level. See Appendix B.
- 3.12 In order to be able to keep windows closed additional ventilation provision must be made for the property. As such it is recommended that a ventilation system is used incorporating acoustic trickle ventilators for all windows to habitable rooms to the proposed properties. The ventilators must achieve a similar or better performance to the windows when open and a number of suitable models are available from suppliers including the Greenwood DN Vent providing 34dB (C_{tr}) attenuation or the Titon, Trimvent Select S13 Ventilator providing 33dB (C_{tr}) attenuation. Other models and manufacturers are available.
- 3.13 Care must be taken to ensure that windows are well fitted and gaps between the window frame and the brick work are minimised. Where gaps do occur, these should be filled with a suitable acoustic material, not expandable foam. The window frame

¹ BS8233: 2014; Guidance on sound insulation and noise reduction for buildings



should be sealed across the full depth of the frame and not just around the edges. This will ensure that sound does not 'leak' around the edge of the frame.

- 3.14 It is worth noting that the above provision does not prohibit the short opening of windows for purge ventilation of the property. The recommended trickle ventilation is design to achieve the required background ventilation for the property.
- 3.15 A consideration of the Building Regulations, and Approved Document O requirements around overheating is essential given the need for closed windows. The Regulations require adequate provision to be made for the removal of heat from the building and to limit solar gain.

Internal Transfer of Sound

- 3.16 It is important to ensure that sound transfer between the ground floor proposed apartment, access hallway and first floor offices does not result in any adverse impact, and is sufficient to ensure privacy, given the current use of the office as a solicitor's.
- 3.17 Proposed specifications have been presented in Appendix C for the separating ceiling and the walls to the entrance hallway. These exceed the requirements of the Building Regulations, and ensure no adverse impact will be experienced between the two uses.



4 Conclusion

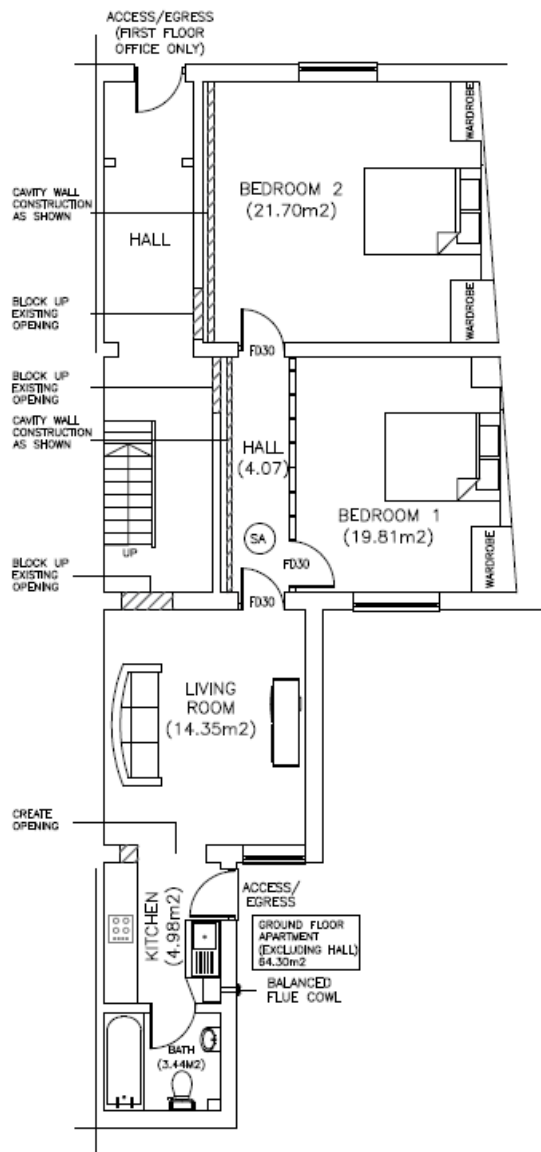
- 4.1 On-site monitoring has identified existing background sound levels will result in an adverse impact on the proposed development. As such additional mitigation measures are required.
- 4.2 These have been identified as standard double-glazing units to the rear and a secondary glazing unit to the front with trickle window vents to ensure a suitable level of ventilation is achieved.
- 4.3 The inclusion of the above mitigation measures to all habitable rooms will ensure that the internal and external sound levels are acceptable and will result in a No Observe Effect on the future residents in line with the Noise Policy Statement for England.
- 4.4 As such the development will meet the objectives of the National Planning Policy Framework in ensuring that no significant adverse impact is experienced by the future residents. The development is therefore considered to be acceptable in terms of noise.



Figure 1 – Aerial Photograph



Figure 2 – Proposed Layout Plan



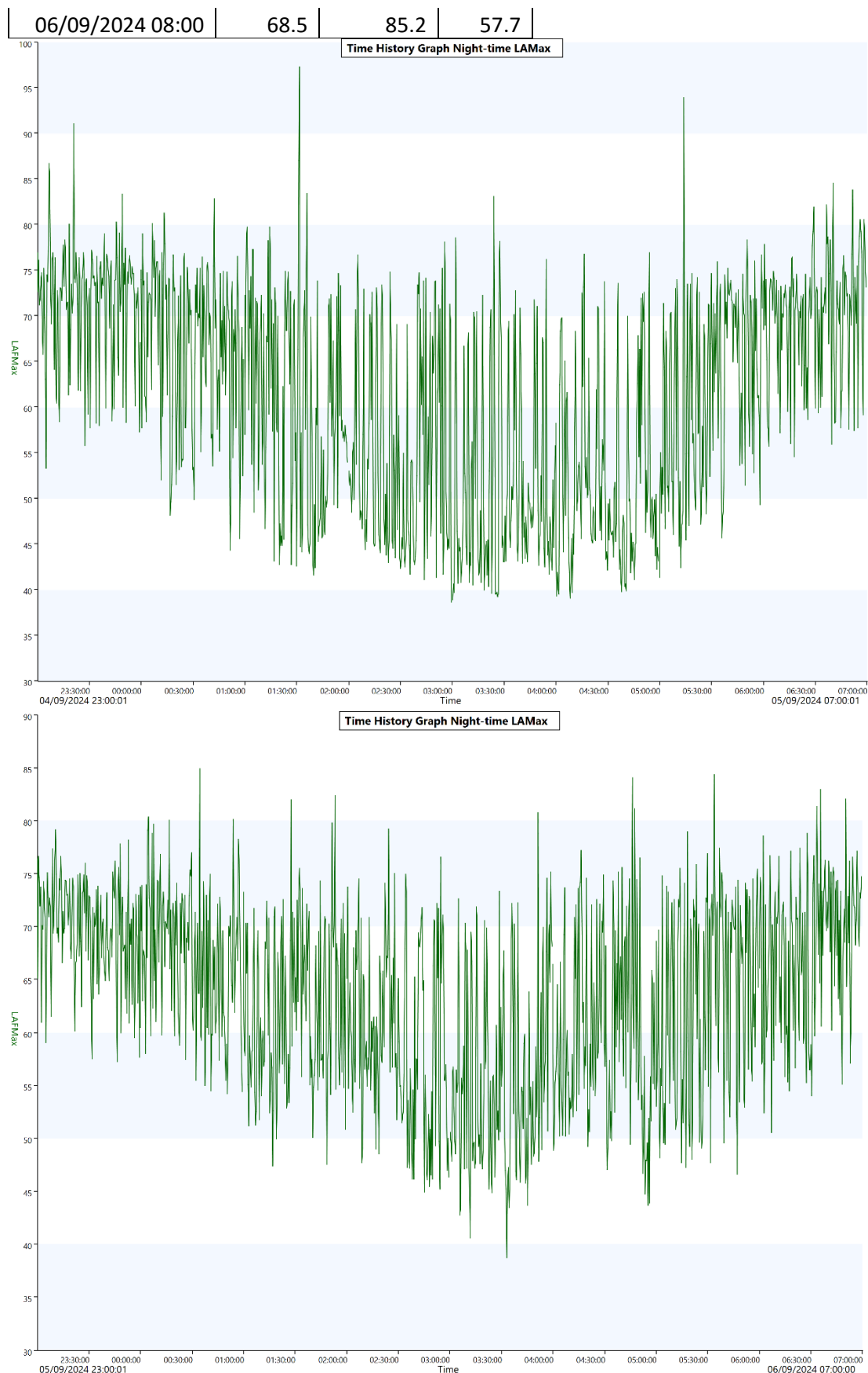
PROPOSED GROUND FLOOR
(2 BED APARTMENT – 64.30M²)



Appendix A – Full Monitoring Results

Front

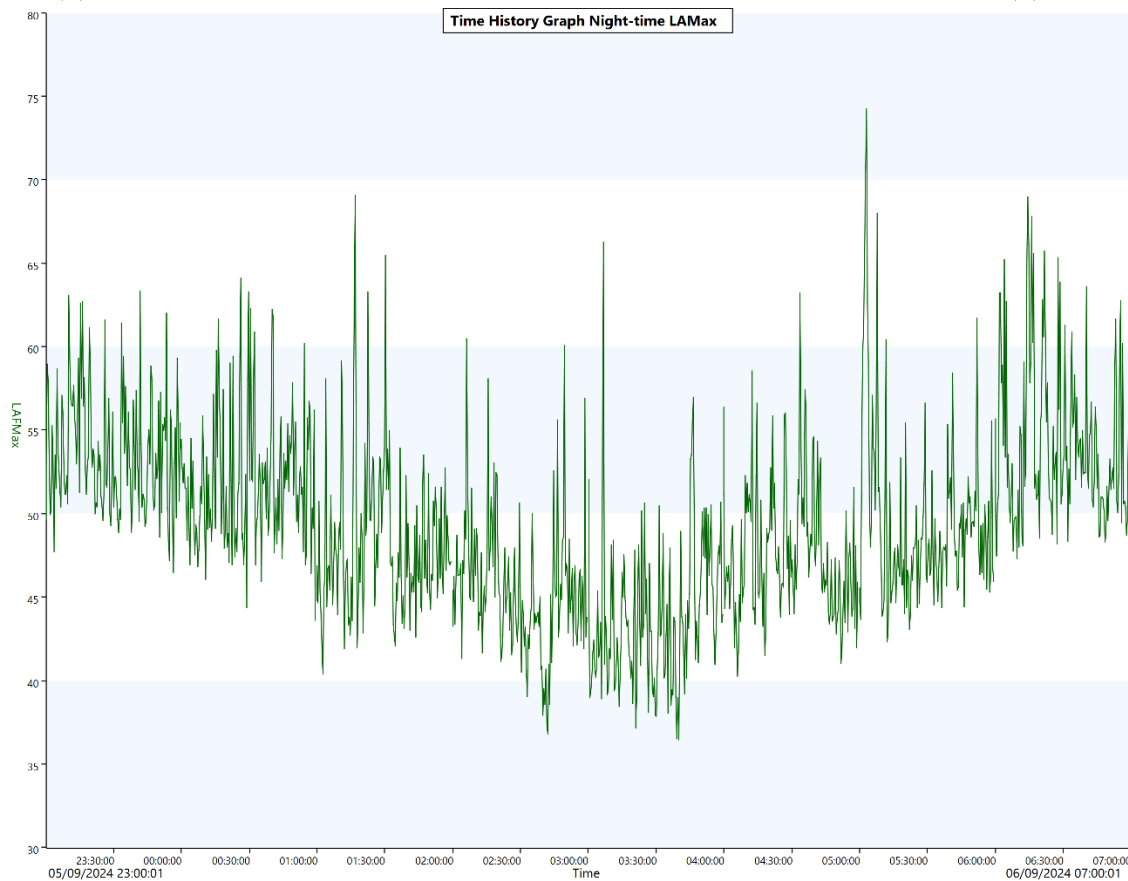
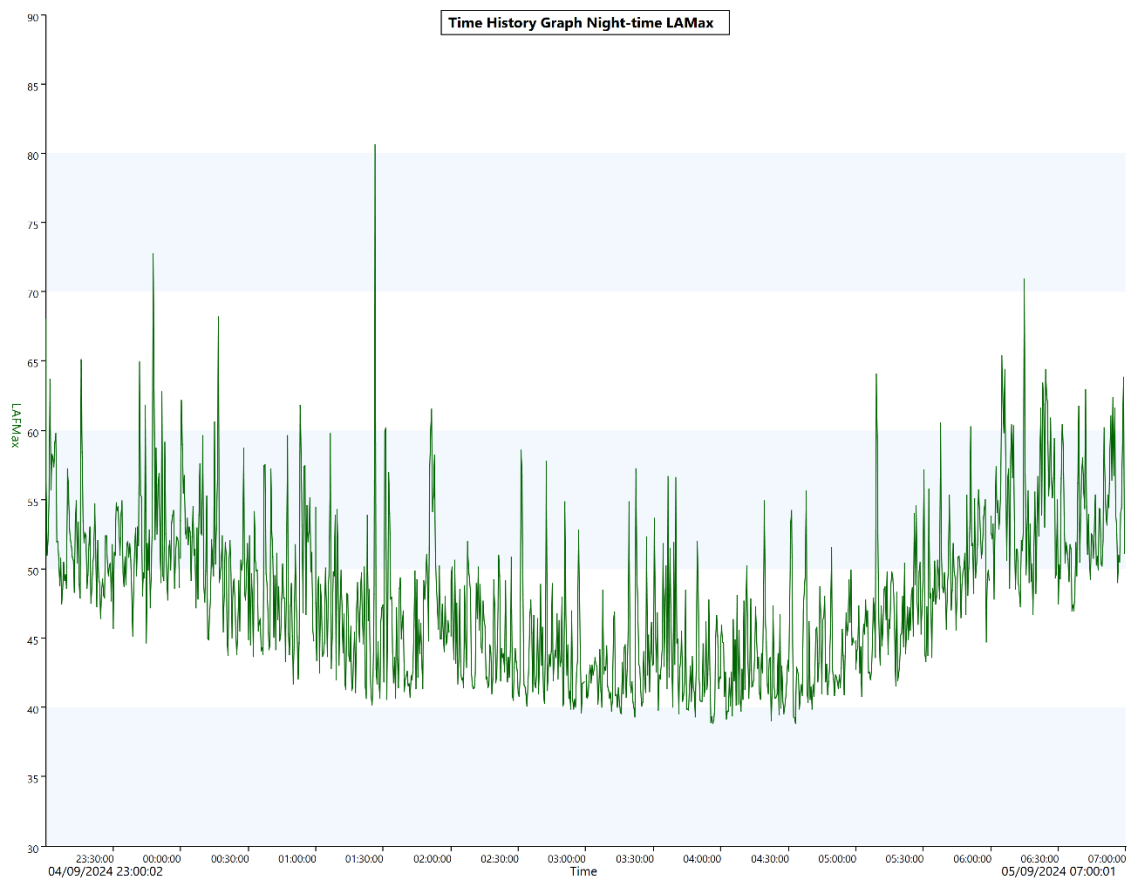
Time	L _{Aeq} (dB)	L _{AMax} (dB)	L _{A90} (dB)
04/09/2024 15:00	70.6	88.6	59.3
04/09/2024 16:00	71.2	102.1	59.1
04/09/2024 17:00	67.6	79.4	58.7
04/09/2024 18:00	68.9	90.9	58.9
04/09/2024 19:00	68.1	85.5	56.9
04/09/2024 20:00	67.3	95.1	54.7
04/09/2024 21:00	67.3	86.8	53.7
04/09/2024 22:00	66.4	83.4	52.5
04/09/2024 23:00	67.5	91.0	50.9
05/09/2024 00:00	65.1	82.8	43.8
05/09/2024 01:00	64.4	97.2	40.0
05/09/2024 02:00	59.0	78.1	38.7
05/09/2024 03:00	58.6	83.0	36.5
05/09/2024 04:00	56.3	76.9	37.5
05/09/2024 05:00	64.0	93.9	42.1
05/09/2024 06:00	65.6	84.6	49.8
05/09/2024 07:00	69.3	84.4	56.5
05/09/2024 08:00	69.7	83.8	60.2
05/09/2024 09:00	68.1	80.0	58.8
05/09/2024 10:00	68.3	86.5	59.4
05/09/2024 11:00	68.0	82.3	58.9
05/09/2024 12:00	68.5	86.8	58.8
05/09/2024 13:00	69.5	94.4	59.2
05/09/2024 14:00	68.6	81.4	60.3
05/09/2024 15:00	68.2	81.6	59.1
05/09/2024 16:00	67.2	81.1	59.0
05/09/2024 17:00	69.0	97.6	59.4
05/09/2024 18:00	68.9	87.6	58.5
05/09/2024 19:00	68.1	82.6	57.4
05/09/2024 20:00	68.6	93.7	56.6
05/09/2024 21:00	66.7	78.8	54.1
05/09/2024 22:00	69.7	103.5	52.9
05/09/2024 23:00	64.9	79.1	51.6
06/09/2024 00:00	63.4	84.9	47.6
06/09/2024 01:00	60.0	82.3	44.1
06/09/2024 02:00	58.7	79.2	40.5
06/09/2024 03:00	56.2	80.8	37.9
06/09/2024 04:00	60.4	84.1	41.7
06/09/2024 05:00	62.4	84.3	43.9
06/09/2024 06:00	64.9	82.9	48.6
06/09/2024 07:00	68.6	82.4	55.7





Rear

Time	L _{Aeq} (dB)	L _{AMax} (dB)	L _{A90} (dB)
04/09/2024 15:00	56.4	80.5	46.7
04/09/2024 16:00	51.0	76.3	45.0
04/09/2024 17:00	51.1	76.2	46.1
04/09/2024 18:00	49.3	70.5	45.8
04/09/2024 19:00	48.5	65.1	44.1
04/09/2024 20:00	48.1	70.8	43.6
04/09/2024 21:00	46.9	65.7	43.3
04/09/2024 22:00	47.9	73.4	43.6
04/09/2024 23:00	47.6	72.7	43.2
05/09/2024 00:00	45.8	68.2	40.9
05/09/2024 01:00	46.0	80.6	36.7
05/09/2024 02:00	40.5	58.6	35.3
05/09/2024 03:00	38.7	57.2	34.6
05/09/2024 04:00	39.6	55.6	35.5
05/09/2024 05:00	44.3	64.0	39.1
05/09/2024 06:00	48.3	70.9	44.0
05/09/2024 07:00	52.7	70.6	47.0
05/09/2024 08:00	50.7	70.4	47.6
05/09/2024 09:00	53.7	78.3	48.0
05/09/2024 10:00	52.1	80.4	47.5
05/09/2024 11:00	53.6	72.2	48.1
05/09/2024 12:00	62.2	81.0	49.0
05/09/2024 13:00	51.3	83.1	47.7
05/09/2024 14:00	51.4	68.4	48.8
05/09/2024 15:00	55.6	74.6	50.0
05/09/2024 16:00	53.0	79.1	48.6
05/09/2024 17:00	52.5	71.2	49.3
05/09/2024 18:00	51.7	83.0	48.0
05/09/2024 19:00	49.6	67.3	46.9
05/09/2024 20:00	49.9	74.7	46.6
05/09/2024 21:00	48.8	66.8	45.5
05/09/2024 22:00	49.7	74.9	45.6
05/09/2024 23:00	48.7	63.3	45.0
06/09/2024 00:00	46.6	64.1	42.5
06/09/2024 01:00	44.1	69.1	38.7
06/09/2024 02:00	40.4	60.5	35.9
06/09/2024 03:00	39.7	66.3	35.2
06/09/2024 04:00	43.6	63.2	39.5
06/09/2024 05:00	49.0	74.2	41.5
06/09/2024 06:00	50.1	68.9	45.3
06/09/2024 07:00	50.0	65.4	46.9
06/09/2024 08:00	51.3	74.1	48.2



Appendix B – Front Façade Attenuation

Daytime

Outdoor To Indoor Sound Transmission (v10.0.5)

Program copyright Marshall Day Acoustics

Margin of error is generally within ± 3 dB

- Key No. 2594

Job Name:

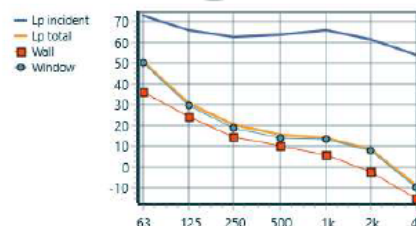
Job No.:

Date: 07/10/2024

File Name:

Comment:

Initials: info



Octave Band Centre Frequency (Hz)							
Source	63	125	250	500	1k	2k	4k
Incident sound level (freefield)	72.7	65.8	62.3	63.3	65.9	61.6	53.7
Path							
Element 1, STL	-37	-42	-48	-53	-60	-64	-69
Facade Shape factor Level diff.	0	0	0	0	0	0	0
Insertion Loss	0	0	0	0	0	0	0
Area (+10LogA) [10 m²]	10	10	10	10	10	10	10
Element sound level contribution	36	24	14	10	6	-2	-15
Element 2, STL	-17	-31	-38	-44	-47	-48	-58
Facade Shape factor Level diff.	0	0	0	0	0	0	0
Insertion Loss	0	0	0	0	0	0	0
Area (+10LogA) [2.9 m²]	5	5	5	5	5	5	5
Element sound level contribution	50	29	19	14	13	8	-10
Receiver							
Room volume (-10LogV) [61 m³]	-18	-18	-18	-18	-18	-18	-18
Reverberation time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
RT (+10LogT)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Equation Constant	11	11	11	11	11	11	11
Room sound level	50	30	20	16	14	9	-9
Level difference							
D2m,nT	25	38	45	51	55	56	65
							LpAinc - LpArev,T0
							43
** Element descriptions: #1: Wall #2: Window							

Night-time

Outdoor To Indoor Sound Transmission (v10.0.5)

Program copyright Marshall Day Acoustics

Margin of error is generally within ± 3 dB

- Key No. 2594

Job Name:

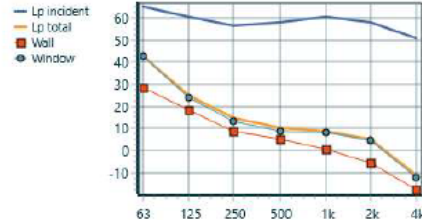
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Date: 07/10/2024

File Name:

Comment:

Initials: info



Octave Band Centre Frequency (Hz)								
Source	63	125	250	500	1k	2k	4k	Overall dBA
Incident sound level (freefield)	65.2	60.4	56.7	58.0	60.4	58.1	51.0	64
Path								
Element 1, STL	-37	-42	-48	-53	-60	-64	-69	9
Facade Shape factor Level diff.	0	0	0	0	0	0	0	
Insertion Loss	0	0	0	0	0	0	0	
Area(+10LogA) [10 m²]	10	10	10	10	10	10	10	
Element sound level contribution	28	19	9	5	1	-6	-18	
Element 2, STL	-17	-31	-38	-44	-47	-48	-58	18
Facade Shape factor Level diff.	0	0	0	0	0	0	0	
Insertion Loss	0	0	0	0	0	0	0	
Area(+10LogA) [2.9 m²]	5	5	5	5	5	5	5	
Element sound level contribution	43	24	13	9	8	5	-12	
Receiver								
Room volume(-10LogV) [61 m³]	-18	-18	-18	-18	-18	-18	-18	19
Reverberation time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
RT (+10LogT)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	
Equation Constant	11	11	11	11	11	11	11	
Room sound level	43	25	15	10	9	5	-11	
Level difference								
D2m,nT	25	38	45	51	55	56	65	45
** Element descriptions: #1: Wall #2: Window								

Night-time LAMax

Outdoor To Indoor Sound Transmission (v10.0.5)

Program copyright Marshall Day Acoustics

Margin of error is generally within ± 3 dB

- Key No. 2594

Job Name:

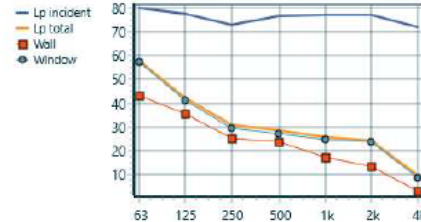
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File Name:

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Octave Band Centre Frequency (Hz)							
Source	63	125	250	500	1k	2k	4k
Incident sound level (freefield)	79.9	77.6	73.0	76.5	77.3	77.2	72.0
Path							
Element 1, STL	-37	-42	-48	-53	-60	-64	-69
Facade Shape factor Level diff.	0	0	0	0	0	0	0
Insertion Loss	0	0	0	0	0	0	0
Area(+10LogA) [10 m²]	10	10	10	10	10	10	10
Element sound level contribution	43	36	25	24	17	13	3
Element 2, STL	-17	-31	-38	-44	-47	-48	-58
Facade Shape factor Level diff.	0	0	0	0	0	0	0
Insertion Loss	0	0	0	0	0	0	0
Area(+10LogA) [2.9 m²]	5	5	5	5	5	5	5
Element sound level contribution	57	41	30	27	25	24	9
Receiver							
Room volume(-10LogV) [61 m³]	-18	-18	-18	-18	-18	-18	-18
Reverberation time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
RT (+10LogT)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Equation Constant	11	11	11	11	11	11	11
Room sound level	58	42	31	29	26	24	10
Level difference							
D2m,nT	25	38	45	51	55	56	65
LpAinc - LpArev,T0							47
** Element descriptions: #1: Wall #2: Window							

Appendix C – Party Wall Attenuation and Suggested Internal Dividing Structures

Party wall – plaster solid brick.

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 09/09/2024

Job Name:



R_w 58 dB

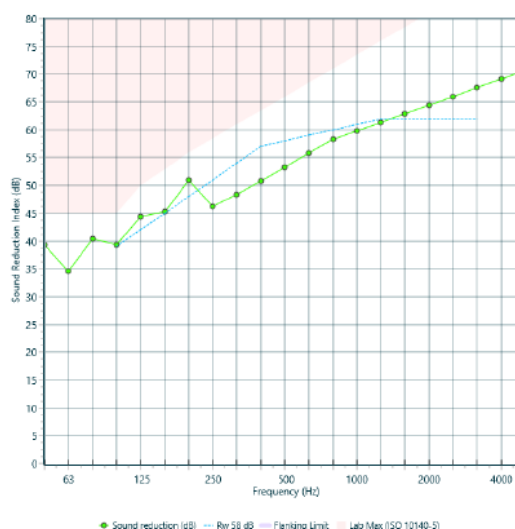
C -1 dB

Ctr -5 dB

System description

Panel 1 1 x 245 mm Plastered Brick
Details Panel Size 2.7 m x 4.0 m, Partition surface mass = 392 kg/m²

freq. (Hz)	R (dB)	Roct (dB)
50	39	
63	35	37
80	40	
100	39	
125	44	42
160	45	
200	51	
250	46	48
315	48	
400	51	
500	53	53
630	56	
800	58	
1000	60	60
1250	61	
1600	63	
2000	64	64
2500	66	
3150	68	
4000	69	69
5000	71	



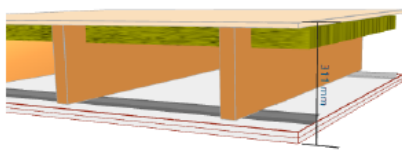
Proposed separating floor/ceiling – new ceiling and insulation between joists.

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 09/09/2024

Job Name:



R_w 56 dB

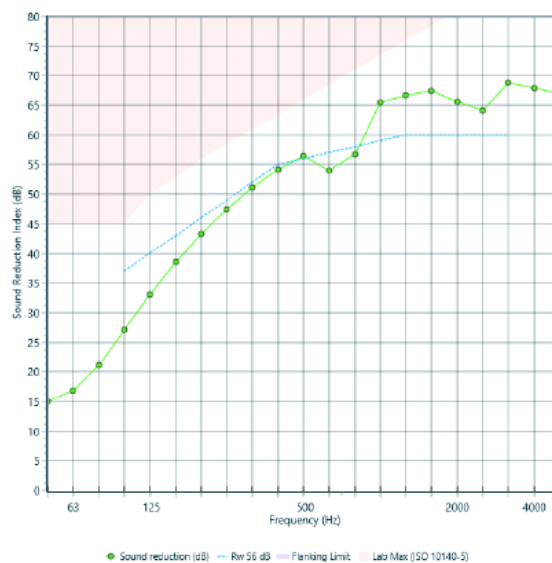
C -4 dB

Ctr -11 dB

System description

Panel 1 1 x 12.5 mm SoftBoard
Frame Solid Joist with resilient rail (250 mm x 45 mm), Stud spacing 600 mm, Cavity Width 268 mm + 60 mm Fibreglass (10kg/m³) 60mm
Panel 2 2 x 15 mm Gyproc Fireline 15mm
Details Panel Size 2.7 m x 4.0 m, Partition surface mass = 28 kg/m², Mass-air-mass resonant frequency = 62 Hz

freq. (Hz)	R (dB)	Roct (dB)
50	15	
63	17	17
80	21	
100	27	
125	33	31
160	39	
200	43	
250	47	46
315	51	
400	54	
500	56	55
630	54	
800	57	
1000	65	61
1250	67	
1600	67	
2000	66	66
2500	64	
3150	69	
4000	68	68
5000	67	



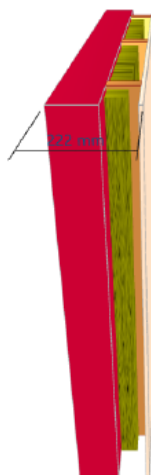
Proposed internal separating wall – stud wall with insulation to existing brick wall.

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 09/09/2024

Job Name:



R_w 59 dB

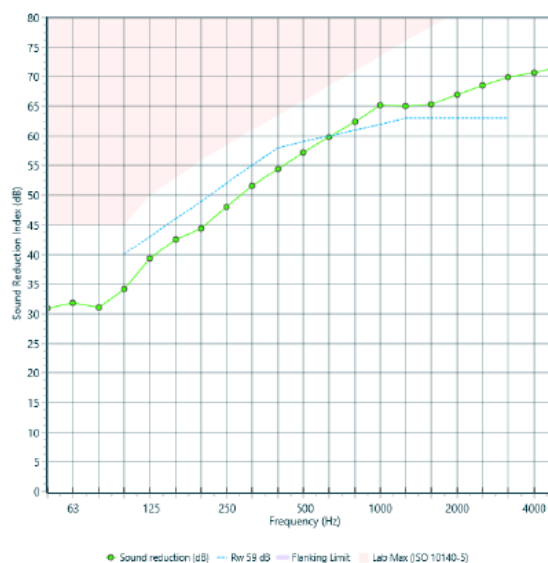
C -2 dB

Ctr -8 dB

System description

Panel 1 1 x 122 mm Plastered Brick
Frame Timber stud (90 mm x 45 mm), Stud spacing 600 mm, Cavity Width 90 mm + 60 mm Fibreglass (10kg/m³) 60mm
Panel 2 1 x 10 mm Plasterboard
Details Panel Size 2.7 m x 4.0 m, Partition surface mass = 203 kg/m², Mass-air-mass resonant frequency = 74 Hz

freq. (Hz)	R (dB)	Roct (dB)
50	31	
63	32	31
80	31	
100	34	
125	39	37
160	43	
200	44	
250	48	47
315	52	
400	54	
500	57	57
630	60	
800	62	
1000	65	64
1250	65	
1600	65	
2000	67	67
2500	68	
3150	70	
4000	71	71
5000	72	





Appendix D – Report Author Details

This report has been produced by Neil Martin, BSc (Hons), PGDip, CEnvH MCIEH, MIOA.

Neil is the principal acoustic consultant at Martin Environmental Solutions Ltd, a consultancy company specialising in Environmental Health disciplines including environmental noise assessment and control. He holds a Bachelor's degree in Environmental Health and Diploma in Acoustics. He is a Chartered Member of the Chartered Institute of Environmental Health and a Full member of the Institute of Acoustics.

Neil has over 20 years' experience working within a Local Authority Environmental Health setting, principally in the Environmental Protection and Public Health areas and has been working as an acoustic consultant since 2011.

Since its formation, Martin Environmental Solutions has advised and assisted many groups including residents, developers and local authorities about the problems of noise and vibration in the environment and the possible solutions. Neil also acts as an expert witness in the area of acoustics.