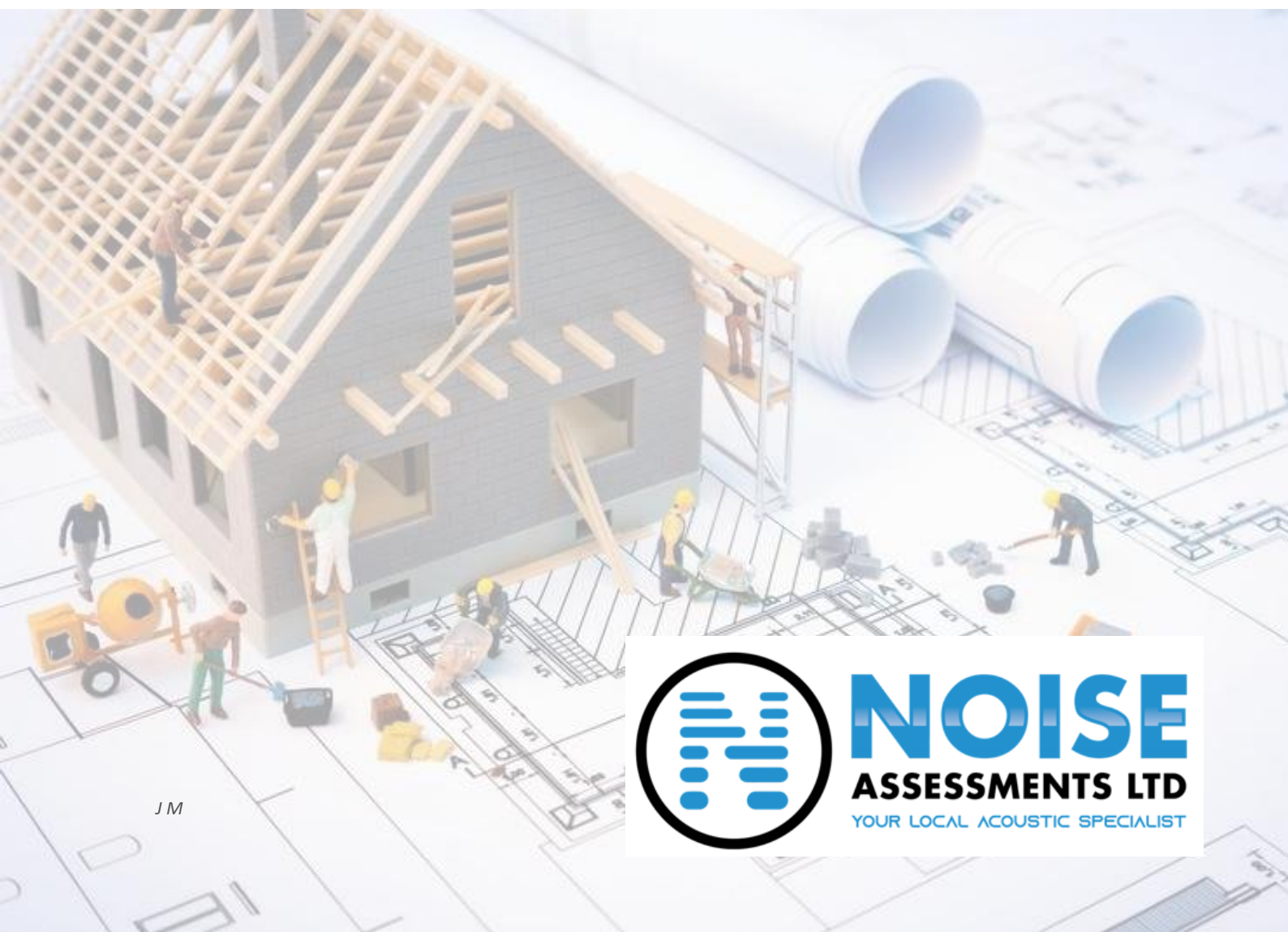


NOISE IMPACT ASSESSMENT

BS 8233:2014

**Conversion of the
first/second floor
above Takeaway to
create 2 new
residential
apartments**



JM



NOISE
ASSESSMENTS LTD
YOUR LOCAL ACOUSTIC SPECIALIST

REPORT DETAILS

Report Title	Noise Assessment: Conversion of the first/second floor above Takeaway to create 2 new residential apartments
Site Address	289A Oldham Rd, Middleton, Manchester, M24 2DW
Project No.	NALPRO250425.01a
Consultant Contact	jonathan@noiseassessments.co.uk

QUALITY ASSURANCE

Issue No.	Status	Issue Date	Comments	Author	Approved
1	Final	15/05/25	-		
				J Mape BSc (Hons) PgDip IOA Cert. Environ. Noise Noise Consultant	D Warren Director

This report has been prepared by Noise Assessments the trading name of Noise Assessments Limited, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

Noise Assessments Limited – Companies House Registered No. 12207511

Contents

Assessment Summary	1
1. Proposal	3
2. Existing Context.....	3
3. Criteria.....	3
4. Nearest Sensitive Receptor Locations.....	10
5. Subjective Impressions	10
6. Measurement Locations	10
7. Measurement Procedure	11
8. Measurement Equipment.....	11
9. Weather Conditions	11
BS4142:2014 Assessment from the Side of the Site	11
10. Noise Survey	11
17. Noise level Calculations	12
18. Conclusions	15
19. Uncertainties.....	16
20. Appendices.....	17
APPENDIX A –Apartment Layout	17
APPENDIX B - Measurement Details	22
APPENDIX C - Equipment Details	22
APPENDIX D - Calibration Details.....	22
APPENDIX E - Meteorology Details	22
APPENDIX F – Terminology and Definitions.....	25

Assessment Summary

A commercial property seeking the Council Planning Approval to create two apartments on the first/second floor above ground floor takeaway which is currently not operating (herein referred to as the site) (see Appendix A Drawings) at 289A Oldham Rd, Middleton, Manchester, M24 2DW.

Based on a review of the site visit and client information there is an extraction flue at the side to the left of the site which exits above the eaves.

The takeaway is closed and unoccupied as a new tenant is due to move in soon. Therefore, day and night noise has been captured outside, but the noise from the takeaway is based on noise data from the manufacturer.

Takeaway extraction noise at the side of the site

A noise survey was conducted on the 26th and 27th April 2025 to understand the potential noise impact from the assumed commercial activity. For the purposes of the assessment the loudest 16hr day and 8hr night were selected and are tabulated below.

Measurement Summary				
Measurement	Date	Period	LAeq (dB)	LAFmax (dB)
M1	26/04/25	Day (16hr)	55	N/A
	27/04/25	Night (8hr)	46	76

Given the difficulty to obtain noise from the flue, noise prediction has been based on information taken from the extraction system data sheets,

Utilising data sheet

Plant	LAeq	r1, m	r2, m	Barrier	rating	At NSR 1	Window open
1x extraction	64	4	1	-5	3	50	35

Point source distance attenuation

$$L_y = 20 \times \log \frac{r_1}{r_2}$$

Where L_y is the distance attenuation factor and $r_{1,2}$ are the source -> measurement distance and source -> NSR distance in metres respectively

Based on the extraction flue in operation during the daytime, recorded daytime and night time noise, the results demonstrate that, with windows open, internal LAeq and LAmx noise levels during the day and night-time within habitable rooms on the first/second floors at the side of the development are expected to exceed the recommended target levels from time to time, and openable windows

cannot therefore be relied upon for background ventilation for an extended period. However, windows can be relied upon for purge ventilation, as required.

Assuming the use of minimum double glazed 32 dB Rw+Ctr rated glazing (10/12/6mm) and 32 dB Dne,w+Ctr trickle ventilation (Trimvent Select Xtra S13), daytime environmental noise would be reduced from 55 dB LAeq,16hr to interior levels of 23 dB LAeq,16hr within habitable rooms. The assumed standard of construction would place the internal levels in habitable rooms below 35 dB, therefore within the desirable category.

Assuming the use of minimum double glazed 32 dB Rw+Ctr rated glazing (10/12/6mm) and 32 dB Dne,w+Ctr trickle ventilation (Trimvent Select Xtra S13), night-time environmental noise in bedrooms would be reduced from 46 dB LAeq,8hr to interior levels 14 dB LAeq,8hr with maximum individual noise events reduced from 76.0 dB LAFmax to 44 dB LAFmax, therefore within the desirable category.

Amenity Space

No outdoor amenity space is proposed.

Noise intrusion levels with residential windows open have been determined assuming that the insulation provided by a window, partially open for ventilation, is 15 dB as suggested by BS 8233 and WHO. The noise impact within bedrooms and living spaces because of noise breakout is expected to be **desirable**.

1. Proposal

- 1.1 A commercial property seeking the Council Planning Approval to create two apartments on the first/second floor above ground floor takeaway which is currently not operating (herein referred to as the site) (see Appendix A Drawings) at 289A Oldham Rd, Middleton, Manchester, M24 2DW.
- 1.2 Based on a review of the site visit and client information there is an extraction flue at the side to the left of the site which exits above the eaves.
- 1.3 The takeaway is closed and unoccupied as a new tenant is due to move in soon. Therefore, day and night noise has been captured outside, but the noise from the takeaway is based on noise data from the manufacturer.

2. Existing Context

- 2.1 The site) is part of a commercial building located along a street with two-way traffic for vehicles.
- 2.2 The site is surrounded by a community of residential properties commercial units.

3. Criteria

Noise Policy Statement for England (NPSE)

- 3.1 The NPSE sets out the Government's policy on noise and includes the long-term vision of promoting good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.
- 3.2 This long-term vision is supported by the following aims:
 - avoid significant adverse impacts on health and quality of life;
 - mitigate and minimise adverse impacts on health and quality of life; and
 - where possible, contribute to the improvement of health and quality of life.
- 3.3 Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:
 - NOEL (No Observed Effect Level) – this is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise;
- 3.4 There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation. They are:
 - NOEL (No Observed Effect Level) – this is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise;

- LOAEL (Lowest Observed Adverse Effect Level) – this is the level above which adverse effects on health and quality of life can be detected.

3.5 Extending these concepts further, NPSE leads to the concept of a significant observed adverse effect level:

- SOAEL (Significant Observed Adverse Effect Level) – this is the level above which significant adverse effects on health and quality of life occur.

3.6 NPSE acknowledges that it is not possible to have a single objective noise-based measure that defines NOEL, LOAEL and SOAEL that is applicable to all sources of noise in all situations. It is therefore suggested that more specific advice from other applicable noise standards and guidance could be employed to determine suitable noise level criteria within the overall principles of the NPSE.

National Planning Policy Framework (NPPF)

3.7 The revised NPPF was updated in December 2024 and sets out the government’s planning policies for England and how these are expected to be applied. This document replaces the first NPPF published in March 2012 and includes minor clarifications to the revised version published in July 2018, February 2019, July 2021, and 2023.

3.8 Where issues of noise impact are concerned the NPPF provides brief guidance in Chapter 15 ‘*Conserving and enhancing the natural environment*’ as follows:

Paragraph 170:

Planning policies and decisions should contribute to and enhance the natural and local environment by preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.

Paragraph 180:

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

- b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and
- c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

Paragraph 182:

Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

Planning Practice Guidance (PPG)

- 3.9 PPG is written in support of the NPPF and provides an increased level of specific planning guidance.
- 3.10 It suggests that noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. It is also suggested that noise should not be considered in isolation and separately from issues such as the economic, social and other environmental dimensions of proposed development.
- 3.11 Local planning authorities' plan-making and decision taking should take account of the acoustic environment and in doing so consider:
 - whether or not a significant adverse effect is occurring or likely to occur;
 - whether or not an adverse effect is occurring or likely to occur; and
 - whether or not a good standard of amenity can be achieved.

Technical Guidance

ProPG: Planning and Noise

- 3.12 The Institute of Acoustics (IOA), the Association of Noise Consultants (ANC) and the Chartered Institute of Environmental Health (CIEH) have jointly produced a Professional Practice Guidance (ProPG) document focussing on noise sensitive development. 'ProPG: Planning & Noise' (ProPG)iii describes an approach to encourage good acoustic design in proposed new residential development predominantly exposed to airborne transportation noise. It includes a two-stage

design process consisting of an initial noise risk assessment, followed by a systematic consideration of the following key elements:

1. demonstrating a “Good Acoustic Design Process”;
2. observing internal “Noise Level Guidelines”;
3. undertaking an “External Amenity Area Noise Assessment”; and
4. consideration of “Other Relevant Issues”.

3.13 An initial noise risk assessment should be performed to “provide an indication of the likely risk of adverse effects from noise were no subsequent mitigation to be included as part of the development proposal.”

3.14 The risk of adverse effect is determined based on the external day and night-time noise levels across the development as shown below in Table 1.

Table 1. ProPG Initial Site Noise Risk Assessment (Taken from Figure 1 of ProPG)

Indicative daytime noise levels <i>L_{Aeq,16hr}</i>	Indicative night-time Noise Levels <i>L_{Aeq,8hr}</i>	Risk	Potential Effect without mitigation
> 70 dB	> 60 dB	High	 Increasing risk of adverse effect
60 – 70 dB	50 – 60 dB	Medium	
50 – 60 dB	40 – 50 dB	Low	
< 50 dB	< 40 dB	Negligible	No Adverse Effect

a. Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.

b. Indicative noise levels are the combined free-field noise level from all sources of transport noise and may also include industrial/commercial noise where this is present but is “not dominant”.

c. *L_{Aeq,16hr}* is for daytime 0700 – 2300, *L_{Aeq,8hr}* is for night-time 2300 – 0700.

d. An indication that there may be more than 10 noise events at night (2300 – 0700) with *L_{Amax, F}* > 60 dB means the site should not be regarded as negligible risk.

3.15 Where the level of risk is assessed as greater than ‘negligible’, a furthermore detailed assessment is required, which includes assessing both internal and external noise levels at the proposed residential properties. Following on from the initial risk assessment, ProPG states that a planning application should demonstrate good acoustic design has been incorporated, according to the following procedures:

1. “Check the feasibility of relocating or reducing noise levels from relevant sources.
2. Consider options for planning the site or building layout.
3. Consider the orientation of proposed building(s).
4. Select construction types and methods for meeting building performance requirements.
5. Examine the effects of noise control measures on ventilation, fire regulation, health and safety, cost, CDM (construction, design and management) etc.

6. Assess the viability of alternative solutions.
7. Assess external amenity area noise."

3.16 The document provides guidance on internal and external noise levels which should not be exceeded which are very similar to those in BS 8233:2014.

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

3.17 This British Standard was published in February 2014 and supersedes BS 8233:1999, which is withdrawn.

3.18 This Standard provides guidance for the control of noise in and around buildings and is applicable to the design of new buildings, or refurbished buildings undergoing a change of use, but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building.

3.19 For dwellings, the main considerations are:

- for bedrooms, the acoustic effect on sleep; and
- for other rooms, the acoustic effect on resting, listening and communicating.

3.20 It is desirable that the internal ambient noise level does not exceed the following guideline values.

Activity	Location	07:00 – 23:00	23:00 – 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 $L_{Aeq,8hour}$

3.21 For traditional external areas that are used for amenity space, such as gardens, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments.

3.22 However, it is also recognized that these external noise guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces but should not be prohibited.

3.23 When determining the sound insulation of a building envelope, the requirements should be determined on the basis of the assessment of:

- the level and characteristics of the noise outside the building
- the design noise levels in the rooms and other spaces of the building

3.24 Initial estimates may be obtained using calculations based on single-figure data, however, for detailed noise intrusion calculations to be undertaken, knowledge or assumptions of the following are required.

- Frequency characteristics of the noise source(s).
- Frequency characteristics of the sound reducing elements.
- Surface area of the common construction separating the two areas.
- Reverberation time of the receiving space.

World Health Organisation (WHO)

3.25 The World Health Organisation 'Guidelines for Community Noise' 1999 aims to provide environmental health authorities and professionals with guidance on the adverse health effects of community noise on people.

3.26 This document presents a summary of research and opinions on the impacts of noise and recommends guideline values for avoidance of particular effects e.g. annoyance and sleep disturbance. It is the primary reference point for other guidance value based documents, such as BS 8233.

3.27 The following guideline values have been derived according to specific environments. The values relevant to residential development are shown in the table below.

Specific Environment	Critical Health Effect(s)	L _{Aeq} (dB)	Time base (hrs)	L _{Amax,f} (dB)
Outdoor living area	Serious annoyance, daytime and evening	55	16	-
	Moderate annoyance, daytime and evening	50	16	-
Dwelling, indoors	Speech intelligibility and moderate annoyance, daytime and evening	35	16	
Inside bedrooms	Sleep disturbance, night-time	30	8	45

3.28 The above values are consistent with those recommended within BS 8233, however unlike BS 8233:2014, the WHO guidelines present a specific guide value for L_{Amax} levels affecting bedrooms. The research suggests that sleep disturbance effects have been observed at individual L_{Amax} exposures of 45 dB or less. Consequently, it is important to limit the number of individual noise events with a L_{Amax} exceeding 45 dB.

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

3.29 This British Standard was published in February 2014 and supersedes BS 8233:1999, which is withdrawn.

3.30 This Standard provides guidance for the control of noise in and around buildings and is applicable to the design of new buildings, or refurbished buildings undergoing a change of use, but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building.

3.31 For dwellings, the main considerations are:

- for bedrooms, the acoustic effect on sleep; and
- for other rooms, the acoustic effect on resting, listening and communicating.

3.32 It is desirable that the internal ambient noise level does not exceed the following guideline values.

Activity	Location	07:00 – 23:00	23:00 – 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 $L_{Aeq,8hour}$

BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound'

3.33 BS4142 Is a recognised standard for assessing the noise impact of fixed plant machinery via relation of noise emissions to current background noise levels.

3.34 Whilst there are no prescribed standards for the assessment of noise impact where human voice is the primary source, reference can be made to 'BS8233:2014 – Guidance on sound insulation and noise reduction for buildings' [British Standards Institution] which gives guideline criteria for internal ambient noise levels in residential dwellings.

4. Nearest Sensitive Receptor Locations

- 4.1 The nearest noise sensitive receptors (NSR) have been identified as the proposed apartments.

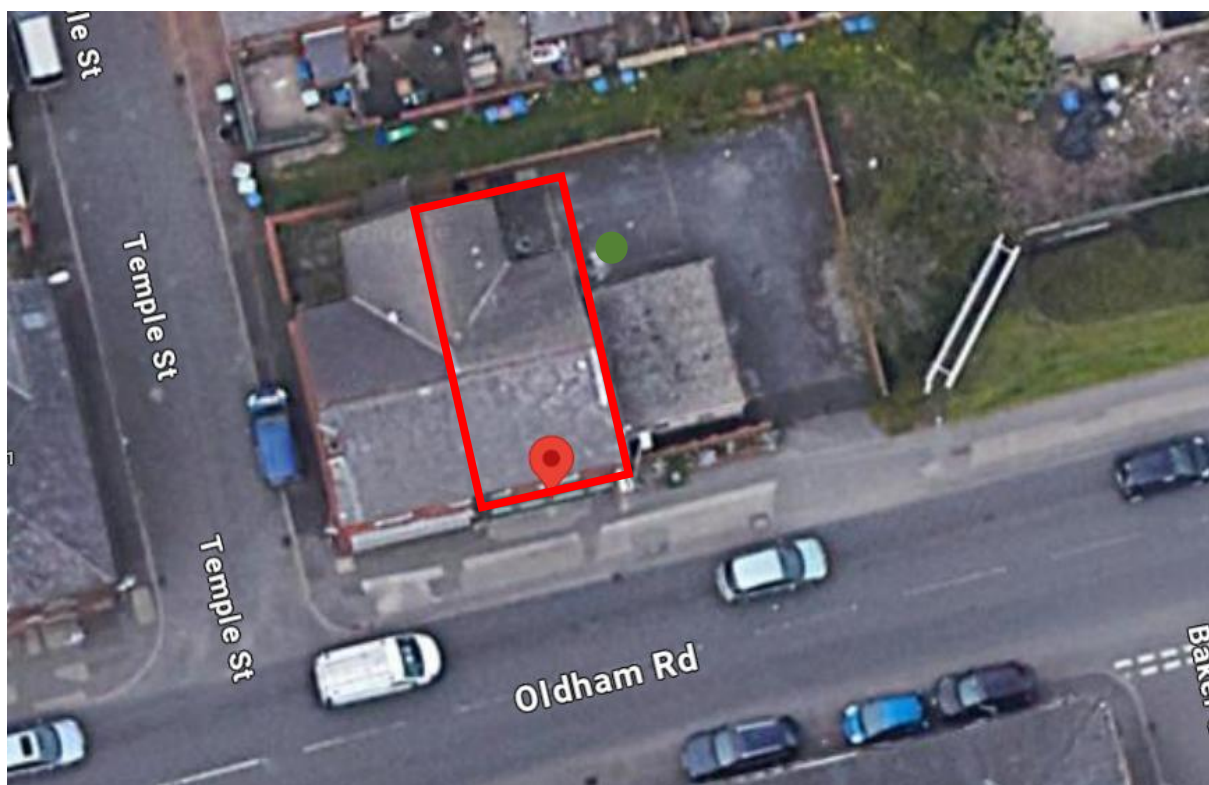
5. Subjective Impressions

- 5.1 The noise climate on Oldham Road is dominated by road traffic including cars and HGVs / LGVs and buses where tyre / road interaction noise was most prominent. Secondary noise sources have been identified as conversing pedestrians.

6. Measurement Locations

- 6.1 Unattended/attended background noise measurement was undertaken outside at a representative location to the NSR at the rear of the site.
- 6.2 Measurement and NSR locations are shown in figure 1 below:

Figure 1: Site & Measurement Location



● Background measurement location M1

▬ Site location

7. Measurement Procedure

- 7.1 Background noise levels were measured between the 26th to 27th April 2025. Full measurement times and durations can be found in **Appendix B**.

8. Measurement Equipment

- 8.1 Measurements were undertaken using a calibrated, Pulsar N45 class 1 sound level meters. Full equipment details can be found in **Appendix B**.
- 8.2 Measurements at the monitoring locations were 'free field' (no vertical reflective surfaces within 3.5 metres of the microphone) and at a height of between 1.2 – 1.5 metres above ground level. During all measurements the microphone was protected with an outdoor windshield.
- 8.3 The calibration level of the meters was checked before and after the survey with a sound calibrator with no variation in the levels observed.
- 8.4 The sound level meter was set to measure various noise parameters including LAeq and LAmax values using a 'fast' time weighting.
- 8.5 Full calibration details can be found in **Appendix C**.

9. Weather Conditions

- 9.1 Weather conditions were deemed acceptable for background noise measurement. Full meteorological conditions are detailed in **Appendix E**.

BS4142:2014 Assessment from the Side of the Site

10. Noise Survey

- 10.1 A noise survey was conducted on the 26th and 27th April 2025 to understand the potential noise impact from the assumed commercial activity. For the purposes of the assessment the loudest 16hr day and 8hr night were selected and are tabulated below.

Measurement Summary				
Measurement	Date	Period	LAeq (dB)	LAFmax (dB)
M1	26/04/25	Day (16hr)	55	N/A
	27/04/25	Night (8hr)	46	76

10.2 Given the difficulty to obtain noise from the flue, noise prediction has been based on information taken from the extraction system data sheets.

11. Utilising data sheet

Plant	LAeq	r1, m	r2, m	Barrier	rating	At NSR 1	Window open
1x extraction	64	4	1	-5	3	50	35

12.

13. Point source distance attenuation

$$14. L_y = 20 \times \log \frac{r_1}{r_2}$$

15. Where L_y is the distance attenuation factor and $r_{1,2}$ are the source → measurement distance and source → NSR distance in metres respectively

16.

16.1 Based on the extraction flue in operation during the daytime, recorded daytime and night time noise, the results demonstrate that, with windows open, internal LAeq and LMax noise levels during the day and night-time within habitable rooms on the first/second floors at the side of the development are expected to exceed the recommended target levels from time to time, and openable windows cannot therefore be relied upon for background ventilation for an extended period. However, windows can be relied upon for purge ventilation, as required.

17. Noise level Calculations

17.1 Noise intrusion levels with windows open have been determined assuming that the insulation provided by a window, partially open for ventilation, is 15 dB as suggested by BS 8233 and WHO.

Parameter	Measured External Free-Field Noise Level facade	Internal Noise Level with Windows Open	Internal Noise Level with Windows Closed and Vents Open	ProPG Guidance	BS 8233 Classification
Living Space					
Daytime L _{Aeq,16hr} (dB)	55	40	23	Low Risk of Adverse Effects	Desirable (≤35)
Bedrooms					
Daytime L _{Aeq,16hr} (dB)	55	40	23	Low Risk of Adverse Effects	Desirable (≤35)
Bedrooms					
Night-time L _{Aeq,8hr} (dB)	46	31	14	Low Risk of Adverse Effects	Desirable (≤30)

Parameter	Measured External Free-Field Noise Level facade	Internal Noise Level with Windows Open	Internal Noise Level with Windows Closed and Vents Open	ProPG Guidance	BS 8233 Classification
Night-time $L_{Amax(f)}$ (dB)	76	61	44	Low Risk of Adverse Effects	Desirable (≤ 45)

Internal Noise Levels in Habitable Rooms

17.2 Assuming the use of minimum double glazed 32 dB R_w+C_{tr} rated glazing (10/12/6mm) and 32 dB $D_{ne,w}+C_{tr}$ trickle ventilation (Trimvent Select Xtra S13), daytime environmental noise would be reduced from 55 dB $L_{Aeq,16hr}$ to interior levels of 23 dB $L_{Aeq,16hr}$ within habitable rooms. The assumed standard of construction would place the internal levels in habitable rooms below 35 dB, therefore within the desirable category.

17.3 Assuming the use of minimum double glazed 32 dB R_w+C_{tr} rated glazing (10/12/6mm) and 32 dB $D_{ne,w}+C_{tr}$ trickle ventilation (Trimvent Select Xtra S13), night-time environmental noise in bedrooms would be reduced from 46 dB $L_{Aeq,8hr}$ to interior levels 14 dB $L_{Aeq,8hr}$ with maximum individual noise events reduced from 76.0 dB L_{AFmax} to 44 dB L_{AFmax} , therefore within the desirable category.

Amenity Space

17.4 No outdoor amenity space is proposed.

AVO – Stage 1 Overheating Risk Assessment

17.5 In January 2020 the Acoustics Ventilation and Overheating: Residential Design Guide (AVO) was published by the Association of Noise Consultants. Therefore, the risk of overheating within proposed dwellings can be considered in line with the AVO guide.

17.6 In accordance with AVO, the noise levels across the proposed development site as described in the table above have been compared to the Level 1 risk assessment shown in Table 3.2 of AVO, to establish the potential risk of an overheating condition.

17.7 The table in Section 13 above indicates that site will be subject to a 'Medium' risk of an overheating condition. Therefore, mitigation is considered necessary and discussed below.

Assessment of Daytime Noise Levels in Living Rooms and Bedrooms

17.8 The results demonstrate that, with windows open, internal LAeq and LMax noise levels during the day and night-time within habitable rooms at the rear of the development on the first floor are expected to exceed the recommended target levels and openable windows from time to time cannot therefore be relied upon for ventilation for an extended period.

17.9 The assessment suggests that an alternative means of ventilation is required to provide occupants with the ability to maintain adequate background ventilation rates without having to rely entirely on openable windows. Care should be taken not to confuse a reliance on closed windows to achieve the noise level criteria with the need to have sealed glazing units. Windows may remain openable for rapid or purge ventilation, or at the occupant's choice.

17.10 In situations where there is a reliance on closed windows to meet the guide value, there needs to be an appropriate alternative means of ventilation that does not compromise the façade insulation or the resulting internal noise level. Typically trickle ventilators can be used and sound attenuating types are available.

17.11 The following is a list of manufacturers and suppliers of acoustic ventilation products.

Rytens

<http://rts.vents.co.uk/blog/products/background-ventilators/>

Titon

<https://www.titon.com/uk/products/ventilation-systems/window-vents/>

R.W.Simon Ltd

<https://www.rwsimon.co.uk/products/window-ventilation/>

Greenwood

<https://www.greenwood.co.uk/window-vents>

17.12 For reducing the likelihood of overheating in the summer months the details of the window vents for the bedrooms/lounge volumetric calculations showing that the size of the vents will be sufficient for 4ACH is show below:

17.13 Habitable rooms to have 2500mm² of ventilation.

18. Conclusions

18.1 A commercial property seeking the Council Planning Approval to create two apartments on the first/second floor above ground floor takeaway which is currently not operating (herein referred to as the site) (see Appendix A Drawings) at 289A Oldham Rd, Middleton, Manchester, M24 2DW.

18.2 Based on a review of the site visit and client information there is an extraction flue at the side to the left of the site which exits above the eaves.

18.3 The takeaway is closed and unoccupied as a new tenant is due to move in soon. Therefore, day and night noise has been captured outside, but the noise from the takeaway is based on noise data from the manufacturer.

Takeaway extraction noise at the side of the site

18.4 A noise survey was conducted on the 26th and 27th April 2025 to understand the potential noise impact from the assumed commercial activity. For the purposes of the assessment the loudest 16hr day and 8hr night were selected and are tabulated below.

Measurement Summary				
Measurement	Date	Period	LAeq (dB)	LAfmax (dB)
M1	26/04/25	Day (16hr)	55	N/A
	27/04/25	Night (8hr)	46	76

18.5 Given the difficulty to obtain noise from the flue, noise prediction has been based on information taken from the extraction system data sheets.

Utilising data sheet

Plant	LAeq	r1, m	r2, m	Barrier	rating	At NSR 1	Window open
1x extraction	64	4	1	-5	3	50	35

18.6 Point source distance attenuation

$$L_y = 20 \times \log \frac{r_1}{r_2}$$

Where L_y is the distance attenuation factor and $r_{1,2}$ are the source -> measurement distance and source -> NSR distance in metres respectively

18.7 Based on the extraction flue in operation during the daytime, recorded daytime and night time noise, the results demonstrate that, with windows open, internal LAeq and LMax noise levels

during the day and night-time within habitable rooms on the first/second floors at the side of the development are expected to exceed the recommended target levels from time to time, and openable windows cannot therefore be relied upon for background ventilation for an extended period. However, windows can be relied upon for purge ventilation, as required.

18.8 Assuming the use of minimum double glazed 32 dB Rw+Ctr rated glazing (10/12/6mm) and 32 dB Dne,w+Ctr trickle ventilation (Trimvent Select Xtra S13), daytime environmental noise would be reduced from 55 dB LAeq,16hr to interior levels of 23 dB LAeq,16hr within habitable rooms. The assumed standard of construction would place the internal levels in habitable rooms below 35 dB, therefore within the desirable category.

18.9 Assuming the use of minimum double glazed 32 dB Rw+Ctr rated glazing (10/12/6mm) and 32 dB Dne,w+Ctr trickle ventilation (Trimvent Select Xtra S13), night-time environmental noise in bedrooms would be reduced from 46 dB LAeq,8hr to interior levels 14 dB LAeq,8hr with maximum individual noise events reduced from 76.0 dB LAFmax to 44 dB LAFmax, therefore within the desirable category.

Amenity Space

No outdoor amenity space is proposed.

18.10 Noise intrusion levels with residential windows open have been determined assuming that the insulation provided by a window, partially open for ventilation, is 15 dB as suggested by BS 8233 and WHO. The noise impact within bedrooms and living spaces because of noise breakout is expected to be **desirable**.

19. Uncertainties

19.1 The monitoring equipment is subject to a 1dB error margin, however calibration before and after measurements allows the drift within the margin to be monitored and thus demonstrates that minimal drift occurred throughout the measurements.

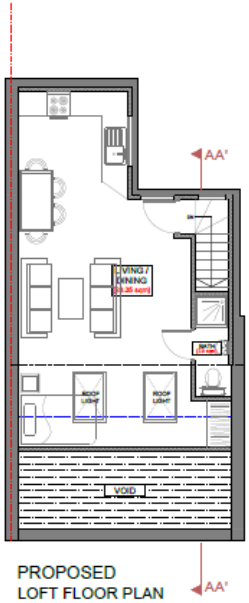
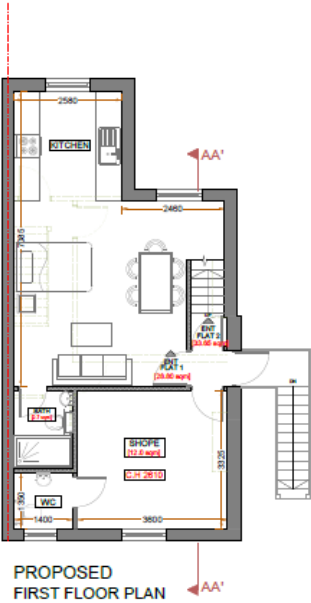
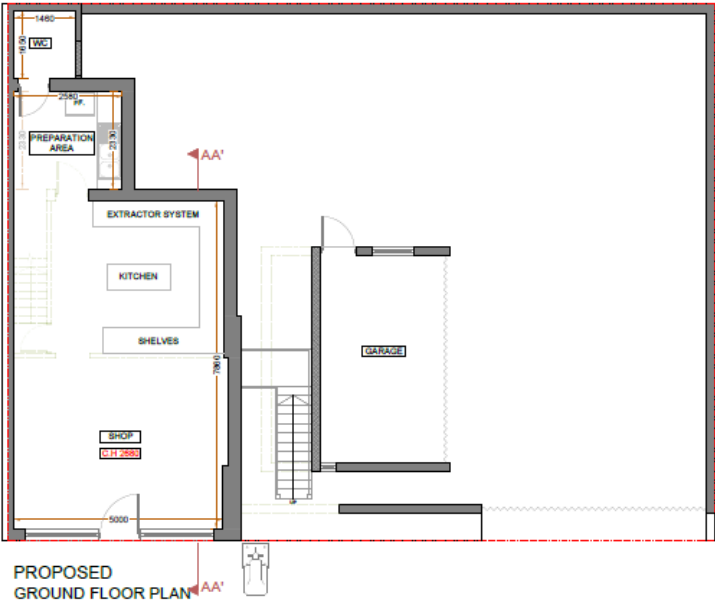
19.2 InsULTM sound insulation software states an error margin of +/- 3dB for RW values.

20. Appendices

APPENDIX A –Apartment Layout

LEGEND

Area calculated from blue outlined
whereas headroom height up to 1500mm



G6
studio

COPYRIGHT:
G6 STUDIO RESERVES ALL RIGHTS TO THESE DRAWINGS, DESIGN AND/OR ANY OTHER DATA CONTAINED HERE IN NO PART OF THE DRAWINGS, DESIGNS AND/OR OTHER DATA CONTAINED HERE IN MAY BE REPRODUCED, MODIFIED, TRANSMITTED OR USED IN ANY FORM BY ANY MEANS FOR ANY PURPOSE WITH OUT THE PRIOR WRITTEN CONSENT OF G6 STUDIO OTHER THAN FOR THE SOLE PURPOSE FOR WHICH SUCH DRAWINGS, DESIGN AND/OR OTHER DATA ARE PROVIDED.

DIMENSIONS:
CONTRACTORS SHALL WORK FROM FIGURED DIMENSIONS ONLY CONTRACTORS MUST CHECK ALL DIMENSIONS ON SITE. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO G6 STUDIO LTD FOR CLARIFICATION BEFORE PROCEEDING ON RELEVANT WORK.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT EDITION OF THE BUILDING REGULATIONS 1981 (INCLUDING AMENDMENTS) AND ALL RELEVANT BRITISH STANDARDS/CODES OF PRACTICE
3. THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE WORKS ON SITE. ALL DIMENSIONS TO BE CHECKED PRIOR TO FABRICATION OF MATERIALS AND COMMENCEMENT OF WORK.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS
5. ALL PROPOSED MATERIALS ARE TO BE SIMILAR IN APPEARANCE TO THAT OF THE EXISTING HOUSE, UNLESS OTHERWISE STATED

NOTES:

1. ALL DIMENSIONS TO BE CHECKED ON SITE.
2. ALL DISCREPANCIES TO BE REPORTED TO G6 STUDIO.
3. REFER TO STRUCTURAL SPECIFICATION FOR ALL STRUCTURAL ELEMENTS.

NO.	DATE	BY	DESCRIPTION
A	25.12.2024	MA	FIRST ISSUE

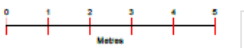
PROJECT
289a Oldham road
MIDDLETON
M24 2DW

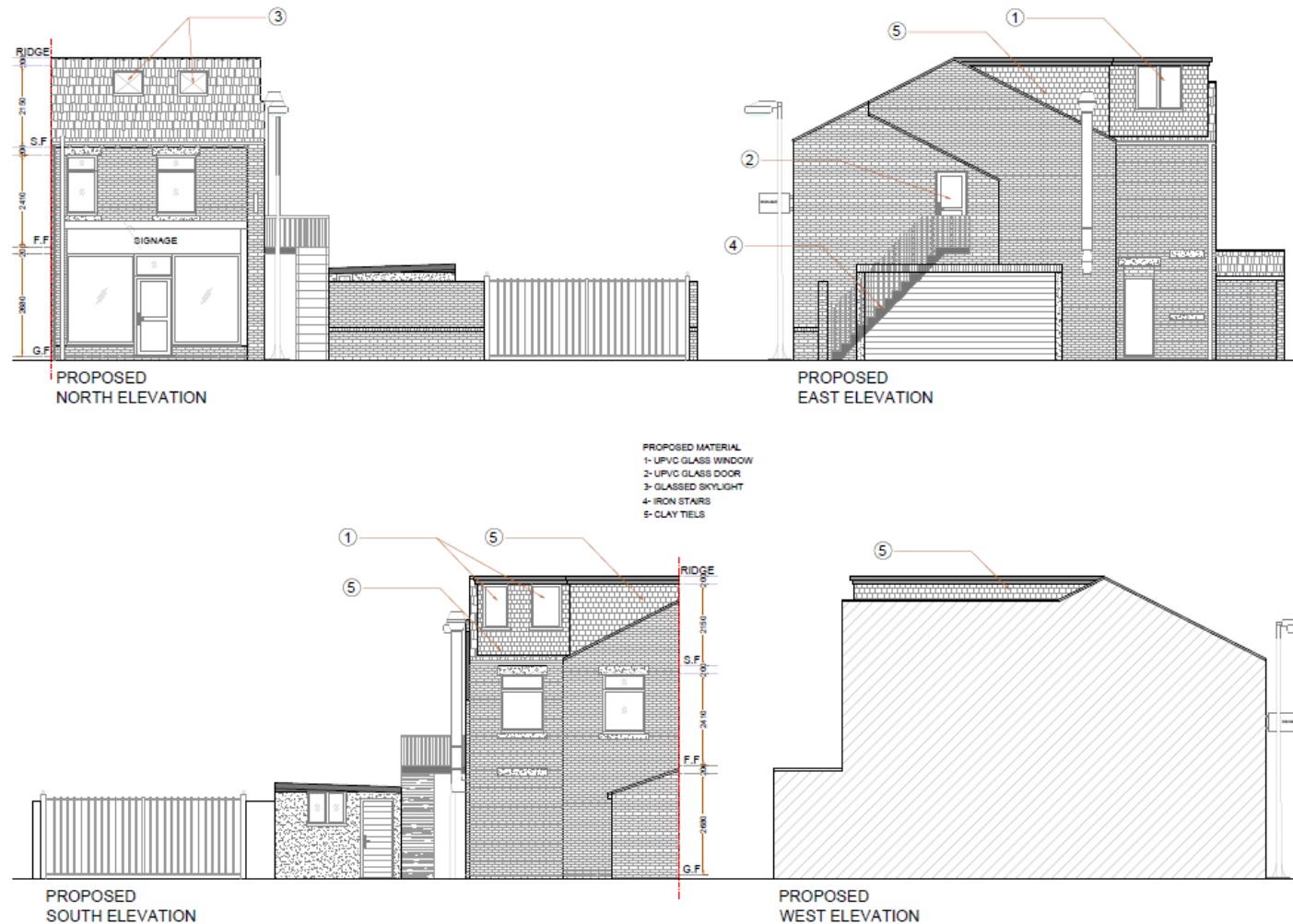
DWG TITLE

CLIENT ----- **ISSUE** A

DWG NO: 289A - OR - 102

SCALE 1:100 **DATE** 25.12.2024 **DRAWN BY** MA





**G6
studio**

COPYRIGHT:

G6 STUDIO RESERVES ALL RIGHTS TO THESE DRAWINGS, DESIGN AND/OR ANY OTHER DATA CONTAINED HEREIN IN NO PART OF THE DRAWINGS, DESIGN AND/OR OTHER DATA CONTAINED HEREIN MAY BE REPRODUCED, MODIFIED, TRANSMITTED OR USED IN ANY FORM BY ANY MEANS FOR ANY PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF G6 STUDIO OTHER THAN FOR THE SOLE PURPOSE FOR WHICH SUCH DRAWINGS, DESIGN AND/OR OTHER DATA ARE PROVIDED.

DIMENSIONS:

CONTRACTORS SHALL WORK FROM FIGURED DIMENSIONS ONLY. CONTRACTORS MUST CHECK ALL DIMENSIONS ON SITE. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO G6 STUDIO LTD FOR CLARIFICATION BEFORE PROCEEDING ON RELEVANT WORK.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT EDITION OF THE BUILDING REGULATIONS 1981 (INCLUDING AMENDMENTS) AND ALL RELEVANT BRITISH STANDARDS/CODES OF PRACTICE.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE WORK ON SITE. ALL DIMENSIONS TO BE CHECKED PRIOR TO FABRICATION OF MATERIALS AND COMMENCEMENT OF WORKS.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS.
5. ALL PROPOSED MATERIALS ARE TO BE SIMILAR IN APPEARANCE TO THAT OF THE EXISTING HOUSE, UNLESS OTHERWISE STATED.

NOTES:

1. ALL DIMENSIONS TO BE CHECKED ON SITE.
2. ALL DISCREPANCIES TO BE REPORTED TO G6 STUDIO.
3. REFER TO STRUCTURAL SPECIFICATION FOR ALL STRUCTURAL ELEMENTS.

NO.	DATE	INITIALS	DESCRIPTION
-----	------	----------	-------------

PROJECT
 289a Oldham road
 MIDDLETON
 M24 2DW

DWG TITLE

CLIENT	ISSUE
--------	-------

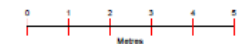
---	A
-----	---

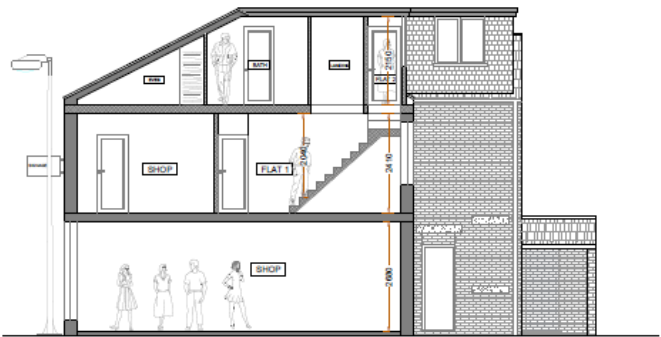
DWG NO:
 289A - OR - 104

SCALE
 1:100@A3

DATE
 25.12.2024

DRAWN BY
 MA





PROPOSED
SECTION BB'



EXISTING
SECTION BB'

G6
studio

COPYRIGHT:
G6 STUDIO RESERVES ALL RIGHTS TO THESE DRAWINGS, DESIGN AND/OR ANY OTHER DATA CONTAINED HEREIN. NO PART OF THE DRAWINGS, DESIGNS AND/OR OTHER DATA CONTAINED HEREIN MAY BE REPRODUCED, MODIFIED, TRANSMITTED OR USED IN ANY FORM BY ANY MEANS FOR ANY PURPOSE WITH OUT THE PRIOR WRITTEN CONSENT OF G6 STUDIO. OTHER THAN FOR THE SOLE PURPOSE FOR WHICH SUCH DRAWINGS, DESIGN AND/OR OTHER DATA ARE PROVIDED.

DIMENSIONS:
CONTRACTORS SHALL WORK FROM FIGURED DIMENSIONS ONLY. CONTRACTORS MUST CHECK ALL DIMENSIONS ON SITE. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO G6 STUDIO LTD FOR CLARIFICATION BEFORE PROCEEDING ON RELEVANT WORK.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT EDITION OF THE BUILDING REGULATIONS 1991 (INCLUDING AMENDMENTS) AND ALL RELEVANT BRITISH STANDARDS/CODES OF PRACTICE.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE WORKS ON SITE. ALL DIMENSIONS TO BE CHECKED PRIOR TO FABRICATION OF MATERIALS AND COMMENCEMENT OF WORKS.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS.
5. ALL PROPOSED MATERIALS ARE TO BE SIMILAR IN APPEARANCE TO THAT OF THE EXISTING HOUSE, UNLESS OTHERWISE STATED.

NOTES:

1. ALL DIMENSIONS TO BE CHECKED ON SITE.
2. ALL DISCREPANCIES TO BE REPORTED TO G6 STUDIO.
3. REFER TO STRUCTURAL SPECIFICATION FOR ALL STRUCTURAL ELEMENTS.

A	25.12.2024	1/A	FIRST ISSUE
ISSUE	DATE	NOTES	DESCRIPTION

PROJECT
289a Oldham road
MIDDLETON
M24 2DW

DWG TITLE

CLIENT

ISSUE
A

DWG NO:
289A - OR - 105

SCALE 1:100 @ A3
DATE 25.12.2024
DRAWN BY MA



APPENDIX B - Measurement Details				
Measurement	Start Date	Start Time	End Date	End Time
M1	26/04/25	11:30	27/04/25	10:15

APPENDIX C - Equipment Details				
Equipment	Make	Model	Class	Serial Number
Sound Meter	Pulsar	N45	1	1365
Calibrator	Pulsar	PM1	1	011121C

APPENDIX D - Calibration Details					
Measurement	Calibrator Ref Level (dB)	Level Before (dB)	Deviation Before (dB)	Level After (dB)	Deviation After (dB)
M1	94.0	94.0	0	94.0	0

APPENDIX E - Meteorology Details						
Date	Temp C	Wind Speed m/s*	Wind Direction	Humidity %	Precipitation mm	Cloud Cover (Oktas)
26/04/25	19	2.9	ssw	84	0.0	5/8

*Windspeeds measured on site using a Skywatch Xplorer 2 Anemo-Thermometer.

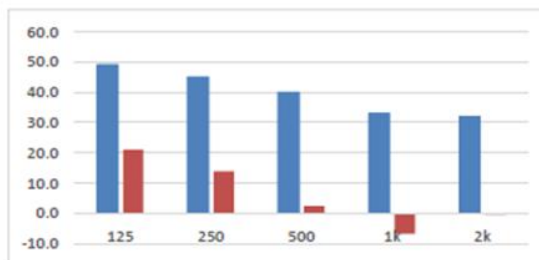
Appendix F – BS8233 Rigorous Design Calculation example and AVO Table

BS8233:2014 Specification Calculation Summary

Bedroom - night time

Room Properties		Sound Insulation Properties					
Room Width (m)	3.0	Freq. Hz	125	250	500	1k	2k
Room Depth (m)	4.0	Wall, dB R_{w+Ctr}	41	45	45	54	58
Room Height (m)	2.4	Roof, dB R_{w+Ctr}	41	45	45	54	58
Glazed Area (m ²)	1.8	Glazing, dB R_{w+Ctr}	26	27	34	40	38
Is dwelling within roof?	☒	Vents, dB R_{w+Ctr}	34	38	43	42	34

Noise Levels, dB



External Level	42 dB LAeq
Internal Level	9 dB LAeq
Insertion Loss	33 dB LAeq

Sound Insulation Requirement

	Minimum Sound Insulation Requirement		Suitable Systems
Glazing	32	dB R_{w+Ctr}	Double Glazing <i>10/12/6mm</i>
Ventilation	40	dB R_{w+Ctr}	Acoustically treated trickle vent <i>Titon Xtra Sound Attenuator V75+C50</i>

Technical Calculations

Frequency, Hz	125	250	500	1k	2k
Term 1	0.000553	0.00022	7E-05	8.8E-05	0.00055
Term 2	0.000628	0.0005	1E-04	2.5E-05	4E-05
Term 3	5.96E-05	2.4E-05	2.4E-05	3E-06	1.2E-06
Term 4	0	0	0	0	0
Internal, dB L_{eq}	21.1	13.8	2.4	-6.8	-0.5
Internal, dB LAeq	5.0	5.2	-0.8	-6.8	0.7

Façade Components

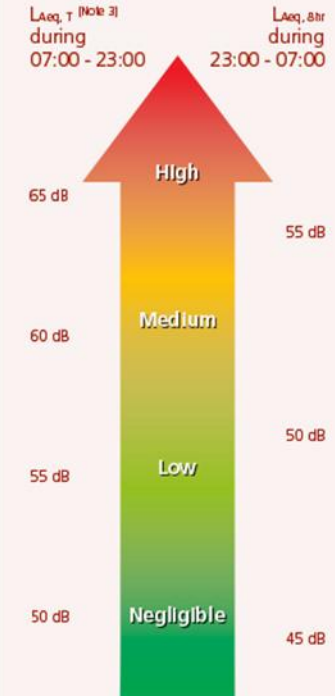
Roof	Not Within Roof Space
Glazing	Double Glazing
Vents	Acoustically treated trickle vent

Calculations conducted in accordance with BS8233:2014 rigorous calculation method

$$L_{eq} = 10 \log_{10} \left(\sum_{i=1}^n \frac{10^{\frac{L_{eq_i}}{10}}}{n} \right) \quad (S)$$

Suitable systems gives as reference only. Other products that achieve the required sound insulation values are available.

Table 3-2 Guidance for Level 1 site risk assessment of noise from transport noise sources ^[Note 1] relating to overheating condition

Risk category for Level 1 assessment ^[Note 5]	Potential Effect without Mitigation	Recommendation for Level 2 assessment
	 Increasing risk of adverse effect	Recommended Optional Not required
	Use of opening windows as primary means of mitigating overheating is not likely to result in adverse effect	

Note 1 The noise levels suggested assume a steady road traffic noise source but may be adapted for other types of transport. All levels are external free-field noise levels.

Note 2 The values presented in this table should not be regarded as fixed thresholds and reference can also be made to relevant dose-response relationships, ^[15, 17].

Note 3 A decision must be made regarding the appropriate averaging period to use. The averaging period should reflect the nature of the noise source, the occupancy profile and times at which overheating might be likely to occur. Further guidance can be found within the 2014 IEMA Guidelines ^[23].

Note 4 Refer also to references ^[1, 17, 18, 22] for further guidance regarding individual noise events. Where 78dB LAFmax is normally exceeded during the night-time period (23:00-07:00), a Level 2 assessment is recommended.

Note 5 The risk of an adverse effect occurring will also depend on how frequently and for what duration the overheating condition occurs. Refer to Figure 3-2.

Note 6 To evaluate the risk category for a dwelling, all three aspects of external noise exposure (i.e. daytime, night-time and individual noise events) should be evaluated. The highest risk category for any of the three aspects applies.

APPENDIX F – Terminology and Definitions

Noise

Sound only becomes noise (often defined as ‘unwanted sound’ or sound that is considered undesirable or disruptive) when it causes or contributes to some harmful or otherwise unwanted effect, like annoyance or sleep disturbance.

Acoustic Environment

Sound from all sound sources as modified by the environment.

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

Value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval T , has the same mean square sound pressure as a sound under consideration whose level varies with time.

A-weighting

The human ear is most sensitive to frequencies in the range 1 kHz to 5 kHz. On each side of this range the sensitivity falls off. A-weighting is used in sound level meters to replicate this sensitivity and respond in the same way as the human ear.

Octave Band

Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.

Maximum Sound Pressure Level $L_{Amax,T}$

Highest value of the A-weighted sound pressure level with a specified time weighting that occurs during a given event or measuring period.

The $L_{A10,T}$ Sound Level

The A-weighted sound pressure that is exceeded for 10% of a given time interval, T . It is often used to evaluate road traffic noise.

The $L_{A90,T}$ Sound Level

The A-weighted sound pressure that is exceeded for 90% of a given time interval, T , measured using time weighting F . It is often referred to as the background noise level and which might in part be an indication of relative quietness at a given location

Free-field Level

The sound pressure level away from reflecting surfaces.

NOTE Measurements made 1.2 m to 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as free-field. To minimize the effect of reflections the measuring position has to be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source).

Façade Level

The sound pressure level 1 m in front of the façade.

NOTE Facade level measurements of LpA are typically 1 dB to 2 dB higher than corresponding free-field measurements because of the reflection from the facade.

Indoor Ambient Noise

Noise in a given situation at a given time, usually composed of noise from many sources, inside and outside the building, but excluding noise from activities of the occupants.

ABOUT US

HERE TO HELP

We undertake various noise assessments and noise survey for a wide range of clients to meet their noise requirements and obligations, including for Planning Applications, new developments, building extensions, change of use, small businesses, restaurants, shops and much more.

QUALIFIED AND EXPERIENCED

Over 15 years UK and international acoustic engineering experience of undertaking Noise Monitoring, acoustic solutions, noise survey and Reporting.

Members of the Institute of Acoustics. Undertaken projects in Manchester, North West and across the UK.

GET THE PROJECT DONE

We offer competitive, cost effective acoustic solutions, delivering a noise survey report which complies with Local Planning Authority requirements and sound insulation or health and safety obligations.

We can also undertake Noise Modelling if required.