



PROPERTY PORTFOLIO & INVEST MULTI-LET

**157 BOLTON ROAD,
BURY**

NOISE ASSESSMENT FOR PLANNING

29 September 2025

AEC REPORT: P5666/R01a/WJK

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1.0 INTRODUCTION

- 1.1 Acoustic & Engineering Consultants Limited (AEC) has been appointed to undertake a noise assessment for the proposed conversion of a former office to a 5 bedroom, 6 occupant House in Multiple Occupation (HMO) at 157 Bolton Road, Bury. This noise assessment is required as part of the associated planning application for the development.
- 1.2 This report details the noise levels measured onsite, the assessment criteria and details of the assessment undertaken regarding the implications of the noise levels on the acoustic design of the proposed scheme. It includes the glazing performance and ventilation strategy required to meet appropriate internal noise level limits.
- 1.3 Acoustic terminology used throughout the report is described in Appendix A.

2.0 SITE AND PROPOSED DEVELOPMENT

- 2.1 The development site is a former office premises which is two storeys high on the front elevation and three storeys high on the rear elevation. The site is located on Bolton Road (A58) which runs along the north-western elevation of the site. There is a mixture of residential and commercial premises surrounding the proposed development, including takeaways to the south-west and a car wash to the north-east.
- 2.2 The proposed scheme incorporates the conversion of the existing building to 5 residential dwellings split over the ground and first floors.
- 2.3 A location plan showing the proposed development is provided in the following Figure 2.1

Figure 2.1 – Site Location Plan



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- 2.4 Bury Metropolitan Borough Council (**BMBC**) have provided the following in a delegated report in relation to noise:

'Insufficient information has been submitted to demonstrate that the main road the property is sited upon and the sites' location close to a hot food takeaway would not cause noise intrusion or odour issues to future occupiers of the proposed development, nor whether any measures to protect their amenity would harm the host building or the visual amenity of the street scene. Therefore, the proposed development would be contrary to Policies H2/4: 'Conversions', EN7/2: 'Noise Pollution' of the Bury Unitary Development Plan, Policy JP-S5: 'Clean Air' of the Places for Everyone Joint Development Plan and the National Planning Policy Framework'.

3.0 BASIS OF ASSESSMENT

National Planning Policy Framework

- 3.1 Current national planning policies are set out in the National Planning Policy Framework (NPPF) published by the Department for Communities and Local Government, in March 2012, and revised most recently in February 2025.
- 3.2 The planning policies which relate specifically to noise are reproduced below:

"187. Planning policies and decisions should contribute to and enhance the natural and local environment by:

- (e) 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. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.*

198. 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.*

200. 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."

- 3.3 Further to the above, the Governments Planning Practice Guidance (PPG) published in March 2014 and updated in September 2023 states:

'Noise needs to be considered when development may create additional noise, or would be sensitive to the prevailing acoustic environment (including any anticipated changes to that environment from activities that are permitted but not yet commenced). When preparing plans, or taking decisions about new development, there may also be opportunities to make improvements to the acoustic environment. Good acoustic design needs to be considered early in the planning process to ensure that the most appropriate and cost-effective solutions are identified from the outset.'

- 3.4 In addition, the guidance indicates that, whilst noise can override other planning concerns, it is important to look at noise in the context of the wider characteristics of a development proposal, its likely users and its surroundings, as these can have an important effect as to whether or not noise is likely to pose a concern.

Local Authority Requirements

- 3.5 Based on similar previous schemes assessed by AEC, it is anticipated that BMBC requires that internal noise levels in new residential properties should comply with guidance contained in BS8233:2014 'Guidance on sound insulation and noise reduction for buildings' and The Association of Noise Consultants (ANC) document Professional Practice Guidance (Pro-PG) on Planning and Noise 'New Residential Development' (2017).
- 3.6 The recommended criteria would generally apply to external noise as it affects the internal acoustic environment for steady sources without a specific character, such as road traffic and should relate to noise levels within the space during normal hours of occupation.
- 3.7 Based on the above guidance, the proposed daytime and night-time noise limits to be achieved in habitable rooms due to transportation noise sources are provided in Table 3.1, below.

Table 3.1 – Internal Noise Level Limits within Habitable Rooms

Activity	Location	Noise Level Limit, dB		
		Daytime 0700 – 2300h $L_{Aeq,16h}$	Night-Time 2300 – 0700h	
			$L_{Aeq,8h}$	$L_{Amax,F}$
Resting	Living Room	35	-	-
Dining	Dining Room/Area	40	-	-
Sleeping (daytime resting)	Bedroom	35	30	45

- 3.8 In relation to maximum noise levels in bedrooms during the night-time period, Note 4 of ProPG states that "Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. In most circumstances in noise sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed $45dB_{L_{Amax}}$ more than 10 times a night."
- 3.9 Based on the above, it is proposed that the façade is designed so that maximum noise levels in bedrooms do not typically exceed $45dB_{L_{Amax,F}}$ during the night-time period (2300h to 0700h) and any non-typical events such as a one-off emergency siren or noisy motorbike pass-by will be excluded from the assessment.

Ventilation Provision

Whole Dwelling Ventilation

- 3.10 The above internal noise level limits need to be achieved whilst whole dwelling ventilation is being provided, as defined in Approved Document F ‘*Ventilation*’ (2021) of the Building Regulations (ADF). Whole dwelling ventilation is typically achieved either via trickle ventilators or by mechanical means.

Purge Ventilation

- 3.11 In relation to purge ventilation, ProPG suggests that as this should only occur occasionally (e.g. to remove odour from painting and decorating or from burnt food), the internal desired noise levels are not generally applicable. Therefore, internal noise levels due to windows being opened for purge ventilation has not been considered further.

Control of Overheating

- 3.12 ADF advises that information about overheating is provided in Approved Document O (ADO). Paragraph 0.3 of ADO states that the “*document applies to new residential buildings only*”. As the proposed development is a conversion of an existing building, the guidance presented in the Association of Noise Consultants document, ‘*Acoustics Ventilation and Overheating – Residential Design Guide*’ (AVO), issued in January 2020 for daytime and night-time internal noise levels has been considered.
- 3.13 AVO is a design guide only and not a statutory document and the Local Authority may have their own requirements.
- 3.14 Table 3.3 of AVO provides guideline values for allowable noise from transportation sources whilst windows are open for the control of overheating. With reference to this, it is proposed that windows can be utilised in the control of overheating provided that the resultant internal ambient noise levels are below approximately 50dB_{L_{Aeq,16h}} during the daytime, and 42dB_{L_{Aeq,8h}} and 65dB_{L_{Amax,F}} during the night-time. These limits are the upper end of the medium risk category for adverse effects.
- 3.15 AVO states that where transportation is the main source of noise, “*it is assumed that a partially open window will provide an outside-to-inside level difference of 13dB and is considered representative of typical domestic rooms with simple façade openings of around 2% of the floor area*”.
- 3.16 Based on the above, the maximum allowable external noise levels where windows could still be considered for control of overheating as shown in Table 3.3 below.

Table 3.3 – External Free-field Noise Levels Above Which AVO Indicates Opening Windows Should Not be Used for the Control of Overheating.

Location	Noise Limit, dB		
	Daytime 0700 – 2300h L _{Aeq,16h}	Night-time 2300 – 0700h	
		L _{Aeq,8h}	L _{Amax,F}
Living Room	63	--	--
Bedroom	63	55	78

4.0 BASELINE NOISE LEVELS

- 4.1 An unattended baseline noise survey was undertaken by AEC at first floor level on the north-western and north-eastern elevations of the existing building from 1130h on Thursday 11th September to 1115h on Friday 12th September 2025. The measurement locations are shown as A and B on Figure 2.1 above.
- 4.2 The noise measurements were carried out under façade conditions and in general accordance with BS7445-1: 2003 *'Description and measurement of environmental noise. Guide to quantities and procedures.'*
- 4.3 The dominant noise source on both elevations was observed to be road traffic along Bolton Road.
- 4.4 Full details of the noise survey is provided in Table B.1 in Appendix B with the measured noise data presented in Graphs B.1 and B.2. A summary of the measured noise levels is provided in Table 4.1 below.
- 4.5 In order to provide a realistic assessment of the typical maximum noise levels, the 90th percentile of the measured maximum noise levels logged every 15 minutes during the night-time period has been used to exclude irregular and unrepresentative noise events.

Table 4.1 –Summary of Measured Façade Ambient and Maximum Noise Levels

Date	Location	Noise Level, dB		
		Daytime 0700-2300, L _{Aeq,T}	Night-Time	
			2300-0700h, L _{Aeq, 8h}	Typical Maximum, L _{Amax}
11/09/2025	A	75.1*	68.9	87.2
	B	68.4*	62.8	80.5
12/09/2025	A	75.5*	-	-
	B	68.9*	-	-

*Shortened measurement period when equipment was installed and collected

5.0 ASSESSMENT OF PROPOSED DEVELOPMENT

External Noise Levels

- 5.1 For the purpose of this assessment, the average ambient 16-hour daytime and 8-hour night-time noise levels and the typical maximum noise levels shown in Table 4.1 have been used for the glazing and ventilation break-in noise calculations.
- 5.2 The noise measurements at Location A were undertaken under façade conditions, therefore, in order to convert the measured levels to free-field noise levels, a correction of -3dB has been applied to the measured levels as per guidance in BS7445-2: 1991 *'Description and measurement of environmental noise – Part 2: Guide to the acquisition of data pertinent to land use'*.
- 5.3 The determined free-field daytime and night-time noise levels are provided in the following Table 5.1:

Table 5.1 – Determined Free-Field Daytime and Night-time Assessment Noise Levels

Location	Noise Level, dB		
	Daytime 0700-2300, $L_{Aeq,16h}$	Night-Time	
		2300-0700h, $L_{Aeq,8h}$	Maximum, $L_{Amax,F}$
A	72	66	84
B	66	60	78

Glazing and Ventilation Requirements

- 5.4 Noise break-in calculations have been carried out to determine the acoustic requirements of the glazing and ventilation necessary to achieve appropriate internal noise levels. Calculations are based on the measured noise spectrum and room and glazing sizes provided. The minimum required glazing and ventilator performances are provided in Table 5.2, below.

Table 5.2 –Minimum Glazing and Ventilation Sound Insulation Requirements

Elevation	Period	Glazing Requirement	Ventilator
North-west	Day (Living Room)	35dBR _w and 32dBR _w + C _{tr}	44dB D _{n,e,w} *
North-west	Night (Bedrooms)	41dBR _w and 35dBR _w + C _{tr}	Mechanical Ventilation
North-east	Night (Bedrooms)	35dBR _w and 32dBR _w + C _{tr}	44dB D _{n,e,w} *
South-east	Night (Bedroom)	29dBR _w and 25dBR _w + C _{tr}	36dB D _{n,e,w}

*Ventilator specification can be achieved either with a through the wall vent or mechanical

- 5.5 It is understood that new windows and ventilation are proposed throughout the development. Specific product test data should be obtained and checked by an acoustician for compliance with the specification in Table 5.2, prior to procurement and installation. The ventilator requirements are specified in the open position. Suitable glazing build-ups to achieve the required sound insulation performances are provided in the following Table 5.3.

Table 5.3 –Suitable Glazing Constructions

Elevation	Floor	Room	Glazing	Ventilator
North-west	Ground	Living / Dining	10mm Glass /6-16mm TC/ 6mm Glass	Nuaire Fan / Wall Vent
	First	Bedroom 3	6mm Glass / 16mm Argon TC/ 8.8mm Optiphon Glass	Nuaire Fan / Wall Vent
North-east	Ground	Bedroom 1	10mm Glass /6-16mm TC/ 6mm Glass	Nuaire Fan / Wall Vent
	First	Bedrooms 4 & 5		
South-east	First	Bedroom 2	4-6mm Glass /TC/ 4-6mm Glass (Standard Double Glazing)	Simon Acoustics EHA

- 5.6 All ventilation requirements have been based on the use of a single ventilator per room. If more than one unit is required, the performance of each unit would need to be increased. This would require further development.
- 5.7 Windows can be openable provided that they are effectively acoustically sealed when closed and it is important that any frames and seals do not downgrade the sound insulation performance of the glazing.

Control of Overheating

- 5.8 A comparison between the determined noise levels shown in Table 5.1 and those provided in Table 3.2, indicates that windows to habitable rooms would require windows to be closed and the control of overheating provided by alternative means during both the daytime and night-time periods. Depending on ceiling heights, cooling may be achieved by the introduction of ceiling fans.

6.0 SUMMARY AND CONCLUSIONS

- 6.1 Acoustic & Engineering Consultants Limited (AEC) has been appointed to undertake a noise assessment for the proposed conversion from former office to a 5 bedroom House in Multiple Occupation (HMO) at 157 Bolton Road, Bury. This noise assessment is required as part of the associated planning application for the development.
- 6.2 This assessment considers the glazing performance and ventilation strategy required to meet relevant standards and guidance.
- 6.3 An unattended baseline noise survey was undertaken at first floor level on the north-western and north-eastern elevations of the existing building from 1530h on Thursday 11th September to 1115h on Friday 12th September 2025. The dominant noise sources were observed to be road traffic along the Bolton Road (A58).
- 6.4 Based on the noise assessment, mitigation measures are required to control internal noise levels to meet the levels provided in BS8233 and ProPG in all habitable rooms during both the daytime and night-time periods of the proposed development. The mitigation measures are in the form of acoustic ventilators and enhanced acoustic glazing as discussed in Section 5.0 of this report.

APPENDIX A - Acoustic Terminology

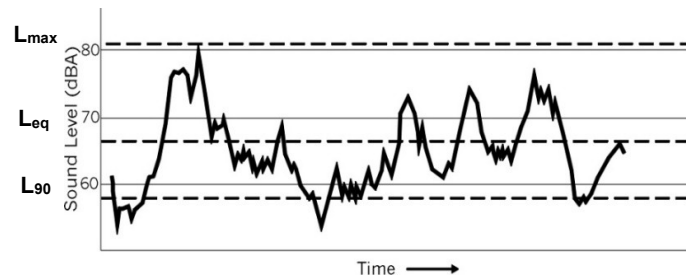
General

Sound is produced by mechanical vibration of a surface, which sets up rapid pressure fluctuations in the surrounding air. The rate at which the pressure fluctuations occur determines the pitch or *frequency* of the sound. The frequency is expressed in Hertz (*Hz*), that is, cycles per second. The human ear is sensitive to sounds from about 20 Hertz to 20,000 Hertz. Although sound can be of one discrete frequency - a 'pure tone' - most noise is made up of many different frequencies.

The human ear is more sensitive to some frequencies than others, and modern instruments can measure sound in the same subjective way. This is the basis of the A-weighted sound pressure level *dBA*, normally used to assess the effect of noise on people. The *dBA* weighting emphasizes or reduces the importance of certain frequencies within the audible range.

Sound / Noise Units

The figure below shows an example of sound level varying with time. Because of this variation over time the same period of noise can be described by several different levels. The most common of these are described below.



Commonly Used Descriptors for Sound / Noise

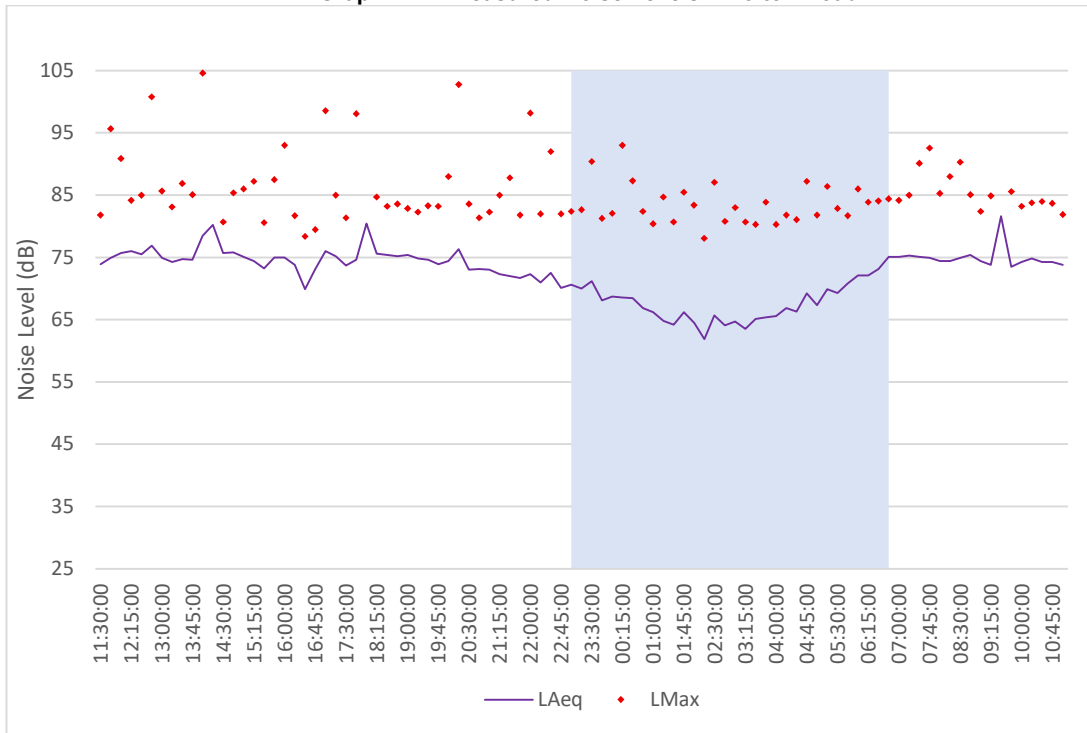
L_{Amax,F/S}	The maximum (A-weighted) sound level measured during a given time. 'Fast' or 'Slow' meter response should be cited.
L_{Aeq,T}	The equivalent continuous (A-weighted) sound level. It may be thought of as the "average" sound level over a given time, T. It is used for assessing noise from various sources: industrial and commercial premises, construction sites, railways and other intermittent noises. It can be considered as the "ambient" noise level.
L_{A90,T}	The (A-weighted) sound level exceeded for 90% of a measurement period. It is the value often used to describe the "background" noise.
Free-field Level	This refers to the sound level measured outside, away from reflecting surfaces.
Façade Level	This refers to the sound level measured outside, at 1m from a hard reflecting surface, typically 3dB greater than the free-field level.
R_w	Single number rating used to describe the <u>laboratory</u> airborne sound insulation properties of a material or building element over a range of frequencies, typically 100-3150Hz.
R'_w	Apparent sound reduction index - Single number rating used to describe the sound reduction index of an on-site construction over a range of frequencies, typically 100-3150Hz.
D_{n,e,w}	Element normalised level difference. Single number rating used to describe the sound insulation performance of small elements

APPENDIX B – Noise Survey Details

Table B.1 – Environmental Measurement Procedure

Date & Time of Survey:	1130h on Thursday 11 September to 1115h on Friday 12 September 2025.				
Personnel:	Liam Harrison (AEC).				
Equipment Used:	NTI XL2-TA Sound Level Meter (AEC Kit 6). NTI XL2-TA Sound Level Meter (AEC Kit 7).				
Calibration:	The sound level analysers, which conform to BS EN 61672-1: 2013 ' <i>Electroacoustics – Sound level meters - Part 1 Specifications</i> ' for Class 1 Type Z meters, was in calibration and check calibrated before and after the measurement periods using a Brüel & Kjær type 4231 (94dB) calibrator. There was no significant drift of calibration. Calibration certificates are available on request.				
Weather Conditions:	Date	Period	Wet/Dry	Avg Temp°C	Wind Direction
	11/09/2025	Day	Dry	15°C	South-westerly
	11-12/09/2025	Night	Dry	09°C	South-westerly
	12/09/2025	Day	Dry	14°C	South-westerly
Measurement Locations:	Measurements were undertaken at two locations on the development site shown as A and B on Figure 2.1 and described below. A – 1m from the Bolton Road elevation of the existing building at first floor level. B – 1m from the Buxton Street elevation of the existing building at first floor level.				
Measurement Details:	Measurements were undertaken façade conditions over 15-minute sampling periods in terms of L_{eq} , L_{90} and L_{max} .				
Measured Data:	Full results for the unattended measurements are shown in Graphs B.1 and B.2. Full octave band centre frequency data was obtained for all measurements.				

Graph B.1 – Measured Noise Levels – Bolton Road



Graph B.2 – Measured Noise Levels – Buxton Street

