

Proposed self contained apartments
11 Bolton Street, Bury, BL9 0EY
Noise Impact Assessment
For:
Nu-Fit Architectural Design Ltd
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1 Introduction

1.1 Overview

Environmental Noise Solutions Ltd (ENS) has been commissioned by Nu-Fit Architectural Design to carry out a noise impact assessment for a proposed self contained apartments to a proposed extension and refurbishment at an existing empty office block at 11 Bolton Street, Bury, BL9 0EY (hereafter referred to as 'the site').

This report has been written to support a planning application submitted to Bury Council to demonstrate that noise from the outside should not be a determining factor when granting planning permission.

The objectives of the noise impact assessment were therefore to:

- Determine the existing ambient and background noise levels in the vicinity of the site
- Assess the noise impact of the development on the nearest noise sensitive receptors (surrounding residential uses) in accordance with pertinent guidance
- Provide specific recommendations, where required, to avoid any potential for loss of amenity due to noise associated with the development

This report details the methodology and results of the assessment and provides recommendations for noise attenuation as appropriate.

The report has been prepared for Nu-Fit Architectural Design Ltd for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties referring to the report should consult Nu-Fit Architectural Design Ltd and ENS as to the extent to which the findings may be appropriate for their use.

A glossary of acoustic terms used in the main body of the text is contained in Appendix 1.

1.2 Site Description and Development Proposals

The site comprises an existing office building in an urban setting, circa 1.0 km from centre of Bury Town Centre. The site location is indicated in Figure 1.1 below.



Figure 1.1: Location of Development

During the course of the noise survey, the ambient (LA_{eq}) and background (LA_{90}) noise levels at the site were characterised by local and distant road traffic.

The nearest noise sensitive receptors to the development are considered to be both residential and commercial on Bolton street. It should be noted that the efflux point of the proposed kitchen extract flue will be located on the eastern elevation of the existing

building at 1.5 metres below the roofline of the building and therefore has no line-of-sight to the nearest noise sensitive receptors.

Any Proposed hours of operation for any proposed commercial use on the ground floor would be between 1200 hours until 22:30 hours Monday to Sunday.

2 Assessment Guidance

2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF)¹ was updated in February 2025 and sets out the Government's planning policies for England and how these are expected to be applied. Where issues of noise impact are concerned the NPPF provides brief guidance in paragraph 187 where it states that 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.....noise pollution'.

Paragraph 198 advises that:

'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.....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'.

The NPPF also refers to the 2010 DEFRA publication, the Noise Policy Statement for England (NPSE) which reinforces and supplements the NPPF.

2.2 Noise Policy Statement for England

The Noise Policy Statement for England ² (NPSE) sets out 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. 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
- Where possible, contribute to the improvement of health and quality of life

The NPSE describes the following levels at which noise impacts may be identified:

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

According to the explanatory notes in the statement, where a noise level falls between the lowest observable adverse effect level (LOAEL) and a level which represents a significant observable adverse effect level (SOAEL):

‘....all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life whilst also taking into consideration the guiding principles of sustainable development. This does not mean that such effects cannot occur.’

2.3 Planning Practice Guidance on Noise

Planning Practice Guidance³ (PPG) is an online resource providing additional guidance and elaboration on the NPPF. It advises that the Local Planning Authority should consider the acoustic environment in relation to:

- 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
- Whether or not a good standard of amenity can be achieved

In line with the Explanatory Note of the NPSE, the PPG references the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome. However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG acknowledges that: *‘...the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation’*.

Table 2.1: PPG Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not Noticeable	No Effect	No Observed Effect	No specific measures required
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

2.4 British Standard BS 4142:2014+A1:2019

BS 4142:2014+A1-2019 'Methods for Rating and Assessing Industrial and Commercial Sound' (BS 4142)⁴ describes methods for determining, at the outside of a building, noise levels from factories or industrial premises and a method for assessing whether the noise is likely to give rise to adverse impacts, and states:

'The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. Typically, the greater this difference, the greater the magnitude of the impact. For example:

A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context

A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context

The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context'

The rating level is described as the specific sound level (the equivalent continuous A-weighted sound pressure level at the assessment position (NSR) produced by the specific sound source over the given reference time interval) plus any adjustment for the characteristic features of the sound. The character correction relates to whether and to what degree the specific sound is assessed to have an element of tonality, impulsivity and/or characteristics that are readily distinctive against the residual acoustic environment.

The background noise level is the A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90 percent of a given time interval, T, measured using time weighting 'F' and quoted to the nearest whole number of decibels. The reference time interval of the specific sound is 1 hour during the daytime and 15 minutes during the night-time.

3 Noise Survey

3.1 Overview

In order to establish the ambient and background noise levels in the vicinity of the site, a baseline noise survey was carried out during on Monday 31st March through to Thursday 3rd April 2025.

For the purpose of the assessment, a single noise monitoring position (MP1) was adopted on the northern boundary of the site, considered representative of the nearest NSRs to the north (see Appendix 2 for the approximate monitoring position).

Noise measurements were undertaken in free field conditions at 3 metres above ground level (to maintain clearance from existing fences) using an NTi XL3 integrating sound level meter. The meter was connected to a windshield covered microphone positioned at the location detailed above.

The measurement system calibration was verified immediately before and after the survey period using a Bruel & Kjaer Type 4231 calibrator. No drift in calibration levels greater than 0.5 dB was noted. The noted weather conditions during the survey were dry with wind speeds < 5 m/s. Weather conditions were therefore considered appropriate for noise monitoring. Measurements consisted of A-weighted broadband parameters including LAeq and LA90, together with linear octave band data.

3.2 Summary

Table 3.1 presents a summary of the noise data for each measurement session, at each measurement position, rounded to the nearest decibel.

Table 3.1: Summary of Noise Measurement Data

Position	Date	Time	L _{Aeq} (dB)	L _{A90} (dB)	Comment
MP1	31/03/25	1135–2300	56	48	Local and distant road traffic
	01/04/25	0700–2300	58	49	
	02/04/25	0700–2300	57	51	
	03/04/25	0700–0900	55	48	
	31/03/25-01/04/25	2300–0700	47	44	
	01-02/04/25	2300–0700	49	42	
	02-03/04/25	2300–0700	48	40	

The ambient noise climate in the vicinity of the site was controlled by local and distant road traffic. Typical (most commonly occurring) background levels were measured at circa 48 dB LA90 (15 min) and 40 dB LA90 (15 min) respectively during the daytime and night-time.

4 Plant Noise Limits

Details of the proposed type of extract unit are not available at this stage. It is therefore considered appropriate to specify suitable noise limits to which any such plant items should conform.

Worst-case (lowest) daytime and night-time background levels in the vicinity of the nearest receptor were measured at circa 48 dB LA90 (15 min) and 40 dB LAeq (15 min) respectively.

Based upon the principles of BS 4142, it is considered appropriate that sound rating levels from fixed installations do not exceed the background sound rating levels detailed above in a free field position at the location of the nearest NSRs.

It is therefore considered that the cumulative noise rating level of fixed installations at the proposed care should not exceed the following noise rating levels at the nearest NSRs.

- 48 dB LAr (1 hour) during the daytime
- 40 dB LAr (15 min) during the night-time

It is considered that this is amenable to suitably worded planning condition, such as:

'The rating level of sound emitted from any fixed plant and/or machinery associated with the development at the use hereby approved shall not exceed background sound levels at the nearest noise sensitive receptors in accordance with the methodology of BS 4142:2014+A1:2019 (Methods for rating and assessing industrial and commercial sound) and/or its subsequent amendments.'

Appropriate noise control can be achieved by the judicious selection and siting of plant and/or standard noise mitigation techniques.

5 Summary and Conclusions

A noise survey and assessment has been performed for a proposal of 9 self contained apartments at 11 Bolton Street, Bury, BL9 0EY.

Based on the results of a baseline noise survey carried out at the site, It is considered that this is amenable to suitably worded planning condition, and that appropriate noise control can be achieved by the judicious selection and siting of plant and/or standard noise mitigation techniques.

Appendix 1 – Abbreviations and Definitions

Sound Pressure Level (Lp)

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

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

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

A-weighting

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise. Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$, The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T , has the same mean-square sound pressure as a sound that varies with time. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night time noise levels.

LA10, T

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

LA90, T

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

LAF max

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

Single Event Level / Sound Exposure Level (SEL or LAE)

The energy produced by a discrete noise event averaged over one second, regardless of the event duration. This allows for comparison between different noise events which occur over different lengths of time.

Weighted Sound Reduction Index (RW)

Single number quantity which characterises the airborne sound insulation properties of a material or building element over a defined range of frequencies (RW is used to characterise the insulation of a material or product that has been measured in a laboratory).

Appendix 2 – Approximate Noise Measurement Position

