

JPM ACOUSTICS

1 MORLEY LANE, MILNSBRIDGE

NOISE IMPACT ASSESSMENT

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1.0. INTRODUCTION

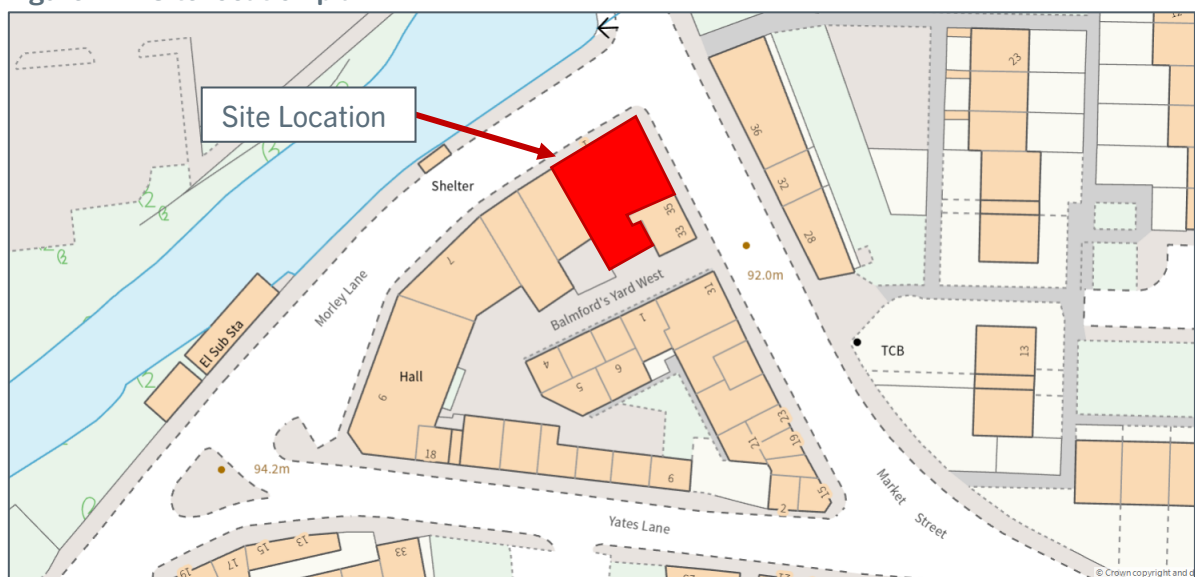
1.1. OVERVIEW

- 1.1.1. JPM Acoustics Ltd has been appointed to undertake a noise impact assessment in support of the proposed Change of Use at 1 Morley Lane, Milnsbridge.
- 1.1.2. At present, the premises comprises a retail space at ground floor level, with an apartment at 1st floor level. The retail space (Class E) is to be redeveloped for residential use (Class C3).
- 1.1.3. This noise impact assessment considers the potential impacts at the proposed residential properties from nearby sources of noise. The assessment has been undertaken with due regard to relevant planning policies, British Standards, and technical guidance documents relating to noise.
- 1.1.4. This report is necessarily technical in nature. Therefore, to assist the reader, a glossary of acoustic terminology is provided in **Appendix A**.

1.2. SITE LOCATION AND PROPOSED DEVELOPMENT

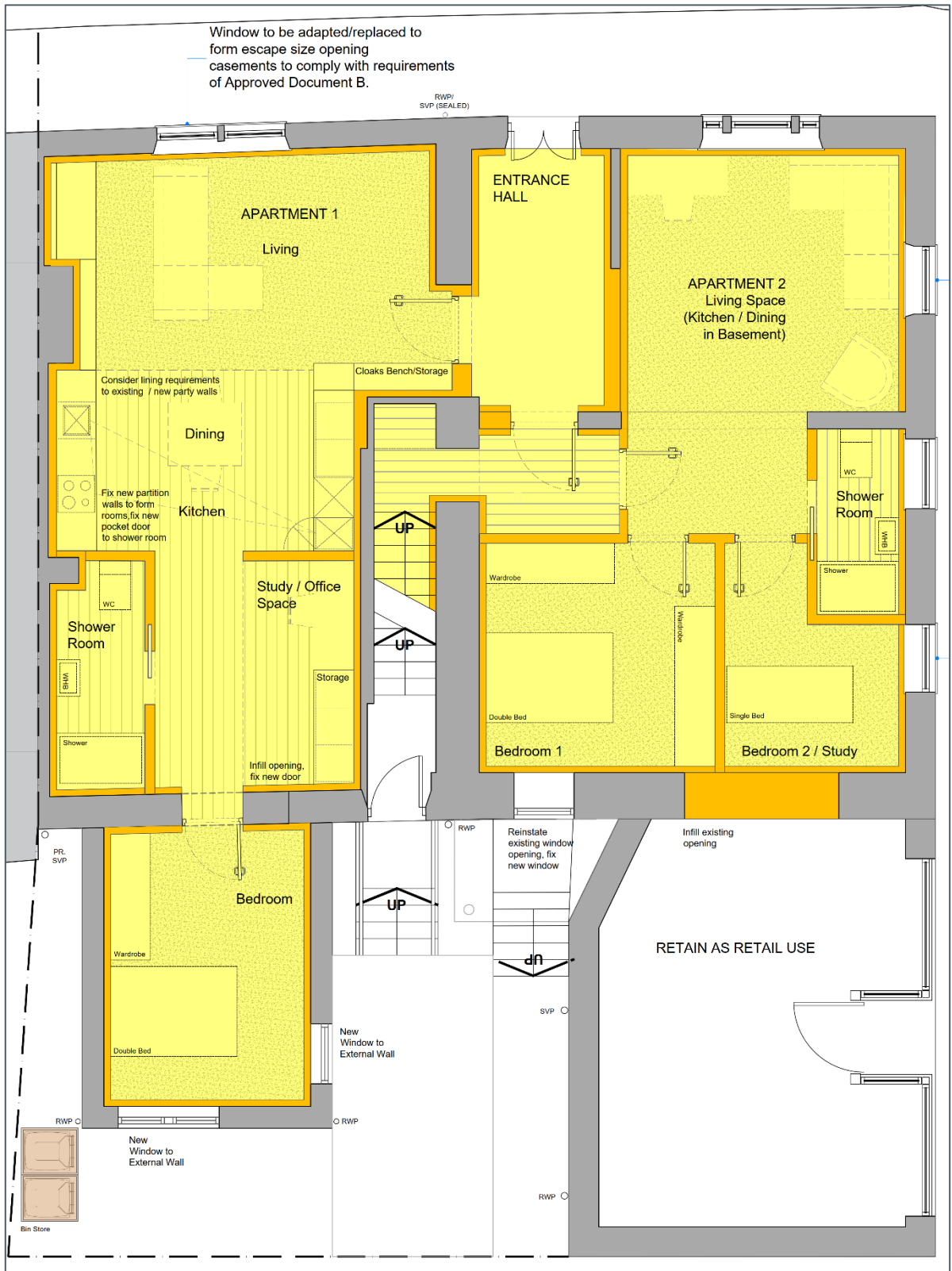
- 1.2.1. The site is located in the centre of Milnsbridge, at the junction of Morely Lane and Market Street. To the north of the site is the junction between the two roads; to the east is Market Street; to the south is Balmford's Yard West; and to the west there are adjoining retail premises and Morley Lane.
- 1.2.2. The site location is shown in **Figure 1.1**.

Figure 1.1: Site location plan



- 1.2.3. The development includes for two residential apartments at ground floor level and lower ground floor level, with two apartments at first floor level to be retained, and a retail space to be retained on the ground floor, albeit with a smaller footprint.
- 1.2.4. It is understood that a Mechanical Ventilation with Heat Recovery (MVHR) system is to be installed within each apartment. **Figure 1.2** shows the proposed development layout at ground floor.

Figure 1.2: Proposed development layout at ground floor



2.0. STANDARDS AND GUIDANCE

2.1. BS 8233:2014: GUIDANCE ON SOUND INSULATION AND NOISE REDUCTION FOR BUILDINGS (BS 8233)

- 2.1.1. BS 8233 provides guidance for the control of noise in and around buildings. The guidance provided within the document is applicable to the design of new buildings, or refurbished buildings undergoing a change of use.
- 2.1.2. The Standard includes recommended internal and external guideline noise levels which are applicable to dwellings for steady external noise sources. The Standard states that it is desirable that the internal ambient noise levels do not exceed the criteria set out in **Table 2.1**.

Table 2.1: Desirable internal guideline values from BS 8233

Activity	Location	Period	
		07:00 to 23:00 (Daytime)	23:00 to 07:00 (Night-Time)
Resting	Living Room	35 dB $L_{Aeq, 16h}$	-
Dining	Dining Room/Area	40 dB $L_{Aeq, 16h}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq, 16h}$	30 dB $L_{Aeq, 8h}$

- 2.1.3. Whilst BS 8233 recognises that a guideline value may be set in terms of SEL or L_{AFmax} for the assessment of regular individual noise events that can cause sleep disturbance during the night-time, a specific criterion is not stipulated.
- 2.1.4. It is common practice, however, to adopt 45 dB L_{AFmax} as a criterion for typical events at night, based on the guidance from the World Health Organisation 'Guidelines for Community Noise' (WHO Guidelines).

3.0. BASELINE NOISE SURVEY

3.1. OVERVIEW

- 3.1.1. A baseline noise survey has been undertaken to determine the prevailing noise climate on the site. A short summary of the baseline noise survey methodology and relevant results is included below.

3.2. MEASUREMENT LOCATIONS

- 3.2.1. Measurements were undertaken at two locations during the survey. The adopted measurement locations are shown in **Figure 3.1**.

Figure 3.1: Baseline noise survey measurement locations



Measurement Location 1 (ML1)

- 3.2.2. Unattended measurements were undertaken at ML1 between 07:00 on 23rd September 2024 and 11:30 on 25th September 2024.
- 3.2.3. The equipment at ML1 was installed in facade conditions at 1st floor level overlooking Morley Lane. The noise climate at ML1 was dominated by road traffic on Market Street and Morley Lane, no significant commercial noise sources were identified on the site.

Measurement Location 2 (ML2)

- 3.2.4. Brief attended measurements were undertaken at ML2 for 15 minutes beginning at 11:10 on 25th September 2024. These measurements were undertaken simultaneously with measurements at ML1.

3.2.5. The equipment at ML2 was installed within a room on the northern façade at a height of 1.5 m above 1st floor level and 1 m from the window overlooking Morley Lane. The purpose of the measurement was to establish the attenuation afforded by the existing façade.

3.3. EQUIPMENT

3.3.1. The baseline noise survey was undertaken using the Class 1 specification noise measurement equipment detailed in **Table 3.1**. The measurement equipment was calibrated using a portable calibrator immediately before and after the measurements with no significant drift in calibration observed.

3.3.2. The sound level meters, pre-amplifiers and microphones were calibrated to traceable standards within 24 months prior to the measurements. The portable calibrator was calibrated within 12 months prior to the measurements.

Table 3.1: Equipment details

Location	Equipment	Make and Model	Serial Number	Calibration due Date
ML1	Sound Level Meter	01 dB Fusion	11327	06/09/2025
	Microphone	Grass 40CE	259479	
	Preamplifier	01 dB PRE 22	1605201	
ML2	Sound Level Meter	Svantek 971	60745	06/09/2025
	Microphone	ACO 7052E	66815	
	Preamplifier	Svantek SV18	64535	
ML1 and 2	Calibrator	Svantek SV33A	90275	21/02/2025

3.4. WEATHER CONDITIONS

3.4.1. Weather conditions during the survey were conducive to the measurement of environmental noise, it being dry with low wind speeds (<5 ms⁻¹).

3.5. RESULTS

3.5.1. Summaries of the measured noise levels at ML1 are presented in **Table 3.2** and are presented graphically in **Appendix B**, and the measured noise levels at ML2 are presented in **Table 3.3**.

Table 3.2: Summary of measured sound pressure levels at ML1

Date and Start time	Period	Measured Sound Pressure Levels	
		dB $L_{Aeq,T}$	dB $L_{AFmax,T}$ ¹
23/09/24 07:00	Daytime	71	-
23/09/24 23:00	Night-time	64	80
24/09/24 07:00	Daytime	71	-
24/09/24 23:00	Night-time	64	82

¹ - Taken to be the 15th highest of the measured $L_{AFmax,5min}$ values during the night-time period.

Table 3.3: Summary of measured sound pressure levels at ML2

Date and Start time	Period	Measured Sound Pressure Level dB $L_{Aeq,T}$
25/09/24 11:10	15 minutes	36

4.0. ASSESSMENT

4.1.1. Using the measured data from the survey, the noise levels at the facades worst affected by road traffic noise would be as shown in **Table 4.1**. A -3 dB correction has been applied to the measured noise levels at ML1 to determine free-field noise levels from the measured facade noise levels.

Table 4.1: Summary of the ambient noise levels at north and east facades

Facade	Period	dB $L_{Aeq,T}$	dB $L_{AFmax,T}$
North and East	Daytime	68	-
	Night-time	61	78

4.1.2. Simultaneous measurements were taken for a 15 minute period at ML1 and ML2 to establish the level difference from external free-field noise levels to internal noise levels with windows closed. The simultaneous noise levels measured at both measurement locations are presented in **Table 4.2** along with the calculated level difference.

Table 4.2: External and internal ambient noise levels and façade sound insulation performance

Period	External Free Field Ambient Noise Level, dB $L_{Aeq,15min}$	Internal Ambient Noise Level dB $L_{Aeq,15min}$	Calculated Level Difference, dB
25/09/24 11:10 - 11:25	69	36	33

4.1.3. **Table 4.3** details the internal noise levels predicted by subtracting the measured level difference from **Table 4.2** to the measured free-field external noise levels from **Table 4.1**.

Table 4.3: Predicted internal noise levels

Facade	Period	dB $L_{Aeq,T}$	dB $L_{AFmax,T}$
North and East	Daytime	35	-
	Night-time	28	45

- 4.1.4. Comparing the predicted internal noise levels from **Table 4.3** to the desirable guideline values from **Table 2.1**, it can be seen that desirable internal noise levels are predicted to be achieved with the existing building envelope. Night-time L_{AFmax} noise levels are also predicted to be below the adopted 45 dB criterion. Therefore, any glazing systems which are installed in place of the existing glazing should provide a minimum acoustic performance of 33 dB R_w in order to achieve the required daytime and night-time internal habitable noise level criteria.
- 4.1.5. Given the findings of this assessment, it is considered that noise need not be a determining factor in granting consent for the proposed development.

5.0. CONCLUSION

- 5.1.1. JPM Acoustics Ltd has been appointed to undertake a noise impact assessment in support of the proposed Change of Use at 1 Morley Lane, Milnsbridge.
- 5.1.2. At present, the premises comprises a retail space at ground floor level, with an apartment at 1st floor level. The retail space (Class E) is to be redeveloped for residential use (Class C3).
- 5.1.3. This noise impact assessment considers the potential impacts at the proposed residential properties from nearby sources of noise. The assessment has been undertaken with due regard to relevant planning policies, British Standards, and technical guidance documents relating to noise.
- 5.1.4. The results of the assessment indicate that the attenuation afforded by the existing building envelope is sufficient to achieve desirable internal noise level criteria when windows are closed and with the inclusion of an MVHR system for ventilation. Should replacement glazing systems provide a minimum acoustic performance of 33 dB R_w (i.e. the acoustic performance of the existing glazing), the required daytime and night-time internal habitable noise level criteria are likely to be met. On this basis, noise need not be a significant factor in the determination of the planning application.

APPENDIX A: GLOSSARY

Table A.1: Noise terminology

Terminology	Description
A-weighting, dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' - weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Decibel, (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s_1 and s_2 is given by $20 \log_{10} (s_1/s_2)$. The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20 Pa.
Façade	At a distance of 1m in front of a large sound reflecting object such as a building façade.
Fast Time Weighting (F)	Averaging time constant used in sound level meters and commonly used in the measurement of environmental noise.
Free-Field	Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5m away.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over the period, T. L_{10} may be thought of as the "average maximum" noise level. Generally used to describe road traffic noise.
$L_{90,T}$	A noise level index. The noise level exceeded for 90% of the time over the period, T. L_{90} may be thought of as the "average minimum" noise level. Generally used to describe background noise.

$L_{eq,T}$	A noise level index called the equivalent continuous noise level over the time period, T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level during the period, T. L_{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
Noise Level Indices	Noise levels usually fluctuate over time, so it is often necessary to consider an average or statistical noise level. This can be done in several ways, so a number of different noise indices have been defined, according to how the averaging or statistics are carried out.
Sound Power	The sound energy radiated per unit time by a sound source. Measured in watts (W).
Sound Power Level, L_w	Sound power measured on a decibel scale, relative to a reference value of 10^{-12} W.
Sound Pressure	Sound, or sound pressure, is a fluctuation in air pressure over the static ambient pressure. Measured in pascals (Pa).
Sound Pressure Level (Sound Level), L_p	The sound level is the sound pressure on a decibel scale, relative to a reference value of 20×10^{-6} Pascals.

APPENDIX B: BASELINE NOISE DATA

1 Morely Lane, Milnsbridge
 Measured Sound Pressure Levels
 23rd September - 25th September 2024

