



Project No. 22586

9-11 Market Place, Market Bosworth

Noise Impact Assessment

Ladbury Architectural Design



Revision	Date	Prepared By	Reviewed By	Comments
V1	03/12/25	Bailey Hoare	Jonathon Hill	First Issue

The report has been prepared in good faith by enevo, with all reasonable skill and care, based on information provided or available at the time of its preparation and within the scope of work agreement with the Client. We disclaim any responsibility to the Client and others in respect of any matters outside the scope of the above. The report is provided for the sole use of the named Client and is confidential to them and their professional advisors. No responsibility is accepted to other parties

Limitations to this Report

This report entails a physical investigation of the site with a sufficient number of sample measurements to provide quantitative information concerning the type and degree of noise affecting the site. The objectives of the investigation have been limited to establishing sources of noise material to carrying out an appropriate assessment.

The number and duration of noise measurements have been chosen to give reasonably representative information on the environment within the agreed time, and the locations of measurements have been restricted to the areas unoccupied by building(s) that are easily accessible without undue risk to our staff.

As with any sampling, the number of sampling points and the methods of sampling and testing cannot preclude the existence of “hotspots” where noise levels may be significantly higher than those actually measured due to previously unknown or unrecognised noise emitters. Furthermore, noise sources may be intermittent or fluctuate in intensity and consequently may not be present or may not be present in full intensity for some or all of the survey duration.

1.0 Introduction

Details of Instruction

Ladbury Architectural Design has appointed enevo to carry out a noise impact assessment for the change of use from a retail unit into a piano bar at 9-11 Market Place, Market Bosworth.

The noise assessment has been conducted with reference to the National Planning Policy Framework and the appropriate British Standards, recognised guidance & reference documents relevant to this site.

This report describes a noise survey of the site and the subsequent analysis to determine the noise environment of the proposed development. It then compares the results with the adopted criteria and, where applicable, recommendations are made with respect to the design of the development.

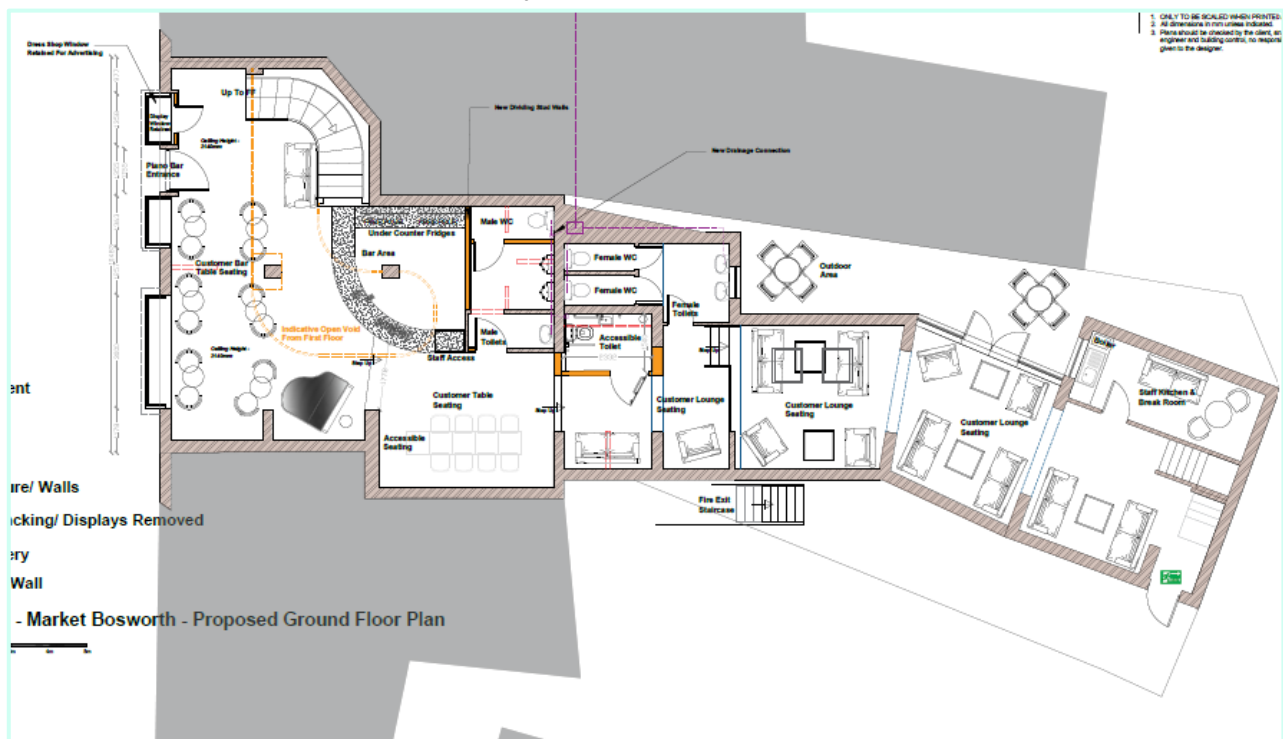
To support this document a glossary of technical terminology is included in Appendix A.

Site Conditions

The site is a currently a small retail unit at 9-11 Market place in Market Bosworth. The site is bound by residential and commercial units to the north, east and south with Market Place, a car park and more commercial and residential units to the west. The proposal is to convert the retail unit into a piano bar over 2 floors with a storeroom on the second floor.

Figure 1 below shows the proposed ground floor plan.

Figure 1
Proposed Ground Floor Plan



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Noise Sensitive Receptors

Noise contributions have been considered at the following Noise Sensitive Receptors (NSRs) based on their proximity to the site:

- NSR1 – Flats above 1 Market Place, Market Bosworth, Nuneaton CV13 0LF;
- NSR2 – 5a The Wheatsheaf Courtyard, Market Bosworth, Nuneaton CV13 0RH;
- NSR3 – 19 Market Place, Market Bosworth, Nuneaton CV13 0LF.

2.0 Guidance

National Policy

National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. At the heart of the NPPF is a presumption in favour of sustainable development. It requires Local Plans to be consistent with the principles and policies set out in the NPPF with the objective of contributing to the achievement of sustainable development.

The NPPF states that the planning system has three overarching objectives in achieving sustainable development including a requirement to *"contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."*

Paragraph 180 of the NPPF states:

"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."

Additionally, Paragraph 191 of the NPPF states:

"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 impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life..."

Noise Policy Statement for England

The 'Noise Policy Statement for England' sets out the following vision for ongoing noise policy:

"Promote good health and a quality of life through the effective management of noise within the context of Government policy on sustainable development."

This vision should be achieved through the following Noise Policy Aims:

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

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.”

To achieve this vision, the Noise Policy Statement sets 3 noise levels to be defined by the assessor:

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.

The Noise Policy Statement considers that noise levels above the SOAEL would be seen to have, by definition, significant adverse effects and would be considered unacceptable. Where the assessed noise levels fall between the LOAEL and the SOAEL noise levels, the Policy Statement requires that:

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

Where noise levels are below the LOAEL, it is considered there will be no adverse effect. Once noise levels are below the NOEL, there will be no observable change.

British Standards and Guidance Documents

British Standard (BS) 7445-1:2003 – Description and Measurement of Environmental Noise – Part 1: Guide to Quantities and Procedures

This document defines the basic quantities to be used for the description of noise in community environments and describes basic procedures for the determination of these quantities.

The methods and procedures described in this British Standard are intended to be applicable to sounds from all sources, individually and in combination, which contribute to the total noise at a site. This British Standard does not specify limits for environmental noise.

BS 8233:2014 – Guidance of Sound Insulation and Noise Reduction in Buildings

BS 8233:2014 provides a methodology to calculate the noise levels entering a building through facades and façade elements. It also provides details of appropriate measures for sound insulation between dwellings and recommended internal noise levels which are provided for a variety of situations.

ISO 9613 Attenuation of Sound During Propagation Outdoors

ISO 9613 presents a calculation methodology for the determination of the attenuation of sound outdoors. The methodology enables the prediction the levels of environmental noise at a distance from a variety of sources.

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3.0 Assessment Methodology

Assessed Sources of Environmental Noise

The following sources of noise are considered in the context of this site:

Table 1
Assessment Methodology

Potential Noise Source	Relevant Assessment Methodology
Piano Bar Music Patrons of the Piano Bar	Below NR25 internally
Fixed Plant	BS 4142:2014+A1:2019

Selection of Noise Criteria

With reference to the guidance detailed in Section 2 the following criteria have been selected to determine the threshold of effect levels in the context of the National Planning Policy Framework and Noise Policy Statement for England.

Table 2
Assessment Criteria: BS 4142:2014+A1:2019

Effect Level	Criteria	Justification
LOAEL	Free-field external noise levels at adjacent sensitive receptor locations within +5 dB of representative background noise level	Noise levels +5 dB above background are considered an indication of where adverse noise impacts may occur in the context of BS 4142. Noise levels below this level are an indication that it is less likely that the specific sound source will have an adverse impact
SOAEL	Free-field external noise levels at adjacent sensitive receptor above +10 dB of representative background noise level	None – Planning guidance requires that impacts must be reduced below the SOAEL through mitigation, with adverse impacts above the LOAEL but below the SOAEL being mitigated as far as is reasonable

Table 3
Assessment Criteria: NR25

Effect Level	Criteria	Justification
LOAEL	Internal Noise Levels within site below NR25	Noise Levels below NR25
SOAEL	Internal Noise Levels within site exceed NR25	None – Planning guidance requires that impacts must be reduced below the SOAEL through mitigation, with adverse impacts above the LOAEL but below the SOAEL being mitigated as far as is reasonable

4.0 Environmental Noise Survey

Noise measurements were undertaken externally during both the daytime and the night-time. The measurements were taken between 21st to the 24th of October 2025.

Survey Methodology and Locations

The equipment used during this survey is listed below in Table 4 and have been calibrated before and after the measurement duration and no significant drift was found to have occurred (>0.2dB). The noise monitoring equipment has been calibrated to a traceable standard with the 24 months before the survey.

Table 4
Noise Monitoring Equipment

Equipment	Serial Number
Nti XL3 Sound Level Meter	01397
Nti XL3 Sound Level Meter	01405

Two measurement location has been surveyed in order to establish both the ambient and background noise levels at the site. Both measurement locations were at an approximate height of 1.5m. Figure 1 below shows the measurement location in relation the proposed site.

Figure 2
Noise Monitoring Locations



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Survey Results

The weather monitoring during the unattended survey was collected from the WOW Met Office data website. Data has been removed for high winds over 5 m/s and any precipitation. Table 5 below shows the results of the survey. Full survey results are available on request.

Table 5
Summary of Measured Noise Levels – dB

Location	Date	Period	Time (h)	L _{Aeq, T}	L _{A90}	L _{AfMax}
1	21/11/2025	Daytime	1530-2300	59.3	45.4	92.8
	21/11/25-22/11/25	Night-time	2300-0700	51.5	35.9	93.4
	22/11/2025	Daytime	0700-2300	58.7	42.3	88.5
	22/11/25-23/11/25	Night-time	2300-0700	49.6	34.3	81.9
	23/11/2025	Daytime	0700-2300	58.5	47.1	89.4
	23/11/25-24/11/25	Night-time	2300-0700	51.1	35.1	74.2
	24/11/2025	Daytime	0700-1215	62.8	52.1	83.9
2	21/11/2025	Daytime	1530-2300	51.4	37.4	77.4
	21/11/25-22/11/25	Night-time	2300-0700	42.5	34.6	70.2
	22/11/2025	Daytime	0700-2300	45.7	38.0	75.4
	22/11/25-23/11/25	Night-time	2300-0700	38.5	34.2	65.8
	23/11/2025	Daytime	0700-2300	59.9	40.6	75.5
	23/11/25-24/11/25	Night-time	2300-0700	73.4	58.9	77.2
	24/11/2025	Daytime	0700-1215	57.8	41.4	75.6

Observations on Site

The existing noise environment is dominated by road traffic noise from St George's Road and Leeds Road.

BS 4142:2014+A1:2019 Background (L_{A90}) Statistical Analysis

In accordance with the methodology detailed in Section 8 of BS 4142:2014+A1:2019, representative background noise levels have been determined through statistical analysis of all 15-minute samples and are expressed as integers (with 0.5 dB being rounded up).

The results of the statistical analysis of measured background noise levels are presented in a graphical format for daytime and night-time, in Figures 2-5, overleaf. The records highlighted in teal in each figure denote the representative background levels used within this assessment.



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Figure 2

'Location 1' – Daytime Background (L_{A90}) Analysis

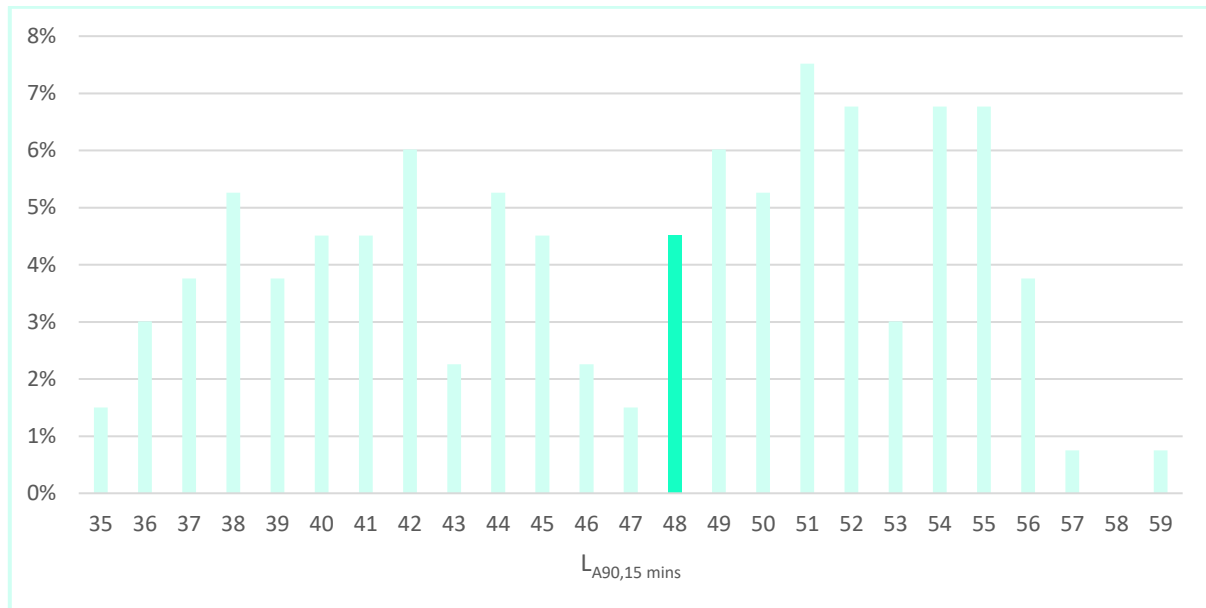


Figure 3

'Location 1' – Night-time Background (L_{A90}) Analysis

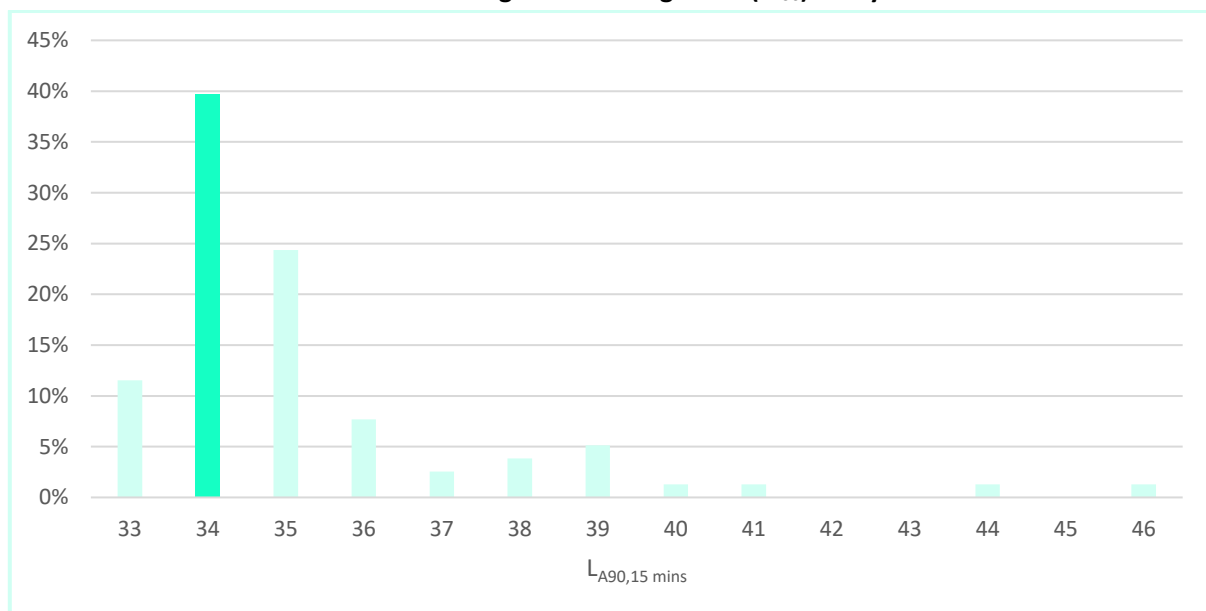




Figure 4

'Location 2' – Daytime Background (L_{A90}) Analysis

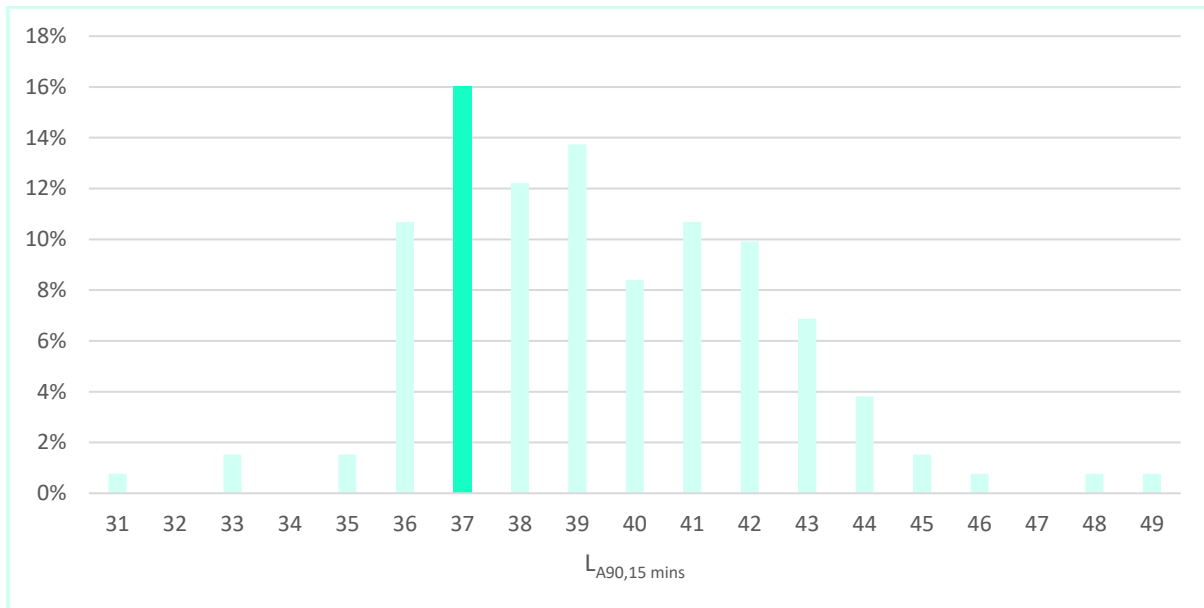
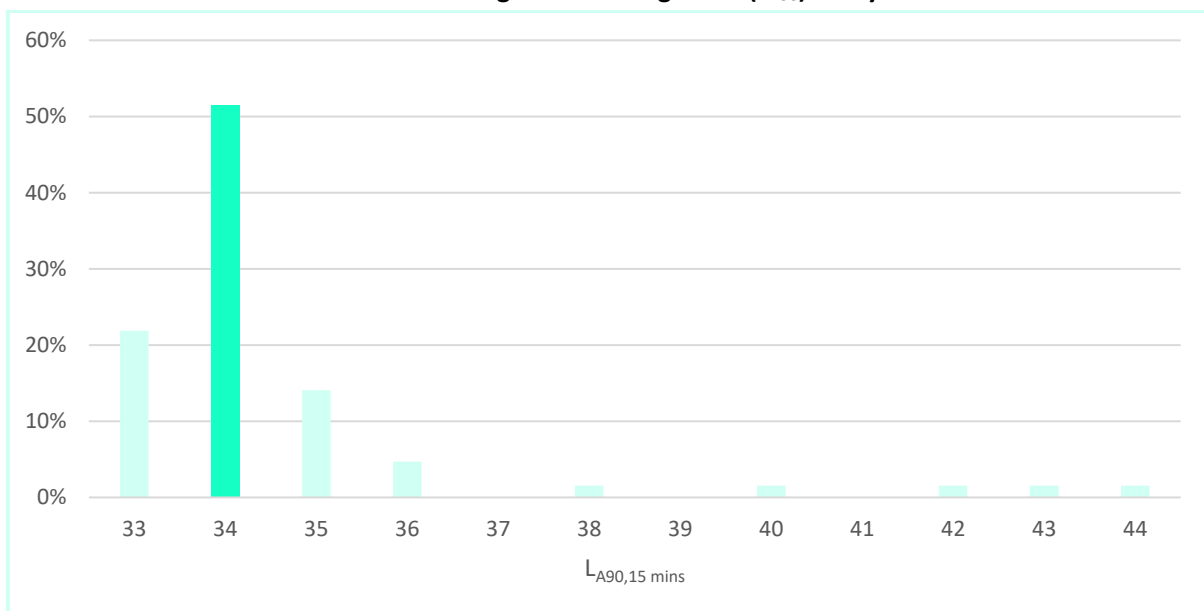


Figure 5

'Location 2' – Night-time Background (L_{A90}) Analysis



5.0 Noise Modelling Methodology

Data Sources

A noise model for this assessment has been created using CadnaA modelling suite and the noise model has been based on the spatial settings and data sources identified in the Table below.

Table 6
Noise Model Input Data

Model Parameter	Scenario	Data Source	Assumptions
Site Plans	All	OS Mastermap	Existing Building heights modelled as 8.5m above ground level (AGL)
Ground Heights	All	Environment Agency Open Data LiDAR Digital Terrain Model (2m Resolution)	None
Ground Absorption	All	N/A	Soft ground conditions on and off site (G=1), roads hard ground conditions (G=0)
Reflections	All	N/A	3 rd order reflections
Barriers/Boundary Treatment	Proposed	N/A	2.5m close-boarded fence along the eastern edge of the external terrace

Source Noise Assumptions

External Terrace Noise

Details for patron noise have been taken from a number of reports completed within the acoustics industry. To present a worst case a noise level of 67 dBA has been assumed during a normal trading scenario within the proposed external terrace. Table 7 below outlines the noise levels. The External Terrace will only be in operation during daytime hours (1200-2100).

Table 7
External Patron Noise: Source Sound Power Levels

Scenario	Sound Power Level, dB
	L _{WA}
Normal	67.0

Music Noise

Music noise breakout has been modelled, using a series of vertical area sources, based on the following data:

- An internal sound pressure level limit of 80 dB A.
- Noise attenuation afforded by the building structure based on a 70mm brick structure for the walls and a 6mm single pane of glass. These have been used to present a worst-case assessment.

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Table 8
Music Noise: Reverberant Sound Pressure Level

Noise Source	Frequency, Hz dB(A)								SWL (A)
	63	125	250	500	1000	2000	4000	8000	
Piano Bar Music	64.7	55.1	63.3	66	70.8	75.2	72.2	74.7	80

Table 9
Sound Reduction Indices of the Façade

Façade Element	Frequency, Hz dB(A)								R _w
	63	125	250	500	1000	2000	4000	8000	
70mm Brick	32	36	37	32	40	48	55	55*	40
6mm Single Glass Pane	18	21	25	29	33	31	35	35*	31

*Noise data for 8kHz unavailable therefore assumed to be consistent with adjacent octave band

To calculate the internal noise levels at the nearest sensitive receptors, a worst-case window-opening scenario has been applied. Data for this assessment has been taken from the *NANR116 Open/Closed Window Research*. The worst-case opening—200,000 mm², corresponding to Opening B—has been selected. Table 10 below presents the associated sound reduction values for this opening configuration.

Table 10
Sound Reduction Indices of the Façade

Window Opening	Frequency, Hz dB(A)								D _{n,e,w}
	63	125	250	500	1000	2000	4000	8000	
Opening B (200,000mm ²)	20.8	13.3	12.9	18.1	12.0	18.3	20.5	20.5*	16

*Noise data for 8kHz unavailable therefore assumed to be consistent with adjacent octave band]

Fixed Plant

At the current design stage, there is no fixed M&E strategy for the development. However, for the purposes of presenting a robust assessment and to give an indication of the development's potential operational noise output, indicative fixed plant limits have been determined on the basis of the cumulative operation of all development associated fixed plant not exceeding background (L_{A90}). For the purposes of modelling, point sources have been located on the easternern façade of the proposed unit at 4m above ground level.

N.b. In accordance with ISO 9613-1, where spectral content of assessed noise sources is not available, such as indicative fixed plant limits, the attenuation terms for 500Hz are applied to determine noise contributions at adjacent sensitive receptor locations.

Indicative fixed plant limits are presented in Table 11, below:

Table 11
Fixed Plant Noise Limits

Time Period	Operational Noise Output L _{WA} , dB (cumulative)
Daytime	75.8
Night-time	72.8

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6.0 Noise Assessment

Piano Bar Assessment

To ensure that noise breakout from the piano bar does not disturb the nearest NSRs the aim will be to reduce the noise levels below NR25 internally within the dwellings. To account for an open window, a worst-case window opening from the NANR116 study, presented in Table 9 in Section 5.0, has been used. The noise source takes into account both noise from music noise inside the piano bar and noise from patrons internally and externally.

The results of the assessment are presented in the tables below.

Table 12

Assessment of the Piano Bar Noise at NSR1, dB

	Frequency, Hz dB(A)							
	63	125	250	500	1000	2000	4000	8000
External	-7.9	-7.9	0.8	11.0	13.4	14.8	10.0	7.0
Opening B (NANR116)	20.8	13.3	12.9	18.1	12.0	18.3	20.5	20.5
Internal	-28.7	-21.2	-12.1	-7.1	1.4	-3.5	-10.5	-13.5
NR25	55.2	43.7	35.2	29.2	25.0	21.9	19.5	17.7
Difference	-83.9	-64.9	-47.3	-36.3	-23.6	-25.4	-30.0	-31.2

Table 13

Assessment of the Piano Bar Noise at NSR2, dB

	Frequency, Hz dB(A)							
	63	125	250	500	1000	2000	4000	8000
External	9.9	15.2	25.4	35.3	36.8	35.7	29.1	25.0
Opening B (NANR116)	20.8	13.3	12.9	18.1	12.0	18.3	20.5	20.5
Internal	-10.9	1.9	12.5	17.2	24.8	17.4	8.6	4.5
NR25	55.2	43.7	35.2	29.2	25.0	21.9	19.5	17.7
Difference	-66.1	-41.8	-22.7	-12.0	-0.2	-4.5	-10.9	-13.2

Table 14

Assessment of the Piano Bar Noise at NSR3, dB

	Frequency, Hz dB(A)							
	63	125	250	500	1000	2000	4000	8000
External	-7.7	-9.0	0.2	9.6	12.7	16.6	10.2	6.0
Opening B (NANR116)	20.8	13.3	12.9	18.1	12.0	18.3	20.5	20.5
Internal	-28.5	-22.3	-12.7	-8.5	0.7	-1.7	-10.3	-14.5
NR25	55.2	43.7	35.2	29.2	25.0	21.9	19.5	17.7
Difference	-83.7	-66.0	-47.9	-37.7	-24.3	-23.6	-29.8	-32.2

As can be seen in Tables 12-14, the results of the assessment indicate that noise contributions from the proposed piano bar's music and patrons are predicted to be below NR25 at all frequencies. Therefore, the noise impact from the piano bar's music and patrons is below the LOAEL.

Fixed Plant Assessment

Due to the operational characterises of the fixed plant not being known yet and to account for any adverse acoustic characteristics, a correction of +4 dB has been applied to determine the rating level (L_{ArTr}) in accordance with BS 4142:2014+A1:2019. The correction is based upon the fixed plant potentially having a clearly perceptible tone at the nearest NSRs which is often attributed to such noise sources.

The results of this assessment are presented in the table below.

Table 15
Assessment of Fixed Plant Noise Impact at NSRs, dB

NSR	Floor	Existing Measured Background (L_{A90})		Predicted Noise Rating Level (L_{ArTr})		BS 4142:2014+A1:2019 Difference between Rating Level and Background	
		Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
1	FF	48	34	15.0	12.0	-33.0	-22.0
	SF			15.0	12.0	-33.0	-22.0
2	GF	37	34	35.4	32.4	-1.6	-1.6
	FF			37.0	34.0	0.0	0.0
3	GF	48	34	12.4	9.4	-35.6	-24.6
	FF			12.7	9.7	-35.3	-24.3

As shown in the table above, providing the cumulative noise output of all external fixed plant is kept within the previously determined limits (presented in Table 9), the operation of the proposed fixed plant scheme will be at most equal to background noise levels during the daytime and night-time reference periods, inclusive of a +4 dB character correction for uncertainty. The predicted plant noise contributions during both the daytime and night-time are below the LOAEL.

7.0 Conclusion

Ladbury Architectural Design has appointed enevo to carry out a noise impact assessment for the change of use from a retail unit into a piano bar at 9-11 Market Place, Market Bosworth.

The noise assessment has been conducted with reference to the National Planning Policy Framework and the appropriate British Standards, recognised guidance & reference documents relevant to this site.

This report describes a noise survey of the site and the subsequent analysis to determine the noise environment of the proposed development. It then compares the results with the adopted criteria and, where applicable, recommendations are made with respect to the design of the development.

Piano Bar Assessment

This assessment indicates that noise contributions from the proposed piano bar's music and patrons are predicted to be below NR25 at all frequencies. Therefore, the noise impact from the piano bar's music and patrons is below the LOAEL.

Fixed Plant Assessment

The assessment shows that providing the cumulative noise output of all external fixed plant is kept within the previously determined limits (presented in Table 11), the operation of the proposed fixed plant scheme will be at most equal to background noise levels during the daytime and night-time reference periods, inclusive of a +4 dB character correction for uncertainty. The predicted plant noise contributions during both the daytime and night-time are below the LOAEL.

Appendix A

Glossary of Acoustic Terminology

"A" Weighting (dB(A)) – The human ear does not respond uniformly to different frequencies. "A" weighting is commonly used to simulate the frequency response of the ear. It is used in the assessment of the risk of damage to hearing due to noise.

Decibel (dB) – The range of audible sound pressures is approximately 2×10^{-5} Pa to 200 Pa. Using decibel notation presents this range in a more manageable form, 0 dB to 140 dB. Mathematically: Sound Pressure Level (dB) = $20 \log \{p(t) / P_0\}$ where $P_0 = 2 \times 10^{-5}$ Pa

Frequency (Hz) – The number of cycles per second, for sound this is subjectively perceived as pitch.

$L_{eq}(T)$ – The equivalent continuous sound level. It is that steady sound level which would produce the same energy over a given time period T as a specified time varying sound.

$L_{Amax}(T)$ – The maximum RMS A-weighted sound pressure level occurring within a specified time period.

LAE or SEL – A measure of A-weighted sound energy used to describe noise events such as the passing of a train or aircraft; it is the A-weighted sound pressure level which, if occurring over a period of one second, would contain the same amount of A-weighted sound energy as the event.

$L_{A90,T}$ Background noise level – The A-weighted sound pressure level of the residual noise in decibels exceeded for 90% of a given time interval.

Octave Band – A range of frequencies defined by an upper limit which is twice the lower limit. Octave bands are identified by their centre frequency.

R_w (dB) – The weighted sound reduction incorporates a correction for the ear's response and has been derived in accordance with BS 5821:1984.

Specific Noise – The equivalent continuous A-weighted sound pressure level at the assessment position produced by the specific noise source over a given reference time interval.

Rating Level – $L_{Ar,T}$ The specific noise level plus any adjustment for the character of the noise.

Ambient Noise – Totally encompassing sound in a given situation at any given time composed of noise from many sources, near and far.

Residual Noise – The ambient noise remaining at a given position in a given situation when the specific noise source is suppressed.