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# Acoustic Survey and Assessment for Proposed micro bar at The Old Corn Mill, Stanley Street, Longridge, PR3 3EB.

Prepared for:

The Stage Door
The Old Corn Mill
Warwick Street
Longridge
PR3 3EB

June 2022

# Contents

# 1. Introduction

1.1. Martin Environmental Solutions has been commissioned to undertake an acoustic assessment to support a planning application for the conversion of an industrial unit into a micro bar at Stanley Street, Longridge.

## Site Location and Context

1.2. The development site is situated sandwiched between Stanley Street and Warwick Street. The first floor is utilised as offices and will remain as such with the ground floor being split into two. The rear section of the ground floor onto Stanley Street becoming the micro bar.

1.3. To the south and east are industrial units, to the west attached to the Warwick Street section of the building residential properties. To the north residential on the eastern side and an existing bar on the western.

1.4. An aerial Photograph is enclosed in Figure 1.

1.5. Concerns have been raised over the potential impact from the development on neighbouring land use hence the request for this report.

## 2. Policy and Guidance

2.1. The impact of noise can be a material consideration in the determination of planning applications. The planning system has the task of guiding development to the most appropriate locations. It is recognised that on occasions it will be difficult to reconcile some land uses, such as housing, hospitals, or schools, with other activities that generate high levels of noise. However, the planning system is tasked to ensure that, wherever practicable, noise-sensitive developments are separated from major sources of noise (such as road, rail and air transport and certain types of industrial development).

2.2. The Government's publication of the National Planning Policy Framework (NPPF), updated in July 2021, states that planning policies and decisions should prevent new and existing development from contributing to or being put at unacceptable risk from, of being adversely affected by unacceptable levels of noise pollution.

2.3. The Government have also issued the Noise Policy Statement for England (NPSE). The NPSE clarifies the Government's underlying principles and aims in relation to noise and sets a vision to promote good health and a good quality of life through the effective management of noise while having regard to the Government's sustainable development strategy. The NPSE aims to mitigate and minimise adverse impacts on health and quality of life through the effective management and control of noise.

2.4. The NPSE introduces the following terms, although no sound levels are given to represent these, many authorities have identified the sound level criteria in line with the World Health Organisation, BS8233:2014 and BS4142: 2014 levels. The terms introduced by the NPSE are:

NOEL – No Observed Effect Level (<30dB(A)inside <50dB(A) outside, 10dB below background)
LOAEL – Lowest Observed Adverse Effect Level (30-35dB(A) inside 50-55dB(A) outside, background to +5dB)
SOAEL – Significant Observed Adverse Effect Level (>35dB(A) inside, >55dB(A) outside, >+10dB above background)

2.5. The sound levels within the brackets of the previous paragraph are those determined as appropriate levels to indicate the relevant effect levels represented by the NPSE.

2.6. Other commonly used examples of standards utilised by Local Planning authorities for the consideration of noise impacts include comparison of the likely noise levels to be experienced at a development, with levels that have been recommended by the World Health Organisation (WHO) as Guidelines for the prevention of Community Noise Annoyance and within BS8233: 2014.

2.7. The WHO recommended noise levels for outdoor amenity areas (gardens) that should not be exceeded are 55dB(A) $L_{Aeq,16hr}$ in order to avoid 'Serious Community Annoyance or 50dB(A) $L_{Aeq,16hr}$ to avoid 'Moderate Community Annoyance' during the day. For indoor levels WHO set 35dB(A) $L_{Aeq,16hr}$ during the day to prevent Moderate Annoyance and 30 dB(A) $L_{Aeq,8hr}$ at night to prevent sleep disturbance.

2.8. The WHO guidance also recommends that maximum sound levels at night should not regularly exceed 45dB(A) within bedrooms to prevent sleep disturbance. Regularly is considered to be more than 10 times during any 8-hour night-time period.

2.9. BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' also specifies desirable noise levels to be achieved inside dwellings.

2.10. BS 8233:2014 'Sound insulation and noise reduction for buildings – Code of Practice' also specifies desirable noise levels to be achieved inside dwellings. BS 8233 presents two levels, the first between the hours of 07:00 – 23:00 and the second between 23:00 -07:00.

2.11. The daytime period suggests internal noise levels of 35dB $L_{Aeq,16hr}$, for resting in living rooms and bedrooms while for night-time a level of 30dB LAeq,8hr is recommended. Criteria for external areas mirrors that within the WHO guidance.

2.12. In addition, the 'ProPG Planning & Noise, Professional Practice Guidance on Planning & Noise, New Residential Development' provides a 4-staged approach to undertaking a risk assessment in relation to anticipated sound levels at new residential development and the provision of mitigation measures. The guidance is principally aimed at sites exposed predominantly to noise from transportation sources.

2.13. The first stage consists of an initial noise risk assessment, based on indicative day and night-time *noise* levels. Simply put, the higher the ambient noise in an area the greater the impact. The levels given are shown below although it should be noted that these are in excess of both the Lancashire guidance, WHO and BS 8233: 2014.

| Noise Risk Category* | Potential Effect if Unmitigated | Pre-Planning Application Guidance |
|---|---|---|
| **0 – Negligible** $L_{Aeq,16hr}$ **<50dB** $L_{Aeq,8hr}$ **<40dB** | May be noticeable but no adverse effect on health and quality of life | In this category the development is likely to be acceptable from a noise perspective, nevertheless a good acoustic design process is encouraged to improve the existing environment and/or safeguard against possible future deterioration and to protect any designated tranquil areas. A noise assessment may be requested to demonstrate no adverse impact from noise. Application need not normally be delayed on noise grounds. |
| **1 – Low** $L_{Aeq,16hr}$ **50-63dB** $L_{Aeq,8hr}$ **40-55dB** | Adverse effect on health and quality of life | In this category the development may be refused unless a good acoustic design process is followed and is demonstrated via a Level 1 Acoustic Design Statement which confirms how the adverse impacts of noise on the new development will be mitigated and minimised and that a significant adverse impact will not arise in the finished development. Planning conditions and other measures to control noise may be required. |
| **2 – Medium** $L_{Aeq,16hr}$ **63-69dB** $L_{Aeq,8hr}$ **55-60dB** $L_{AFmax}$ **>80dB**** | Significant adverse effect on health and quality of life | In this category the development is likely to be refused unless good acoustic design process is followed and is demonstrated via a Level 2 Acoustic Design Statement which confirms how the adverse impacts of noise on the new development will be mitigated and minimised, and clearly demonstrates that a significant adverse noise impact will not arise in the finished development. Planning conditions and other measures to control noise will normally be required. |
| **3 – High** $L_{Aeq,16hr}$ **>69dB** $L_{Aeq,8hr}$ **>60dB** $L_{AFmax}$ **>80dB**** | Unacceptable adverse effect of health and quality of life | In this category the development is very likely to be refused on noise grounds, even if a good acoustic design process is followed and is demonstrated via a Level 2 Acoustic Design Statement. Applicants are advised to seek expert advice on possible mitigation measures. Advice on the circumstances when the refusal of a new housing on noise grounds should normally be anticipated is included in the ProPG. |

2.14. Stage 2, consists of a full assessment of the prevailing ambient noise and requires 4 elements to be considered:

I. Element 1 – Good Acoustic Design
II. Element 2 – Internal Noise Level Guidelines
III. Element 3 – External Amenity Area Noise Assessment
IV. Element 4 – Assessment of Other Relevant Issues

2.15. A good acoustic design is implicit in meeting the requirements of the NPPF and can help to resolve many potential acoustic issues.

2.16. Details of the criteria considered suitable are provided above for both internal and external sound levels. Element 4 includes such issues as local and national policy, likely occupants, wider planning objectives.

# 3. The Assessment

## The Development

3.1 The proposed development will be located to the rear of the building, which is currently used to store and test large sound equipment for entertainment venues. The wall consists of 400mm solid brick walls. This offers a 64dB $R_w$ level of attenuation. While tests on site show that the current roller shutter door provides around 20dB attenuation. No complaints from neighbouring properties have been received regarding the sound levels generated on site from the testing of the large speaker systems.

3.2 To the west the wall adjoins the rear garden of the neighbouring property, 13 Warwick Street, although the front of the building adjoins the property, which is constructed from a stone wall, which will result in a higher level of attenuation, previous tests in the locality have suggested the stone wall will provide a 40dB reduction, in addition to the 64dB offered by the development site. See Figure 2 for layout.

3.3 To the north an entrance to the venue will be created, with a double door lobby built to reduce any sound emissions from the venue. The current roller shutter door is to be replaced with a glazed window. To the eastern side of the venue is situated the staircase to the first floor, which will be enclosed, with a toilet built underneath it. Adjacent to the is section of the building is another residential property 3 Stanley Street.

3.4 The proposed development is expected to have some entertainment which will be above typical background music sound levels. This will consist principally of singers, duo-acts and acoustic instruments. A number of small carefully placed speakers are proposed to enable sound levels to remain low while ensuring that customers will be able to hear the music.

3.5 Given the above operations and size of the venue sound levels are not expected to be particularly high and an internal sound level of 85dB(A), equivalent to the upper action level within the Control of Noise at Work Regulations, is considered to be more than reasonable for a basis of an assessment.

3.6 Based on the above details the sound levels to be experienced at the neighbouring properties would therefore be 21dB(A), significantly below the guideline levels mentioned within section 2 above.

3.7 In addition, the dividing wall between the front and rear of the building separating the current use and the bar will be constructed to minimise noise emissions from the site. The same specification will also be used for the new lobby area and toilet build to further reduce sound transfer to the neighbouring property.

3.8 Proposed construction details for these internal walls have been detailed in Appendix A below. Further increasing the level of insulation between the properties.

3.9 It has been shown that sound transfer through the structure of the property will not result in any adverse impact on the neighbouring properties based on the existing structure. The further compartmentalisation of the internal layout to form the double door lobby entrance, toilet and dividing wall will further reduce the sound transfer to neighbouring properties.

3.10 This leaves sound break out through the front window of the property (replacement roller shutter door).

3.11 Given a 15dB attenuation[1] for an open window, in order to ensure the recommended night-time sound level of 30dB(A) is achieved within the bedrooms a sound level of 45dB(A). To achieve this, taking into account the distance attenuation, the required reduction from the glazing will need to be 24.5dB.

$$SPL_{ext,1m} = SPR_{int} - attenuation\ (R_w) - 6 - dist.att$$
$$attenuation\ (R_w) = SPL_{ext} + 6 + dist.att - SPR_{int}$$
$$attenuation\ (R_w) = 45 + 6 + 9.5 - 85$$
$$attenuation\ (R_w) = 24.5dB$$

3.12 A standard 6/12/6 double glazing unit will provide a sound reduction, $R_w(C;C_{tr})$, of 33(-1;-3). Therefore, adequate to ensure sound breakout from the site will not result in a detrimental impact on the neighbouring properties.

3.13 To the northwest of the site is an existing bar, Martin Environmental Solutions have previous undertaken sound monitoring along Stanley Street to assist with the planning application for this venue.

[1] BS8233: 2014; Guidance on sound insulation and noise reduction for buildings

3.14 Background sound levels monitored at the time, during the late evening and therefore the quieter period of 21:30-22:30, identified levels of 51-56dB $L_{Aeq}$ and 31-36dB(A) $L_{A90}$ above the expected sound levels from the currently proposed venue.

3.15 While the monitoring occurred in March 2017, given the presence of this venue and lack of changes in the vicinity of the area it is unlikely that the background levels identified at the time have reduced.

3.16 Further supporting the conclusion that the internal sound levels at the proposed development will not have an adverse impact on the neighbouring properties.

## Patrons leaving

3.17 There exists the potential for noise from patrons leaving the venue to cause disturbance, particularly at the end of the night when the site closes as more people will be leaving at the same time.

3.18 Signage will be erected asking patrons to be mindful of the residential area and neighbours, while staff will manage customers to ensure they leave promptly and quietly and do not congregate within Stanley Street. Anyone waiting for a taxi will be asked to do so inside or away from the venue on Berry Lane.

3.19 The typical level of an adult talking is around 65dB(A), given the distance attenuation (3m) to a first-floor window and the 15dB reduction this would result in an instantaneous internal sound level of around 40.5dB(A), below the night-time maximum recommended sound level.

3.20 With a capacity of 60 people the anticipated sound level over the course of an hour will be 44.7dB(A) at the façade and 29.7dB(A) internally, below the recommended 8-hour average night-time sound level.

3.21 Therefore, patrons leaving the venue will not result in an adverse impact and with the additional control measures in place the sound level is anticipated to be lower than that calculated.

# 4 Conclusion

4.1 An assessment of the likely sound levels to be generated internally and the attenuation of the structure has been undertaken. Additional internal compartmentalisation will also be undertaken which will further improve attenuation to neighbouring properties.

4.2 This has shown that internal sound levels at the venue will not result in any adverse impact to the neighbouring properties.

4.3 A consideration of patrons leaving the site has also been undertaken and shown not to exceed the recommended sound levels identified in section 2 of the report.

4.4 The sound levels to be emitted by the venue are acceptable and will result in a No Observe Effect on the future residents in line with the Noise Policy Statement for England.

4.5 As such the development will meet the objectives of the National Planning Policy Framework in ensuring that no significant adverse impact is experienced by the future residents. The development is therefore considered to be acceptable in terms of noise.

## Figure 1 – Aerial Photograph

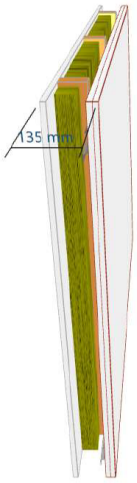
# Appendix A – Proposed internal wall structures

## Sound Insulation Prediction (v9.0.24)

INSUL

Program copyright Marshall Day Acoustics 2017
Margin of error is generally within Rw ±3 dB
- Key No. 2594
Job Name:
Job No.: Initials:info
Date:26/06/2022
File Name:insul

Notes:




Rw 53 dB
C -3 dB
Ctr -9 dB

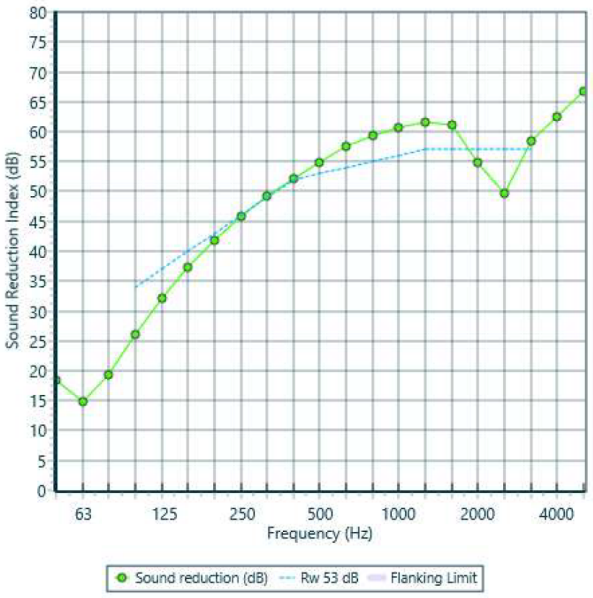
Mass-air-mass resonant frequency = =61 Hz
Panel Size = 2.7 m x 4.0 m
Partition surface mass = 38.4 kg/m²

### System description

Panel 1 : 1 x 15 mm Gyproc SoundBloc 15mm

Frame: Timber stud + Resilient rail/bar (78 mm x 45 mm ), Stud spacing 600 mm ; Cavity Width 90 mm , 1 x Fibreglass (10kg/m3) Thickness 60 mm
Panel 2 : 2 x 15 mm Gyproc SoundBloc 15mm

| freq.(Hz) | R(dB) | R(dB) |
|---|---|---|
| 50 | 18 | |
| 63 | 15 | 17 |
| 80 | 19 | |
| 100 | 26 | |
| 125 | 32 | 30 |
| 160 | 37 | |
| 200 | 42 | |
| 250 | 46 | 45 |
| 315 | 49 | |
| 400 | 52 | |
| 500 | 55 | 54 |
| 630 | 57 | |
| 800 | 59 | |
| 1000 | 61 | 60 |
| 1250 | 62 | |
| 1600 | 61 | |
| 2000 | 55 | 53 |
| 2500 | 50 | |
| 3150 | 58 | |
| 4000 | 63 | 61 |
| 5000 | 67 | |



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