MARTIN
ENVIRONMENTAL
SOLUTIONS

Acoustic Survey and Assessment for Proposed change of use of, 5 Stanley Street, Longridge, PR3 3NJ

Prepared for:

Fullalove Wines,
5 Stanley Street,
Longridge,
PR3 3NJ

March 2017

Contents

1. Introduction

1.1. Martin Environmental Solutions has been commissioned by Fullalove Wines Ltd to undertake a noise survey and an acoustic assessment to assess the impact of a proposed change of use of 5 Stanley Street, Longridge, PR3 3NJ to a wine bar.

Site Location and Context

1.2. The development site is located to the northwest of Stanley Street, Longridge. The proposed development forms part of a larger building complex consisting of office accommodation. To the northeast are commercial retail premises, southwest commercial units and opposite to the southeast and behind are residential properties. An aerial photograph is included within Figure 1.

1.3. It is the potential impact on these residential properties that has led to the request for this assessment.

1.4. The assessment will discuss the potential impact from the proposed development, identify the likely impact on sensitive receptors and suggest any mitigation measures required to ensure the development is suitable.

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), which seeks to prevent new and existing development from contributing to or being put at unacceptable risk from noise pollution, has replaced previous Planning Policy Statements and Planning Policy Guidance Notes.

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 sound level criteria in line with the World Health Organisation 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 by Lancashire authorities as appropriate levels to indicate the relevant effect levels represented by the NPSE. These levels are detailed with in the Lancashire Planning Guidance document on noise which is in the process of being finalised and is currently used by a number of Lancashire authorities.

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.

3. The Proposal

3.1. The development involves the conversion of the building into a small wine bar with off-site sales at the front of the building. The site will include a small kitchen and bar area.

3.2. Entertainment will be restricted to back ground music with the occasion sole/due acoustic acts and singers. It is proposed that the site will be closed to the public at 23:00, restricting any impact from the site to the typically identified daytime periods within the above guidance documents.

3.3. The entrance to the establishment is via a large shared lobby area providing a suitable vestibule to prevent sound escaping from the venue as patrons enter. The front of the venue will also be used for retail sale and any acts or speakers for background music will be located towards the centre/rear of the property further reducing the likelihood of breakout from the front.

4. The Assessment

4.1. To ascertain the existing attenuation of the property a dodecahedron speaker was set up in the centre of the building. A pink noise generator was then used to generate a significant sound level within the premises. The sound levels produced were well in excess of any sound level to be produced by the usual use of the premises. External sound levels were then monitored for compassion.

4.2. All measurements were taken using a Cirrus, Optimus Green CR-171B, Type 1 sound level meter. The meter was calibrated before and after use and no significant deviation was identified. The calibration certificate is shown in Appendix A.

4.3. Internal sound levels within the property were measured between 97dB(A) at the rear of the property to 101dB(A) at the front. While external sound levels were recorded at 57dB(A) to the front of the property and 56dB(A) at the rear.

4.4. While the external sound levels were influenced by passing traffic these results indicate an attenuation level of over 40dB from the existing structure. 97-57 = 40dB.

4.5. Background sound levels in the area were then monitored. To the rear the background sound levels ranged from 48-50dB $L_{Aeq,}$ 33-36dBL_{A90}. To the front of the property similar sound levels of 51-56dB L_{Aeq} and 31-36dB(A) L_{A90} were recorded. The weather at the start and end of the monitoring period was dry and still however from around 21:31 to 22:30 there were periods of heavy rain, when measuring at the front of the property.

The lowest background levels recorded are therefore considered suitable for any further calculations.

4.6. Therefore, it can be assumed that with an internal sound level of around 80dB(A), the lower exposure threshold when considering noise at work, and above that anticipated to be generated by the establishment even during evenings of entertainment the external sound level will be 40dB(A). Assuming a 15dB reduction for an open window (BS8233) this would result in and internal sound level of 25dB(A).

4.7. This would result in sound levels experienced within the nearby properties from the activities within the venue well below those recommended within the above-mentioned guidance or 50dB(A) externally and 35dB(A) internally. Properties along Warwick Street backing onto the rear of the premises will also experience lower sound levels as the rear brick/stone walls to the properties will provide additional attenuation.

4.8. Based on the nature of the entertainment and background music no bass sound will be experienced outside of the establishment.

4.9. During the monitoring an inspection of the building was undertaken and a weak spot in the fabric of the building was identified by the doors to the outside yard area. It is therefore recommended that these are replaced prior to opening and the yard fitted with a secure fence and gate to further reduce noise breakout and to provide additional secure and control over the premises.

5. Conclusion

5.1. The proposed development will consist of a small wine bar and retail sales area, with only small numbers of patron available. Some entertainment in the form of background music and sole/duo acoustic artists is planned on occasions. However, the developed will close by 23:00 and additional work being undertaken to the structure of the venue prior to opening will also improve the attenuation to be offered, as will any patrons within the venue during opening hours.

5.2. An assessment of the proposed building has been undertaken and shown to have an attenuation of approx. 40dB. Given the nature of the venue and planned entertainment this will result in sound levels of around 40dB(A) or less outside the building.

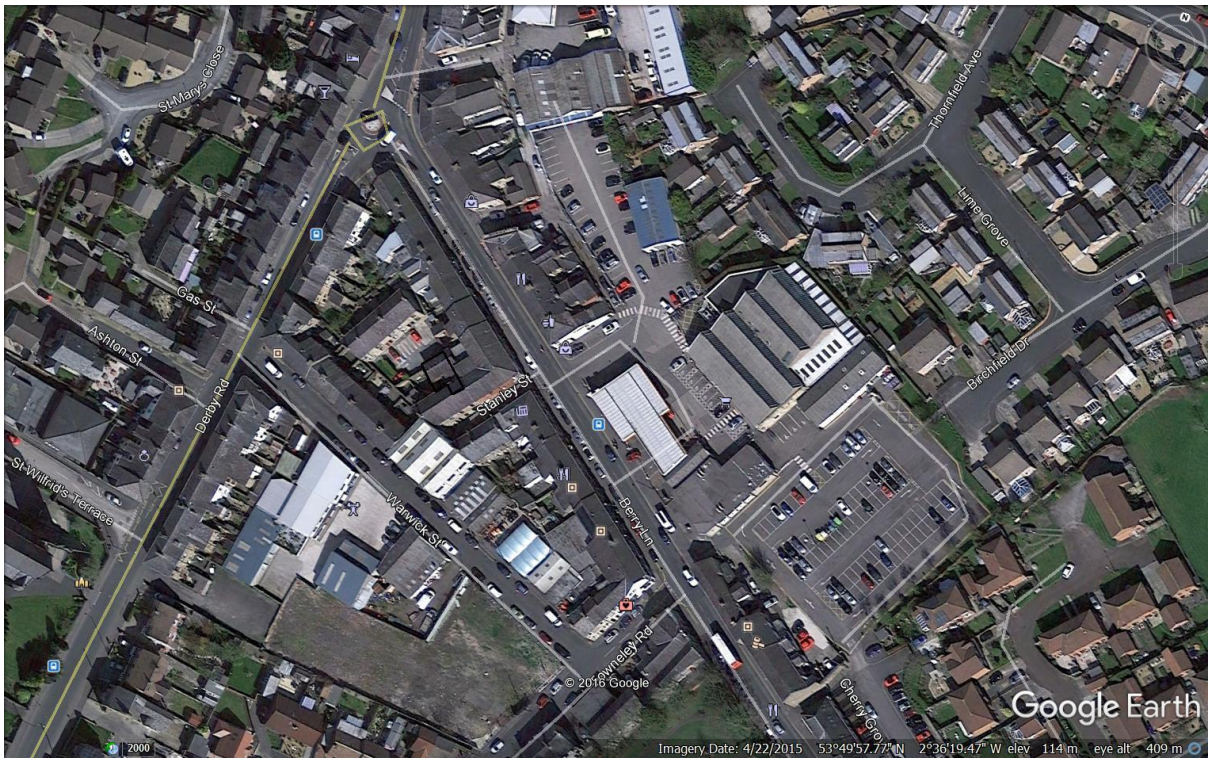
5.3. Internal levels within nearby residential properties will therefore be in the region of 25dB(A), significantly below the existing background sound level and the recommended level of 35dB(A) within World Health Organisation, BS8233: 2014 and the Lancashire Planning and Noise Guidance.

5.4. External levels will likewise be below the recommended 50dB(A) with amenity areas of residential properties along Warwick Street approximately 10dB lower due to the barrier effect of the garden walls.

5.5. However, it is recommended that the external door to the rear yard is improved/replaced as this currently consists of a single glazed door and was identified as a weak spot to the fabric of the building. The door should be replaced with a minimum of a standard UPVc door and all glazing should be of standard double glazing.

5.6. Based on the measurements undertaken and the proposed use of the venue it will not have a significant adverse impact on surrounding noise sensitive premises and as such complies with the requirements of the National Planning Policy Framework with respect to sound levels.

Figure 1 – Aerial Photograph



Appendix A – Calibration Certificates

Certificate of Calibration

Cirrus Research plc
dedicated to noise measurement

Equipment Details

Instrument Manufacturer	Cirrus Research plc
Instrument Type	CR:171B
Description	Sound Level Meter
Serial Number	G066429

Calibration Procedure

The instrument detailed above has been calibrated to the publish test and calibration data as detailed in the instrument hand book, using the techniques recommended in the latest revisions of the International Standards IEC 61672-1:2002, IEC 60651:1979, IEC 60804:2001,IEC 61260:1995, IEC 60942:1997, IEC 61252:1993, ANSI S1.4-1983, ANSI S1.11-1986 and ANSI S1.43-1997 where applicable.
Sound Level Meters: All Calibration procedures were carried out by subsitituting the microphone capsule with a suitable electrical signal, apart from the final acoustic calibration.

Calibration Traceability

The equipment detailed above was calibrated against the calibration laboratory standards held by Cirrus Research plc. These are traceable to International Standards {A.0.6}. The standards are:

Microphone Type	B&K 4192	Serial Number	1920791	Calibration Ref.	S6450
Pistonphone Type	B&K 4220	Serial Number	613843	Calibration Ref.	S6388

Calibrated by T. A. Goodhill

Calibration Date 05 April 2016

Calibration Certificate Number 236809

This Calibration Certificate is valid for 12 months from the date above.

Cirrus Research plc, Acoustic House, Bridlington Road, Hunmanby, North Yorkshire, YO14 0PH
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Email: sales@cirrusresearch.co.uk

Certificate of Calibration

Cirrus Research plc
dedicated to noise measurement

Certificate Number: **105190**

Date of Issue: **05 April 2016**

Microphone Capsule

Manufacturer: **Cirrus Research plc** Serial Number: **204018A**

Model Number: **MK224**

Calibration Procedure

The microphone capsule detailed above has been calibrated to the published data as described in the operating manual of the associated sound level meter (where applicable).

The frequency response was measured using an electrostatic actuator in accordance with BS EN 61094-6:2005 with the free-field response derived via standard correction data traceable to the National Physical Laboratory, Middlesex, UK.

The absolute sensitivity at 1 kHz was measured using an acoustic calibrator conforming to IEC 60942:2003 Class 1.

Date of Calibration: **22 March 2016**

Open Circuit Sensitivity at 1 kHz: **45.8 mV/Pa** **-26.8 dB rel 1 V/Pa**

Environmental Conditions

Pressure: **100.90 kPa**

Temperature: **22.0 °C**

Humidity: **30.0 %**

Calibration Laboratory

Laboratory: Cirrus Research plc
Acoustic House, Bridlington Road, Hunmanby
North Yorkshire, YO14 0PH, United Kingdom

Test Engineer: Debra Swalwell

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bsi. ISO 9001 Quality Management FM 531001 ISO 14001 Environmental Management EMS 552104

Certificate of Calibration

Cirrus Research plc
dedicated to noise measurement

Certificate Number: **105188**
Date of Issue: **05 April 2016**

Acoustic Calibrator

Manufacturer: **Cirrus Research plc** Serial Number: **65564**
Model Number: **CR:515**

Calibration Procedure

The sound calibrator detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC 60942:2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

The sound pressure level was measured using a WS2F condenser microphone type MK:224 manufactured by Cirrus Research plc.

The results have been corrected to the reference pressure of 101.33 kPa using the manufacturer s data.

Date of Calibration: **24 March 2016**

Initial Calibration Results

Measurement	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
1	94.08	1000.4	0.34
2	94.09	1000.4	0.37
3	94.07	1000.4	0.36
Average	**94.08**	**1000.4**	**0.36**
Uncertainty	± 0.13	± 0.1	± 0.10

The reported uncertainties of measurement are expanded by a coverage factor of k=2, providing a 95% confidence level.

Adjusted Calibration Results

Measurement	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
1	94.00	1000.4	0.34
2	94.01	1000.4	0.35
3	93.99	1000.4	0.35
Average	**94.00**	**1000.4**	**0.35**
Uncertainty	± 0.13	± 0.1	± 0.10

The reported uncertainties of measurement are expanded by a coverage factor of k=2, providing a 95% confidence level.

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bsi. ISO 9001 Quality Management FM 531001 ISO 14001 Environmental Management EMS 552104