



Acoustic Survey and Assessment for Proposed Drinking Establishment at, 19-23 Highfield Road, Blackpool, FY4 2JF.

Prepared for:

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August 2021



Contents

1. Introduction	3
Site Location and Context	3
2. Policy and Guidance.....	4
3. The Assessment	7
4. Conclusion.....	9
Figure 1 – Aerial Photograph	10
Appendix A – ceiling design Visual.....	11



1. Introduction

- 1.1. Martin Environmental Solutions has been commissioned to undertake an acoustic assessment to support a planning application for the conversion of 19-23 Highfield Road, Blackpool, FY4 2JF to a drinking establishment.

Site Location and Context

- 1.2. The development site is situated along Highfield Road, a busy commercial road, with commercial units to each side and opposite. Above the development site are situated residential flats.
- 1.3. An aerial Photograph is enclosed in Figure 1.
- 1.4. It is the potential impact on the above residential properties that has raised concerns and prompted the production of 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 February 2019, 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. 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.
- 2.12. 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.

2.13. 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

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

2.15. 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

- 3.1 The use of the ground floor as a drinking establishment has the potential to impact on the existing adjacent residential properties. The potential source of adverse sound could be internal or external.
- 3.2 It has been confirmed that there will be no external plant or extraction equipment installed as part of the development and there will be no external area for customers. This leaves the internal sound levels and the potential for sound transfer through the structure.
- 3.3 Previous monitoring by Martin Environmental Solutions has identified sound levels of up to 81dB(A) in a full bar of a similar size. This also relates to the lower value identified in the Noise at Work Regulations 2005.
- 3.4 The criterion identified above from the guidance suggests a recommended level of 35dB(A) during the day and 30dB(A) at night within the flats above. A reduction of at least 51dB is therefore required between the ground and first floor.
- 3.5 A suggested build specification for the dividing floor/ceiling has been identified to provide this level of attenuation. In addition, to prevent any potential flanking noise it is advised to treat the walls of venue. This will also prevent the passage of sound to the adjacent commercial properties.
- 3.6 The proposed ceiling specification builds upon the existing ceiling/floor construction and is based around the iKoustic Muteclip ceiling specification¹. Alternative specifications and materials are available to achieve the same level of attenuation.
- 3.7 The following specification when installed should provide a 54dB reduction (61(-1;-7)dB $D_{n,T,w}(C:C_{Tr})$).
- The existing joists should be filled with acoustic mineral wool (60Kg/m³) insulation should fill approx. 80% of the void depth to prevent it from being compressed.

¹ <https://www.ikoustic.co.uk/systems/timber-ceiling/muteclip-double>



- MuteClip isolation clips are then fitted to the joists. They should be fitted no nearer than 100mm to adjacent walls and spaced no more than 400mm vertically and 800mm horizontally to form a diamond configuration.
- Muteclip channels are then installed perpendicular to the joists and must overlap by 200mm when joining to channels together.
- Fix the first layer of acoustic plasterboard to the runners. A 2-3mm gap should be left around the room. The plasterboard must not come into contact with the walls. Any gaps to be filled with acoustic sealant.
- Adhere 'Tecsound' to the acoustic plasterboard staggering joints.
- Fix second layer of acoustic plasterboard, stagger joints and leave the 2-3mm gap around the edge of the room. Make sure the screws go into the Muteclip channels. Seal all gaps with acoustic sealant.
- Scrim tape all joints and finish with a skim plaster.

- 3.8 Below the new ceiling it is recommended that an independent stud wall is installed on separating walls, with a 600mm spacing. Resilient bars or the above Muteclip system to be fitted to the stud wall and the voids filled with acoustic mineral wool (60Kg/m³) insulation should fill approx. 80% of the void depth to prevent it from being compressed. One layer of 15mm soundbloc acoustic plasterboard to be fitted with a 2-3mm gap and any gaps filled with acoustic sealant. The joints can then be scrim taped and a skim plaster finish provided.
- 3.9 The above specifications will ensure that the separating structure between the ground floor drinking establishment and the first-floor residential accommodation will achieve a minimum of 51dB reduction, while the wall specification will prevent flanking transmission and sound transmission to neighbouring properties.
- 3.10 This will allow the use of the drinking establishment to continue without exceeding the recommended night-time sound levels within the first-floor flat.



4 Conclusion

- 4.1 The proposed use of the development site has the potential to adversely affect the use of the existing first-floor accommodation. As such a design specification for improvements to the separating structure have been identified. This design will provide a minimum of 54dB reduction in sound level transference between the two uses.
- 4.2 This would allow sound levels of up to 84dB(A) at night to be generated within the ground floor while still achieving the recommended night-time sound level of 30dB(A) with the accommodation.
- 4.3 The inclusion of the above mitigation measures will ensure that the internal sound levels are acceptable within the above accommodation and will result in a No Observe Effect on the residents in line with the Noise Policy Statement for England.
- 4.4 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 – ceiling design Visual

MuteClip® LP Installation Guide Ceiling To Wooden Joist Ceiling

