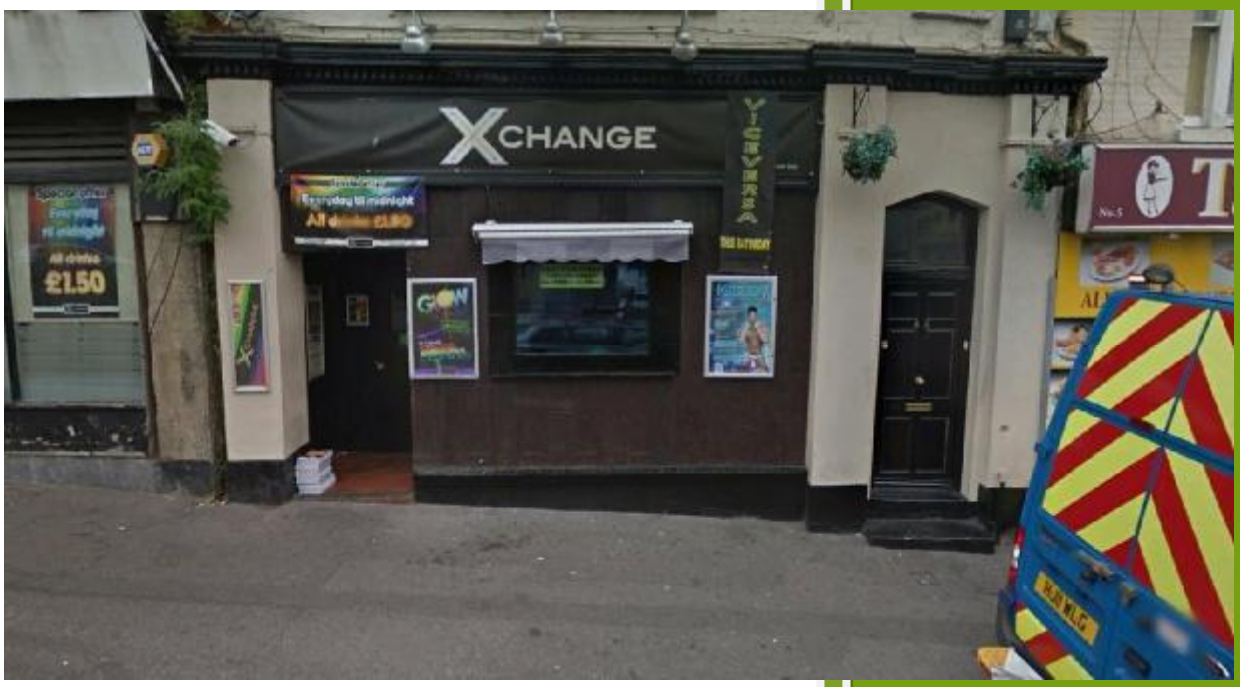
JTEC Environmental

2022

Preliminary Noise Survey Report



JTEC ENVIRONMENTAL LTD

4 The Triangle,
Bournemouth
Dorset
BH2 5RY

Preliminary Noise Survey Report

Location:

4 The Triangle,
Bournemouth
Dorset
BH2 5RY

Commissioned by:

Bassem
c/o 4a The Triangle
Bournemouth
Dorset
BH2 5RY

Survey Date: 5th December 2022

Surveyor: J D Chilvers I.Eng. B.Sc. Grad IOSH, MIET, AMIOA, LCG

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Executive Summary

JTEC Environmental Ltd were instructed to carry out a noise impact assessment for a planning application to reopen a former nightclub at 4 The Triangle, Bournemouth.

There is a long list of noise and other complaints associated with the former operators of this venue. This report is only concerned with the issues regarding noise complaints.

This report is the first phase of several in providing an assessment of the current acoustic properties of the building. From these results, an acoustic specification will be determined to prevent the recorded and live music planned from affecting neighbouring properties and residents nearby. Further actions to achieve this are to engage the services of specialist companies who deal with nightclub noise in order to specify and install suitable sound reducing materials based upon the results obtained from the sound tests.

The site is located near to the town centre with retail shopping outlets nearby. The preliminary noise survey was carried out in order to establish whether the adjacent premises and rooms above would be affected by noise from music from the proposed nightclub.

The ground floor is currently empty and retail shop space is either side – both occupied. The upper floors are office accommodation and are not planned to be used for living accommodation.

Sound insulation testing was carried out on the floor above and the party walls either side in accordance with the requirements of Approved Document E – Resistance to the passage of sound 2003 with 2004 amendments.

Purpose of the Noise Survey

JTEC Environmental Ltd were instructed to carry out a noise impact assessment for a planning application to reopen a former nightclub at 4 The Triangle, Bournemouth.

There is a long list of noise and other complaints associated with the former operators of this venue. The complaints came from nearby residents living nearby. This report is only concerned with the issues regarding noise complaints and is the first part of several assessments to achieve a satisfactory outcome.

The ground floor is currently empty and retail shop space is either side – both occupied. A nailbar is to the left of the proposed nightclub and a restaurant to the right. The nailbar operates until around 17:00 each working day and the restaurant currently closes at 22:00. The upper floors are office accommodation and are not planned to be used for living accommodation.

The site is located near to the town centre with retail shopping outlets nearby. The preliminary noise survey was carried out in order to establish whether the adjacent premises and rooms above would be affected by noise from music from the proposed nightclub.

Sound insulation testing was carried out on the floor above and the party wallseither side in accordance with the requirements of Approved Document E – Resistance to the passage of sound 2003 with 2004 amendments.

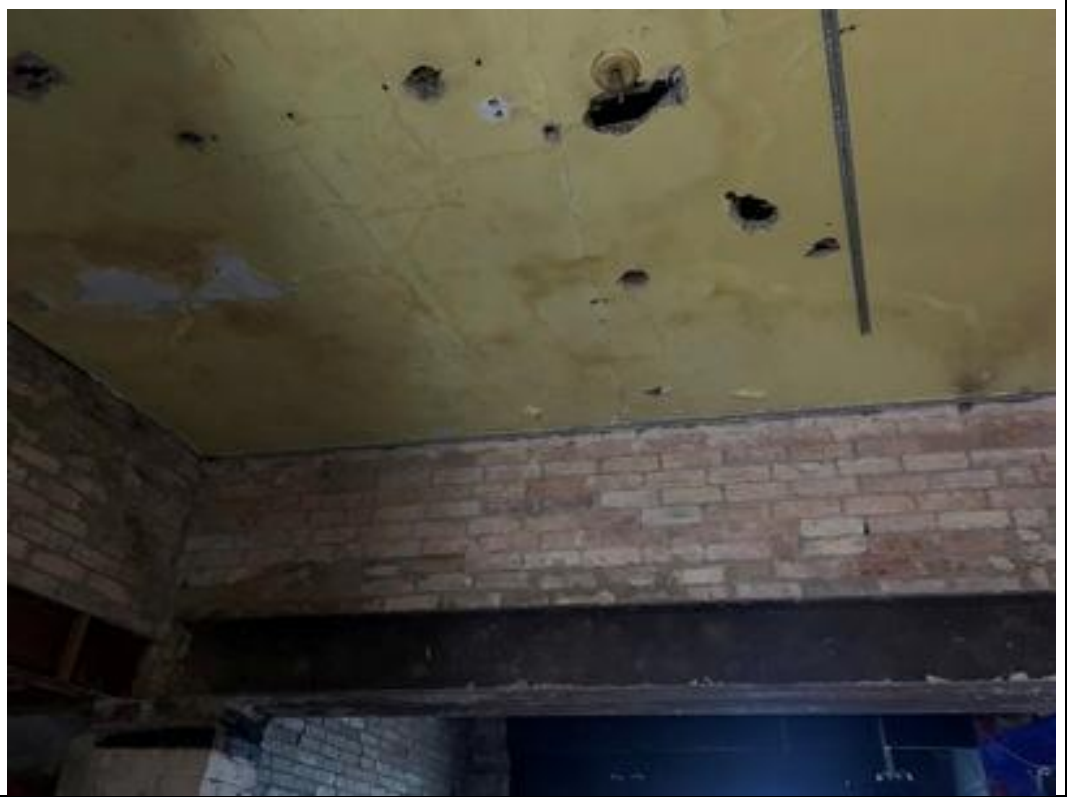
The Environmental Health Officer indicated that in accordance with national guidance under the NPPF, a noise survey was required to assess the likely impact of the breakout noise from the nightclub and to suggest any remedial measures that might be required.

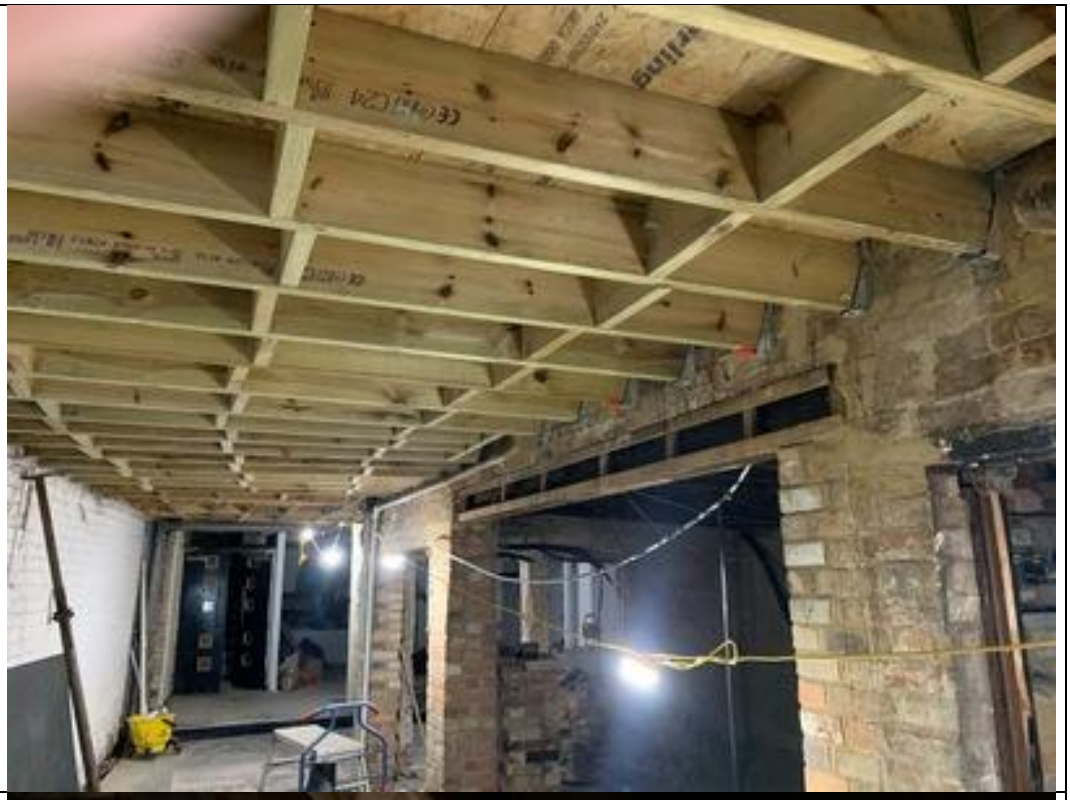
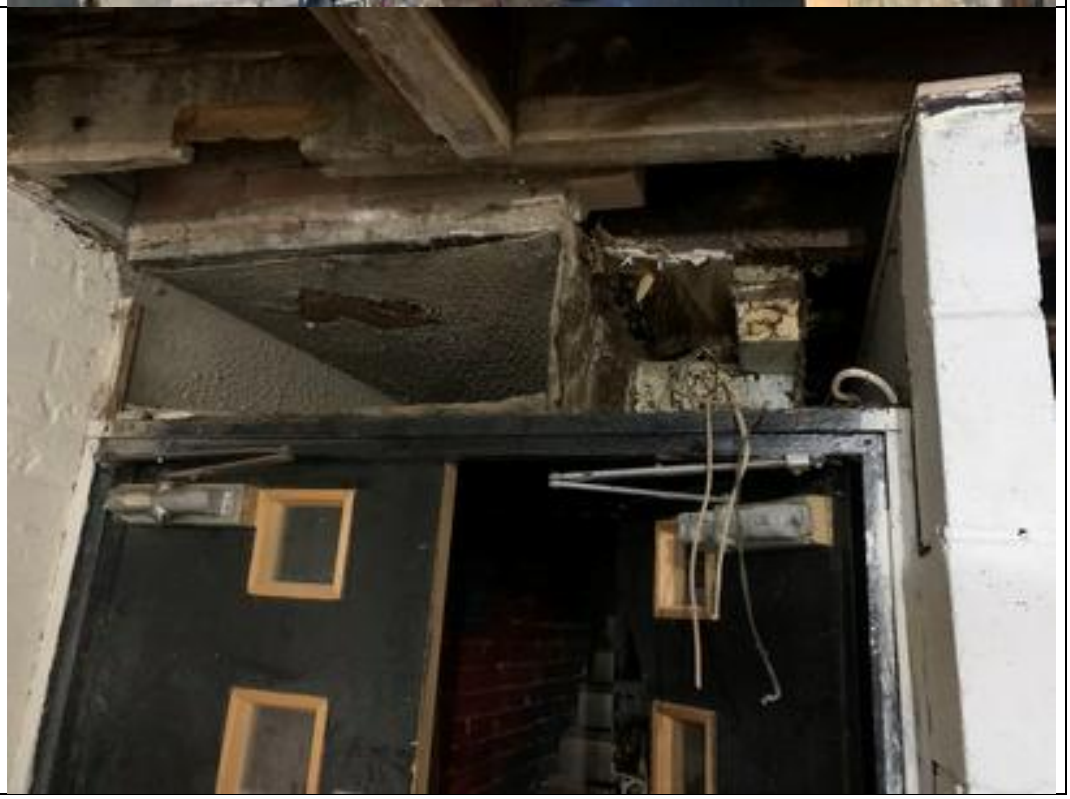
Description of the Areas Assessed

Airborne sound measurements were taken between the office floor above the nightclub and the party walls either side of the nightclub.

The nightclub area has been stripped out and the internal areas are shown in the photographs below. The ceiling below the office is lath and plaster with timber floorboards above.

The party walls either side of the nightclub are masonry estimated to be 9" brickwork with lining panels internally in each of the neighbouring units. The lining panels cannot be relied upon for sound insulation in the longer term as the occupants may change and so the nightclub area must provide for any attenuation.

Existing ceiling structure below office above	

New flat roof structure	
Duct at rear of building to be removed	

A UKAS calibrated Class 1 integrating sound level meter was used for the sound insulation testing (details on appended sound test report).

The building is of masonry construction with timber floors. The ground floor is occupied by retail shops either side and the first floor is office accommodation (currently vacant).

Assessment Methodology

National Planning Policy Framework

In March 2012 PPG24 was replaced by the 'National Planning Policy Framework' (NPPF), and is the current planning policy guidance within England. Paragraph 123 of the NPPF states:

'Planning policies and decisions should aim to:

- Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;
- Mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from new development, including through the use of conditions;
- Recognise that development will often create some noise and existing business wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and
- Identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.'

In terms of 'adverse effects' the NPPF refers to the 'National Policy Statement for England' (NPSE), which defines three categories, as follows:

'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 the 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.'

Although the above terms are provided in NPSE, paragraph 2.22 acknowledges that these terms require further research in order to establish what is meant in terms of 'adverse impact'.

> *'2.22 It is not possible to have a single objective noise based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available.'*

The noise policy refers to the World Health Organisation recommendations when discussing health and quality of life. Therefore, the standards set out in the WHO guidance document have been used for setting appropriate noise limits.

World Health Organisation Guidelines for Community Noise

In accordance with the requirements of WHO 1999 the following internal daytime and night-time noise limits, for noise from external sources, will need to be met within sensitive rooms of the residential dwellings:

- 35dB $L_{Aeq\ (16\ Hour)}$ during the daytime in noise sensitive rooms other than bedrooms.
- 30dB $L_{Aeq\ (8\ Hour)}$ during the night-time in bedroom areas.
- 45dB $L_{AMAX\ (fast)}$ should not be exceeded during the night-time in bedroom areas.

WHO 1999 also identifies that the attenuation provided by a window open for ventilation purposes is up to 15 dB. Relating this information to the above internal noise levels equates to allowable external noise levels of 50dB $L_{Aeq\ (16\ hour)}$ during the daytime and 45dB $L_{Aeq\ (8\ Hour)}$ at night, with maximum noise levels of 60dB $L_{AMAX\ (fast)}$

These levels are equivalent to the upper limits of Noise Exposure Category A, as per discontinued guidance PPG24 where no mitigation measures would be required in order to meet suitable internal noise levels. Should these levels be exceeded, then mitigation measures would be required.

WHO also proposes an external noise limit of 55 dB LAeq (16 Hour) during the daytime in outdoor living areas.

Guidance on suitable internal noise levels can also be found in BS8233:2014.

This standard was updated in 2014, guidance in respect of indoor ambient noise levels is contained within the standard and tabulated below.

Typical situations Design Range $L_{Aeq,T}$ dB

	Good	**Reasonable**
Living rooms	**30**	**35**
Bedrooms[a]	**30**	**35**

Discussion of Noise Measurements

The airborne sound insulation tests carried out all passed the criteria specified in ADE 2003.

However, this relates to domestic accommodation and not to the noise output from a nightclub and live music venue. The noise levels are likely to be up to 100 dB(A) with lower frequencies likely to prevail.

Conclusions

An initial noise survey has been undertaken to assess the likely noise impact of recorded and live music upon the internal areas of neighbouring properties.

It is therefore reasonable to conclude that the noise from the proposed operation will cause an unfavourable noise impact (SOAEL – Significant Observed Adverse Effect Level) and consequently the building will require significant sound transmission reduction measures.

Advice is currently being sought from specialist companies who deal with nightclub noise problems in order to obtain a specification to reduce the transmitted noise levels to acceptable levels within neighbouring premises. This is expected to include acoustic insulation applied to the ceiling areas of the proposed nightclub, to the party walls and access / egress points. A programme of sealing up any holes in the ceilings will be required and any loudspeakers etc will be to be fixed to anti-vibration mountings.

The specification will be submitted to Environmental Health for approval before any works commence.

Glossary

A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
C Weighting	A standard weighting of the audible frequencies used for the measurement of Peak Sound Pressure Level.
dB(A)	Decibels A weighted
dB(C)	Decibels C weighted
Decibel (dB)	The units of sound level and noise exposure measurement.
$L_{EP,d}$	Daily personal noise exposure
L_{10}	The A weighted level of noise exceeded for 10% of the specified measurement period (T). It is an indication of the upper limit of fluctuating noise.
L_{90}	The A weighted level of noise exceeded for 90% of the specified measurement period (T). In BS4142-1997 it is used to define background noise level.
$L_{Aeq,T}$	Equivalent sound pressure level. A measure of the average sound pressure level during a period of time, t, in dB.
L_{AE}	Sound Exposure Level (SEL) with 'A' frequency weighting.
L_{ASmax}	The maximum sound level with 'A' Frequency weighting and Slow Time weighting.
Peak	The maximum value reached by the sound pressure at any instant during a measurement period (in dB usually with a C frequency weighting).
Octave Band	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit. The width of the octave band increases at higher frequencies.
NEC	Noise Exposure Category
SEL	Sound Exposure Level
SRI	Sound Reduction Index

Equipment List

Cirrus CR511E Calibrator (ser no. 035171)
Norsonic 118 Class 1 Sound Level Analyser

References

Approved Document E – Resistance to the passage of sound 2003 (as amended 2004)
National Planning Policy Framework (NPPF) March 2012.
PPG24
Control of Road Traffic Noise - HMSO
BS4142:2014
BS8233:2014
BS7445
Control of Noise at Work Regulations 2005
L108 – Controlling Noise At Work (Guidance on the Control of Noise at work Regulations 2005)
Health & Safety at Work Act 1974
Environmental Health Criteria 12 - Noise. World Health Organisation,