



Measurement of Environmental Noise

Report Reference Number: 9863-1

For:

Dean Mirfin

Project/Site Address

Land Adj To 69 Talbot Road, Pensitone, Barnsley, South Yorkshire, S36 9ED

Prepared by

John Ashe

Test Date

31st October 2019

Report Date

1st November 2019

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Measurement Survey
Undertaken By

Richard Stockdale



Report Completed By

John Ashe



2.0 – Objectives

E2 Consultants were instructed by Dean Mirfin to prepare a noise assessment for the proposal of erecting of a dwelling house. The proposed dwelling will have an existing mill to the rear of it. This business operates during the day time only and the main source of noise from the site is from saws within the workshops on the site.

The methodology used for the purpose of this assessment is BS 4142 and BS8233. In order to determine the background noise levels of the area, noise levels were measured at a location closest to the nearby noise-sensitive dwellings most likely to be affected by the noise levels. These measurements were taken during the day and night of 31st of October.

The noise levels measured have been considered and assessed against this national guidance in order to establish the acceptability of the development.

Details regarding the assessment methodology used, together with the results of the survey undertaken and the conclusions and recommendations, are presented within this report.

3.0 – Site Description

The site is currently an disused outbuilding and is directly beside the existing bakery building and to the rear of the existing shops at the ground floor and the flats on the first floor.

The main concern on the site is from noise the bakery extraction equipment whilst it is being used due to the proximity of the proposed dwelling to the site and may give rise to adverse effects on the potential occupiers of the new dwelling.

A site plan is below showing the location of the proposal to the Mills:



As can be seen in the above, the proposal is directly adjacent to the mill building.

4.0 – Microphone Position

The microphone was placed at both at the proposed dwelling and on Bent Street away from the mill to obtain background noise measurements as the noise sources from the commercial unit was not controllable and background noise measurements had to be taken off site.

The following measurements were taken:

Measurement Time	Location	Duration	Reading Reference
31/10/2019 13:07 – 14:37	Proposed Site	1.5 Hour	191031r_0001
31/10/2019 14:50 – 16:20	Bent Street	1.5 Hour	191031r_0002

5.0 – Uncertainties

The following points are noted to allow for and minimise where possible any uncertainties in the measurements taken.

- 1) A class one microphone has been used for the purpose of the survey (**Norsonic 140 SLM – serial number 1405312**).
- 2) Weather conditions – 90% cloud cover.

	Before Measurements	After Measurements
Wind speed:	1m/s - NW	2m/s - NW
Humidity:	52%	52%
Temperature:	17°C	15°C
Barometric pressure:	1013mb	1013mb

The weather during the day was noted as cloudy with winds of less than 5m/s with no prevailing directional component.

- 3) Noise levels at the time of the measurements were noted to be fairly constant with no sudden increases or decreases in noise levels.
- 4) All results seen in this report will be rounded, for example, 82.5 will be rounded up to 83.

6.0 – Recommendations & Results

The data taken from site is shown below:

Measurement Time	Location	Laeq	L90
31/10/2019 13:07 – 14:37	Proposed Site	56dB	N/A
31/10/2019 14:50 – 16:20	Bent Street	53dB	46dB

For the purpose of the assessment, the microphone was set up in two locations as described in the microphone location part of this report.

BS4142

BS4142 Assessment

As can be seen by the measurements taken, the noise levels on site from the commercial units adjacent to the property are audible.

This is mostly from installed plant equipment and external activities associated with the businesses.

The BS4142 assessment is below:

The predicted problem noise level at the nearest dwellings would be as below:

$$10\log (10^{5.6} - 10^{5.3}) = 53\text{dB}$$

Background Noise Levels

L90 – 46dB

As can be seen above the noise levels are in excess of 5dB over the background noise levels and will have an adverse effect on the dwelling.

Based on the above readings the noise levels from the mill will be in excess of 5dB over the background noise levels. However, there is currently not a solid barrier between the site and the proposal. By erecting an close boarded fence, the noise levels from the Mill can be reduced by a minimum of 10dB and the noise levels within amenity area of the dwellings would be acceptable.

BS8233 Assessment

Noise levels on the site from the Mill are not excessive and acceptable internal noise levels can be achieved by using standard glazing to the rear of the property.

7.0 – On Site Microphone Calibration

Microphone calibration: 114.0 dB 113.9dB = Drift of -0.1dB

(The drift value is within acceptable limits of +/-0.3dB)

8.0 – Technical Appendix

Class 1 Microphone: Norsonic 140 SLM
Calibrator: Norsonic 1251

SITE DATA:

Please see attached sheets sent with this document.

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CALIBRATION



0789

Certificate number: U29823

Certificate of Calibration and Conformance

Test object: Sound Calibrator
Manufacturer: Norsonic
Type: 1251
Serial no: 33547

Customer: E2 Consultants
Address: E2 HOUSE, South Park Way,
Wakefield 41 Business Park,
Wakefield. WF2 0XJ.
Contact Person: John Ashe
Order No: 97451

Measurement Results:	Level	Level Stability	Frequency	Frequency Stability	Distortion
1:	114.06 dB	0.06 dB	1000.45 Hz	0.00 %	<0.3 %
2:	114.07 dB	0.06 dB	1000.45 Hz	0.00 %	<0.3 %
3:	114.06 dB	0.06 dB	1000.45 Hz	0.00 %	<0.3 %
Result (Average):	114.06 dB	0.06 dB	1000.45 Hz	0.00 %	<0.3 %
Expanded Uncertainty:	0.10 dB	0.02 dB	1.00 Hz	0.01 %	0.10 %
Degree of Freedom:	>100	>100	>100	>100	>100
Coverage Factor:	2.00	2.00	2.00	2.00	2.00

The stated level is relative to 20μPa. The level is traceable to National Standards.

The stated level is valid at reference conditions. The following correction factors have been applied during the measurement: Pressure: 0.0005 dB/kPa Temperature: 0.003 dB/°C Relative humidity: 0.000 dB/%RH Load volume : 0.0003 dB/mm³

The reported expanded uncertainty of measurements is based on a standard uncertainty multiplied by the coverage factor of k=2, providing a level of confidence of approximately 95%. The uncertainty has been determined in accordance with UKAS requirements.

Records: K:\C A\Calibration\Nor-1504\Nor-1018 CalCal\2018\NOR1251_33547_M1.nmf

Environmental conditions:	Pressure:	Temperature:	Relative humidity:
Reference conditions:	101.325 kPa	23.0 °C	50 %RH
Measurement conditions:	101.362 ± 0.042 kPa	22.2 ± 0.1 °C	39.9 ± 1.2 %RH

Date received for calibration: 15/10/2018
Date of calibration: 17/10/2018
Date of issue: 17/10/2018
Engineer

Supervisor

Palanivel Marappan B, Eng(Hons), M.Sc

Darren Batten TechIOA

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CALIBRATION



0789

Certificate of Calibration and Conformance

Certificate No.: U25734

Test object: Sound Level Meter, BS EN IEC 61672-1:2003 Class 1 (Precision) and associated Frequency Analyser BS EN IEC 61260, Class 1
Manufacturer: Norsonic
Type: 140
Serial no: 1405312
Customer: E2 Specialist Consultants Ltd
Address: 3B South Park Way, Wakefield Junction 41 Business Park, Wakefield. WF2 0XJ.
Contact Person: John Ashe.

Method :

Calibration has been performed as set out in CA Technical Procedures TP01 & 02 as appropriate. These are based on the procedures for periodic verification of sound level meters as set out in BS EN IEC 61672-3:2006 and for electrical testing of frequency filters as set out in BS EN IEC 61260. Results and conformance statement are overleaf and detailed results are in the attached Test Report.

	Producer:	Type:	Serial No:	Certificate number
Microphone	Norsonic	1225	168187	25733
Calibrator*	Norsonic	1251	33547	U25732
Preamplifier	Norsonic	1209	15370	Included

Additional items that also have been submitted for verification

Wind shield	Norsonic	Nor1451
Attenuator	None	
Extension cable	None	

These items have been taken into account wherever appropriate.

Environmental conditions:	Pressure:	Temperature:	Relative humidity:
Reference conditions:	101.325 kPa	23.0 °C	50.0 %RH
Measurement conditions:	99.95 ±0.01kPa	22.4 ±0.2°C	48.5 ±2%RH

Date received : 24/05/2017
Date of calibration: 05/06/2017
Date of issue: 05/06/2017

Engineer


Michael Tickner

Supervisor


Darren Batten TechIOA

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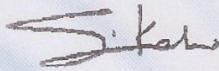
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Certificate of Competence in Environmental Noise Measurement

This is to certify that

John William Matthew Ashe

*has completed a course of instruction approved by the
Institute of Acoustics and designed to enable the candidate
to undertake environmental noise measurements in a
competent manner and has achieved a satisfactory
performance in the written and practical examinations
thereof and that this fact has been recorded in a
Register kept by the Institute for this purpose.*



Education Committee Chairman



Institute Secretary

Date 16 May 2014

Centre Leeds Metropolitan University

Reference Number EK161

*For the purposes of Credit Transfer or Professional Development this Certificate
may be considered to be equivalent to 25 points or hours*

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