

Heyford Park Bicester

Environmental Noise Survey Report

23195/ENS1

27 March 2017

For:
Dorchester Living
Heyford Park House
Heyford Park
Camp Road
OX25 5HD



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Document Control

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Attachments

Appendix A – Acoustic Terminology



1.0 Introduction

Hann Tucker Associates have been commissioned to undertake an environmental noise survey at Heyford Park.

This reports presents the survey methodology and findings.

2.0 Objectives

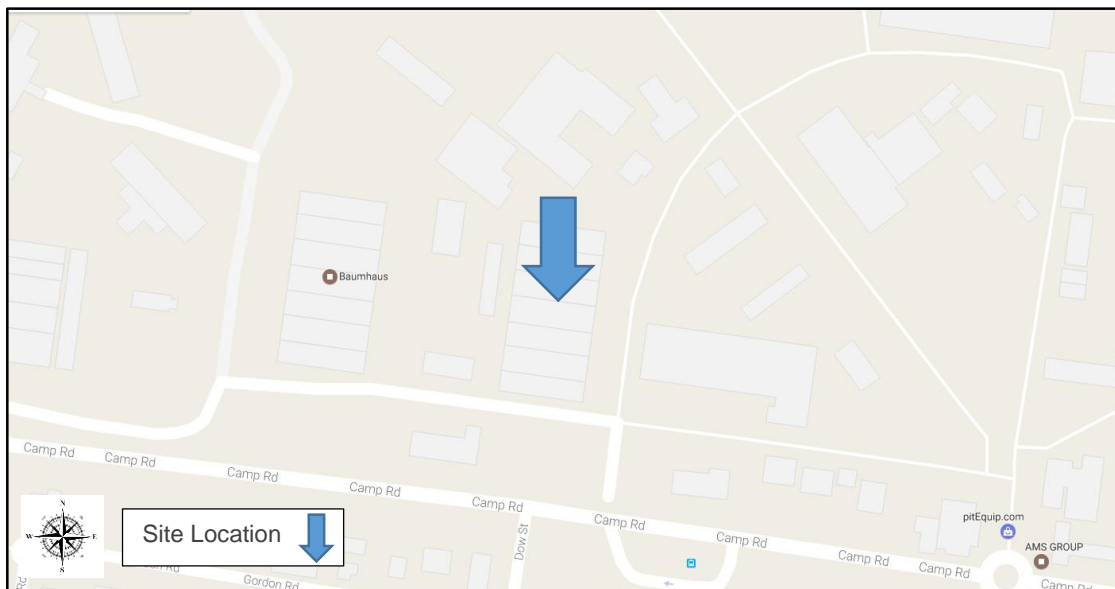
To establish, by means of detailed 24 hour daytime and night-time fully automated environmental noise monitoring, the existing A-weighted (dBA) L_{90} , L_{eq} and L_{max} environmental road, rail and air traffic noise levels at up to three secure and accessible on-site positions, using fully computerised unmanned monitoring equipment.

To prepare a report presenting our survey findings.

3.0 Site Description

3.1 Location

The site is located at Camp Road, Bicester. The location is shown in the Location Map below.



Location Map (Map Data ©2017 Google.com)

The site falls within the jurisdiction of Cherwell District Council.



3.2 Description

The site comprises a mixture of commercial and residential properties. To its west north and east lie commercial buildings and Camp Road lies to the south of the site, with residential properties to the south of Camp Road.

The site is shown in the Site Plan below.



Site Plan (Imagery © 2017 DigitalGlobe, Getmapping plc, Infoterra Ltd & Bluesky, Map Data © 2017 Google.)

4.0 Acoustic Terminology

For an explanation of the acoustic terminology used in this report please refer to Appendix A enclosed.

5.0 Methodology

The survey was undertaken by John Gibbs MIOA, MSEE, CEnv.

5.1 Procedure

Fully automated environmental noise monitoring was undertaken from approximately 11:00 hours on Tuesday 31 January to 11:00 hours on Wednesday 1 February.



During the periods we were on site the wind conditions were calm. The sky was generally overcast. We understand that generally throughout the survey period the weather conditions were similar. These conditions are considered suitable for obtaining representative measurement results.

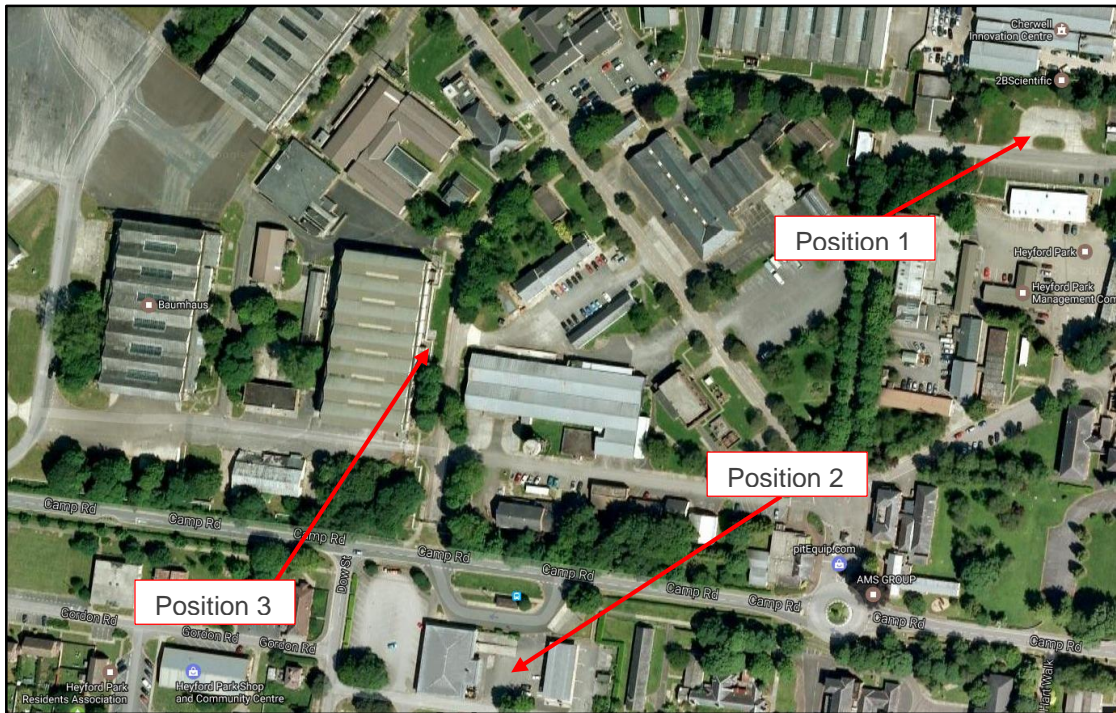
Measurements were taken continuously of the A-weighted (dBA) L_{90} , L_{eq} and L_{max} sound pressure levels over 15 minute periods.

5.2 Measurement Position(s)

The noise level measurements were undertaken at 3No. Positions as described in the table below.

Position No	Description
1	Placed on a tripod adjacent to the building.
2	Placed on a tripod adjacent to the building.
3	Placed on a tripod adjacent to the building.

The positions are shown on the plan below.



Site Plan (Imagery © 2017 DigitalGlobe, Getmapping plc, Infoterra Ltd & Bluesky, Map Data © 2017 Google.)

5.3 Instrumentation

The instrumentation used during the survey is presented in the table below:

Description	Manufacturer	Type	Serial Number	Calibration
Position 1 Type 1 Data Logging Sound Level Meter	Larson Davis	820	1873	LD calibration on 05/12/2014
Position 1 Type 1 ½" Condenser Microphone	Larson Davis	2541	8523	LD calibration on 05/12/2014
Position 2 Type 1 Data Logging Sound Level Meter	Larson Davis	Lxt SE	4569	LD calibration on 11/11/2015
Position 2 Type 1 ½" Condenser Microphone	PCB	377B02	155002	LD calibration on 11/11/2015
Position 3 Type 1 Data Logging Sound Level Meter	Larson Davis	Lxt SE	4086	LD calibration on 23/12/2014
Position 3 Type 1 ½" Condenser Microphone	PCB	377B02	146893	LD calibration on 25/11/2014
Type 1 Calibrator	Larson Davis	CAL200	3082	LD calibration on 09/06/2016



Each sound level meter, including the extension cable, was calibrated prior to and on completion of the surveys. No significant changes was/were found to have occurred (no more than 0.1dB).

Each sound level meter was located in an environmental case with the microphone connected to the sound level meter via an extension cable. Each microphone was fitted with a windshield.

6.0 Results

The results have been plotted on Time History Graphs 23195/TH1 to 23195/TH2 enclosed presenting the 15 minute A-weighted (dBA) L_{90} , L_{eq} and L_{max} levels at each measurement position throughout the duration of the survey.

The following table presents the lowest measured L_{A90} background noise levels during the survey:

Position	Lowest Measured L_{A90} Background Noise Level (dB re 2×10^{-5} Pa)		
	Daytime (07:00 – 23:00) Hours	Night-Time (23:00 – 07:00) Hours	24 Hours
1	32	33	32
2	31	31	31
3	32	33	32

7.0 Conclusion

An environmental noise survey has been undertaken in order to establish the currently prevailing noise levels.

Appendix A

The acoustic terms used in this report are defined as follows:

dB	Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. $30\text{dB} + 30\text{dB} = 33\text{dB}$, not 60dB).
dBA	<p>The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The _A subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted</p> <p>It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.</p>
$L_{90,T}$	L_{90} is the noise level exceeded for 90% of the period T (i.e. the quietest 10% of the measurement) and is often used to describe the background noise level.
$L_{eq,T}$	$L_{eq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, T .
L_{max}	L_{max} is the maximum sound pressure level recorded over the period stated. L_{max} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the L_{eq} noise level.
L_p	Sound Pressure Level (SPL) is the sound pressure relative to a standard reference pressure of 2×10^{-5} Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).
L_w	Sound Power Level (SWL) is the total amount of sound energy inherent in a particular sound source, independent of its environment. It is a logarithmic measure of the sound power in comparison to a specified reference level (usually 10^{-12} W).