ACOUSTIC DESIGN TECHNOLOGY
Noise and Vibration Consultants

ADT 2128

06 November 2014

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BASFORD LANE INDUSTRIAL ESTATE

ENVIRONMENTAL NOISE SURVEY REPORT

ACOUSTIC CONSULTANCY REPORT 2128/ENS

Revision	Date	Issued By	Checked By	Revision Notes
-	06 Nov 2014	Andrew Lockwood		

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1.0 SUMMARY

The proposal is to extend the existing Basford Lane Industrial Estate eastwards as indicated on the application drawing.

An environmental noise survey has been undertaken to determine the typical noise levels in the vicinity of the nearest noise sensitive dwellings.

Following discussions with the Environmental Health Officer, it is understood that should planning permission be granted, he would recommend the inclusion of one or more conditions limiting noise egress from the development. These would be set with reference to BS 4142 and the existing ambient noise levels.

2.0 BASIS OF ASSESSMENT

2.1 Site Location

The application site is located directly to the east of the existing Basford Lane Industrial Estate in Leekbrook, approximately 3km to the south of Leek town centre.

The surrounding area is predominantly rural, but there are a small number of residential dwellings on the unmade road to the south, the closest being approximately 100m from the site boundary.

2.2 Proposed Development

The proposal is to extend the existing industrial estate eastwards to encompass the undeveloped area of land identified on the application drawings.

3.0 ENVIRONMENTAL NOISE SURVEY

3.1 Instrumentation

The environmental noise survey was conducted using the following instrumentation:-

01dB Solo Class 1 Sound Level Meter
01dB MCE 212 ½ inch Microphone
Norsonic Nor1251 Microphone Calibrator
Microphone Windshield

The sound level meters were calibrated at the beginning of the survey period and checked at the end. No significant drift occurred.

3.2 Procedure

A manned environmental noise survey was undertaken between 01:30 hours and 08:00 hours on Tuesday 4 November 2014.

A single measurement position was selected as indicated on the attached site plan 2128/SP1.

The measurement microphone was mounted on a tripod, approximately 1.5 metres above ground level, and the analyser was set to log the 100ms short term L_{eq} continuously for the duration of the survey.

3.3 Weather Conditions

The weather conditions were dry and still for the duration of the survey, the temperature dropping to around freezing point during the early hours of the morning.

3.4 Existing Noise Climate

For the duration of the survey, the background noise levels were controlled by the "drone" of distant road traffic emanating from the direction of the M6.

Low levels of noise of an industrial nature were also audible at times, emanating from the direction of the existing industrial estate. However, these did not appear to significantly affect the background levels.

Aircraft were also occasionally audible, and whilst the associated noise affected the short term average (L_{Aeq}) and maximum (L_{Amax}) levels, they were not judged to affect the background (L_{A90}) levels.

The only localised noise of any significance during the survey was when one of the local residents came along past the monitoring position with his dogs just before 07:30 hours.

3.5 Results

The logged data has been post processed to determine the 1 minute L_{Aeq}, L_{A90} and L_{Amax} dB levels, which are presented on the attached time history graph 2128/TH1.

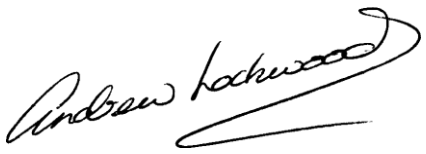
The logged data has also been post processed to determine the 15 minute L_{Aeq}, L_{A90} and L_{Amax} dB levels, and these are presented on the attached table 2128/T1. This shows that the background levels dropped as low as 28 dB L_{A90} between 02:45 and 03:00 hours.

3.6 Environmental Noise Design Criteria

Preliminary discussions with the Environmental Health Officer have established that appreciates that it is not possible to undertake any kind of meaningful noise impact assessment at this juncture, as neither the future uses, nor the associated noise levels are currently known.

At this stage of the application, he therefore merely requires the results of a background noise survey.

Should planning permission be granted, he would then recommend the inclusion of one or more conditions limiting the permissible levels of noise egress from the new development. These would be set with reference to BS 4142 and the measured noise levels summarised in this report.



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APPENDIX A

The annoyance produced by noise is dependent upon many complex interrelated factors such as 'loudness', its frequency (or pitch) and any variations in its level. In order to have some objective measure of the annoyance, scales have been derived to allow for these subjective factors.

dB(A) The human ear is more susceptible to mid-frequency noise than the high and low frequencies. To take account of this when measuring noise, the 'A' weighting scale is used so that the measured noise corresponds roughly to the overall level of noise that is discerned by the average person. It is also possible to calculate the 'A' weighted noise level by applying certain corrections to an un-weighted spectrum. The measured or calculated 'A' weighted noise level is known as the dB(A) level.

When the noise being measured has a variable amplitude, such as traffic noise, it is necessary to qualify the basic dB(A) unit. This may be done using a statistical index L_n dB(A), where n is an integer between 1 and 99, and is the percentage of the sample time for which the stated dB(A) level is exceeded. In defining the use of the index, both the value of n and the length of the sample period must be stated.

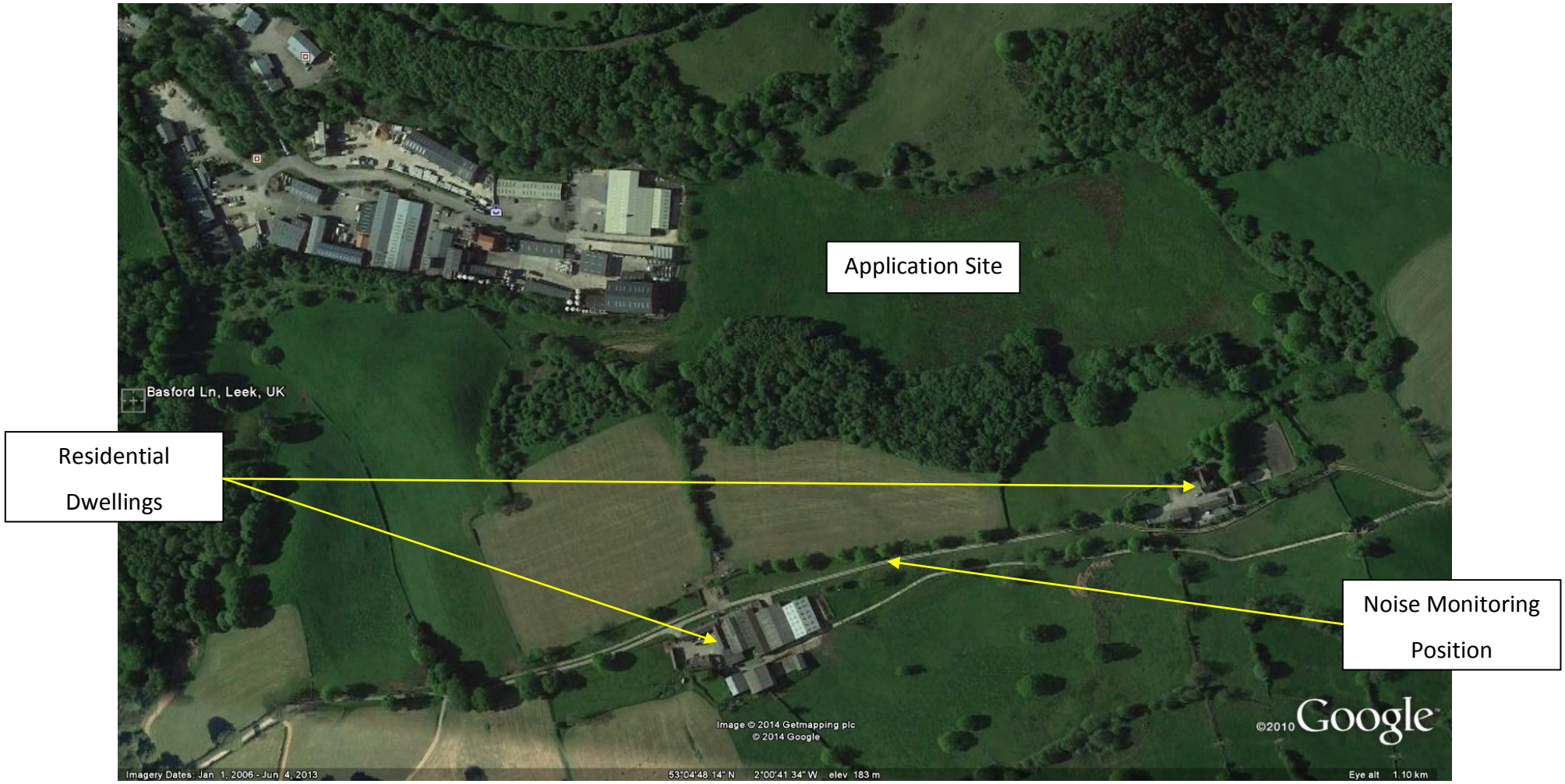
L_{10} L_{10}, being the dB(A) level exceeded for 10% of the time, has been shown to be a good indicator for traffic noise intrusion, and is used in assessing the effect of traffic noise on residential or commercial premises.

L_{90} L_{90} is the dB(A) level exceeded for 90% of the time, and is used as a measure of background noise level, as it excludes the effects of occasional transient levels, such as individual passing cars or aircraft.

In addition to the statistical noise indices defined above, the following noise units are also used to define variable amplitude noise sources:

L_{eq} The L_{eq} is defined as the notional steady sound pressure level which, over a stated period of time, would contain the same amount of acoustical energy as the actual fluctuating sound measured over the same period - i.e.: it is a measure of the "average" noise level

L_{max} The L_{max} is the maximum sound pressure level recorded over the measurement period.



Notes	**Description** Site Plan to Indicate Noise Monitoring Location	
	Project Basford Lane Industrial Estate	
	Date 06 November 2014	**Drawing No.** 2128/TH1

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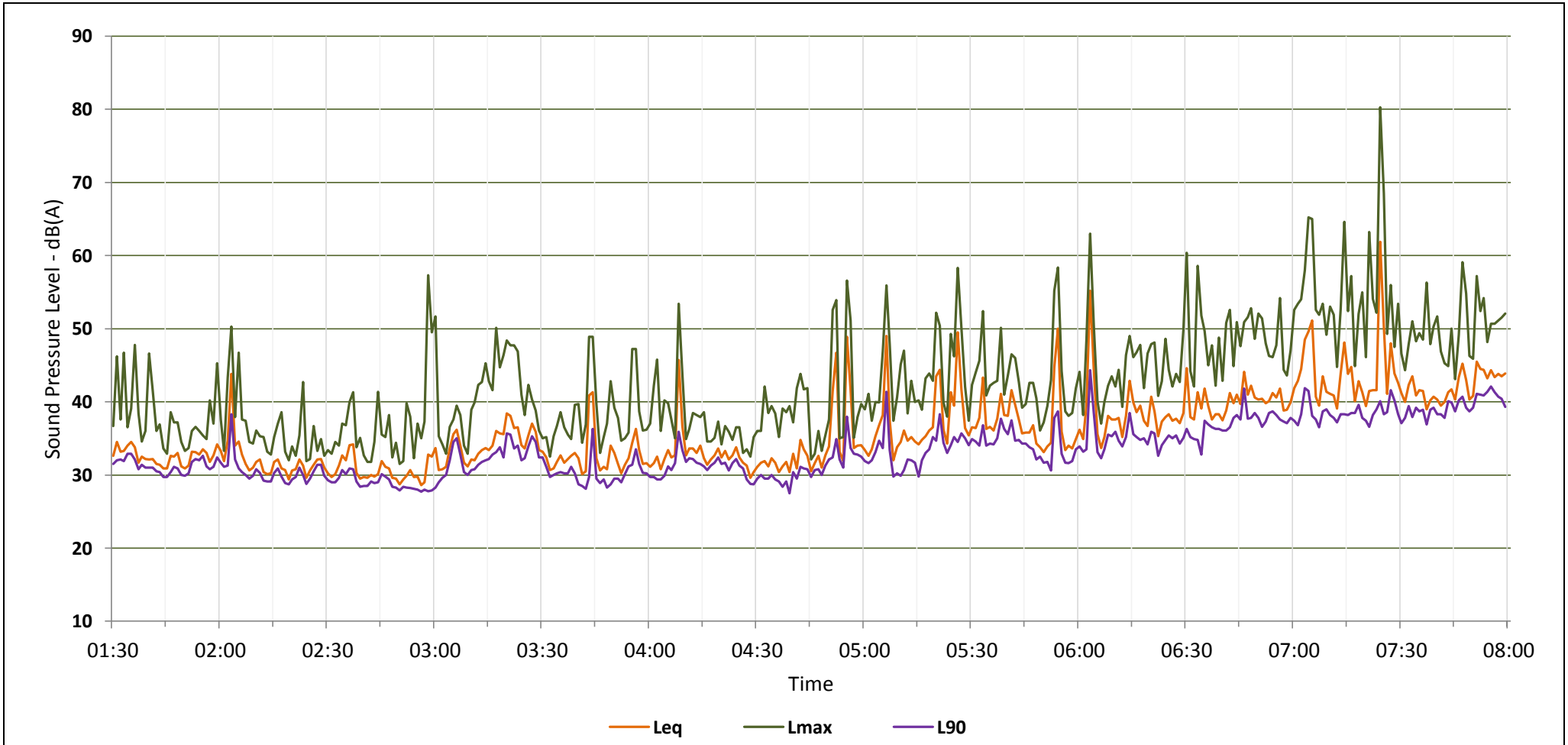

Notes

Description
Time History Graph for Measurement Position 1

Project
Basford Lane Industrial Estate

Survey Date
4 November 2014

Drawing No.
2128/TH1

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Summary of Recorded 15 minute L_{Aeq}, L_{A90} and L_{Amax} Levels.

Start Time	L_{Aeq}	L_{A90}	L_{Amax}
1:30	32.8	30.8	47.8
1:45	32.6	30.5	45.3
2:00	35.1	29.8	50.3
2:15	31.2	29.3	42.7
2:30	31.2	29	41.4
2:45	30.5	28.1	57.3
3:00	33.2	29.9	51.7
3:15	35.8	32.7	50.1
3:30	34.9	29.4	48.9
3:45	32.6	29.4	47.2
4:00	36.4	30.1	53.4
4:15	32.2	29.7	38.6
4:30	32.1	29.3	43.8
4:45	40.6	30.7	56.6
5:00	39.3	31.1	55.9
5:15	41.5	33.6	58.3
5:30	38.8	34.7	52.4
5:45	40.5	32.1	58.4
6:00	44.7	33.7	63
6:15	38.3	34.8	49.9
6:30	40.1	35.9	60.4
6:45	40.8	37.6	54.2
7:00	45.5	37.7	65.2
7:15	51.1	38.2	80.3
7:30	41.1	38.2	56.3
7:45	43.6	39.6	59.1

TABLE 2128/T1