

## APPENDIX 10/1 – GLOSSARY OF TERMINOLOGY

In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided.

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale, is used. The decibel scale typically ranges from 0dB (the threshold of hearing) to over 120dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

**Table A10/1-1**  
**Example Noise Levels found in General Life**

Sound Level	Typical Source
0dB(A)	Threshold of hearing
20 to 30dB(A)	Quiet bedroom at night
30 to 40dB(A)	Living room during the day
40 to 50dB(A)	Typical office
50 to 60dB(A)	Inside a car
60 to 70dB(A)	Typical high street
70 to 90dB(A)	Inside a factory
100 to 110dB(A)	Burglar alarm at 1m away
110 to 130dB(A)	Jet aircraft at take off
140dB(A)	Threshold of pain

## Acoustic Terminology

**dB (decibel)** The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure ( $2 \times 10^{-5}$  Pa).

**dB(A)** A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.

**$L_{Aeq}$**   $L_{Aeq}$  is defined as the notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.

**$L_{10}$  &  $L_{90}$**  If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The  $L_n$  indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence  $L_{10}$  is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly,  $L_{90}$  is the 'average minimum level' and is often used to describe the background

noise. It is common practice to use the  $L_{10}$  index to describe traffic noise.

$L_{Amax}$   $L_{Amax}$  is the maximum A-weighted sound pressure level recorded over the period stated.  $L_{Amax}$  is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall  $L_{eq}$  noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.

## APPENDIX 10/2 – FULL SURVEY RESULTS

**Table A10/2-1**  
**Measured Noise Levels Popefield Farm (Representative Location), free-field, dB**

Date	Time	L <sub>Aeq,T</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>Amax</sub>
23/09/2015	12:00	57.2	51.8	58.8	72.1
	12:15	60.5	50.4	58.2	86.4
	14:15	57.6	50.1	58.1	78.0
	14:30	56.0	51.2	57.6	76.1

**Table A10/2-2**  
**Measured Noise Levels The Lodge/No.403 St. Albans Road, free-field, dB**

Date	Time	L <sub>Aeq,T</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>Amax</sub>
23/09/2015	11:15	69.5	54.0	73.5	81.8
	11:30	68.2	49.1	72.7	80.5
	13:30	69.7	54.5	73.7	82.3
	14:00	69.7	54.5	73.5	82.4

**Table A10/2-3**  
**Measured Noise Levels No.616 Hatfield Road, free-field, dB**

Date	Time	L <sub>Aeq,T</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>Amax</sub>
23/09/2015	12:45	65.7	52.9	69.3	77.5
	13:00	66.5	54.9	69.9	83.0
	15:00	66.9	55.0	70.6	80.8
	15:15	68.1	55.1	70.9	88.7

**Table A10/2-4**  
**Measured Noise Levels Pasture View, free-field, dB**

Date	Time	L <sub>Aeq,T</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>Amax</sub>
23/09/2015	10:30	50.3	46.2	51.2	70.2
	10:45	49.1	46.1	50.9	62.4
	11:00	49.7	46.2	51.9	59.6
	11:15	51.2	46.9	54.1	61.5
	11:30	57.1	46.6	52.0	80.2
	11:45	51.4	47.4	53.0	65.6
	12:00	51.8	47.1	53.2	70.7
	12:15	51.2	47.9	53.4	65.4
	12:30	51.0	47.7	53.1	62.6
	12:45	52.0	48.1	54.1	73.8
	13:00	50.4	47.3	52.0	63.0

Date	Time	L <sub>Aeq,T</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>Amax</sub>
23/09/2015	13:15	52.2	47.4	54.6	69.3
	13:30	51.3	46.0	54.4	65.0
	13:45	49.7	45.6	51.9	62.3
	14:00	50.1	46.8	51.5	66.1
	14:15	50.3	46.3	51.6	68.1
	14:30	49.7	46.3	51.4	60.3
	14:45	51.3	47.4	53.2	65.6
	15:00	49.4	46.5	51.2	63.2
	15:15	49.8	47.4	51.5	65.4

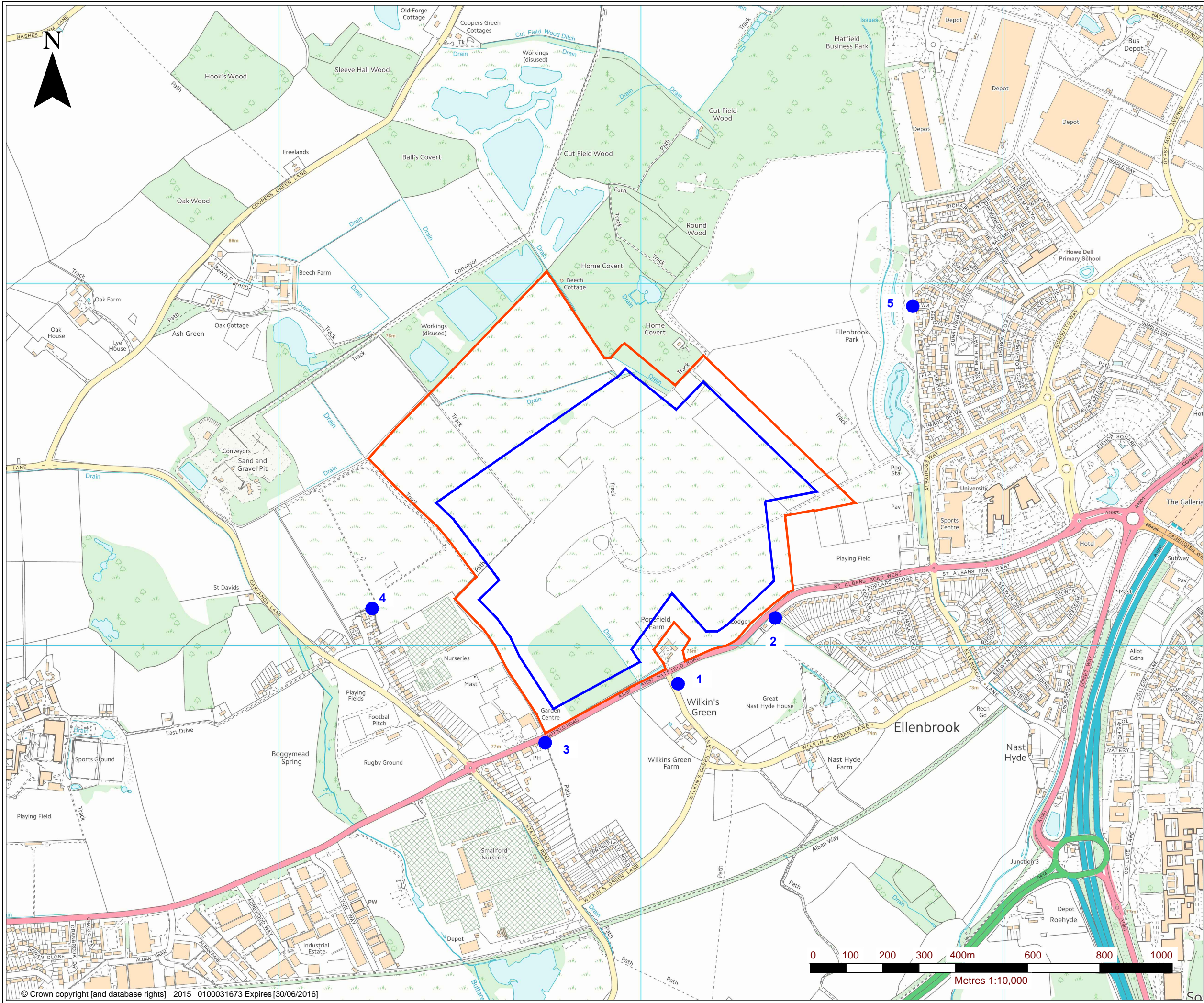
**Table A10/2-5**  
**Measured Noise Levels Walker Grove, free-field, dB**

Date	Time	L <sub>Aeq,T</sub>	L <sub>A90</sub>	L <sub>A10</sub>	L <sub>Amax</sub>
23/09/2015	10:45	46.8	39.3	49.0	68.8
	11:00	56.5	39.6	48.8	88.0
	11:15	48.4	40.7	51.0	68.2
	11:30	55.2	42.4	51.5	79.1
	11:45	68.2	41.3	71.5	86.8
	12:00	48.8	40.0	48.6	70.8
	12:15	43.5	40.2	45.9	60.2
	12:30	44.2	40.3	45.4	64.8
	12:45	47.9	40.2	51.6	62.0
	13:00	44.8	40.7	45.7	60.3
	13:15	48.3	40.7	50.9	65.8
	13:30	48.7	39.7	52.3	67.1
	13:45	47.7	39.7	51.1	64.8
	14:00	47.2	40.7	49.8	65.9
	14:15	48.1	40.6	50.2	68.2
	14:30	55.9	41.6	50.8	77.0
	14:45	52.1	43.9	54.7	66.7
	15:00	46.6	41.8	48.8	62.1
	15:15	47.0	41.5	48.9	73.2
	15:30	52.5	41.5	51.3	85.5

### APPENDIX 10/3 – NOISE MONITORING LOCATIONS




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**LEGEND**

- LEASE AREA
- EXTRACTION AREA
- NOISE MONITORING LOCATION



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**HATFIELD AERODROME**

**ENVIRONMENTAL STATEMENT**

**NOISE MONITORING LOCATIONS**

**HQ 10/1**

Scale  
1:10,000 @ A3

Date  
OCTOBER 2015