Appendix 10.3

Baseline Noise Monitoring Survey

This Technical Appendix document describes the specifics of the noise survey undertaken in the vicinity of the Houghton Main site, used to inform the main ES Chapter.

Survey Details

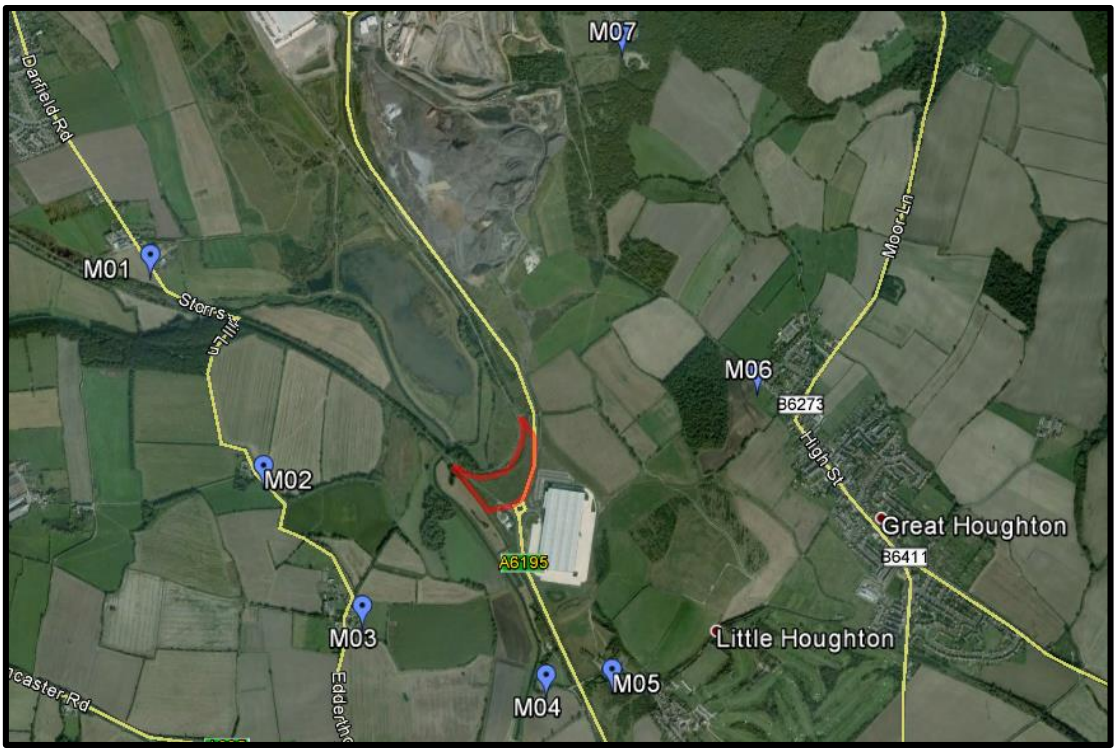
In order to determine the prevailing noise climate of the area, a noise monitoring survey was undertaken in the immediate vicinity of the site representative of the closest noise sensitive residential receptors to the development. The noise survey was undertaken between the 13th and 26th February 2014. The survey was undertaken at the following noise monitoring locations representative of the closest sensitive residential properties;

Table 10.3-1: Noise Monitoring Locations

Location Reference	Grid Ref (NGR)	Description
ML01 – Storrs Mill Ln/ Deepcar Ln	SE 40090 07232	On the side of Deepcar Lane adjacent to the garden space of the properties on the junction.
ML02 – Crooke House Court (Crooke House Ln)	SE 40635 06329	In the garden space to the south of the main buildings
ML03 – Edderthorpe Ln/Low Farm Cr	SE 41119 05688	Located adjacent to the main road to the south of the properties due to refused access at the properties
ML04 – Ings Ln	SE 42028 05672	On the access road to the east of the properties
ML05 – Middlecliff Ln	SE 42170 05779	Located to the north west of the properties on the bus turnaround area
ML06 – Park Ln/Crabtree Dr	SE 42636 07019	In the rear garden of the property at the western side of the junction of Park Lane and Crabtree Drive
ML07 – Chestnut Street	SE 41953 08304	In the rear garden of the property at the end of the Chestnut Street cul-de-sac

The above noise monitoring locations are presented graphically within Figure 10.3-1below.

Figure 10.3-1: Noise Monitoring Location Plan (north aligned to the top of the drawing)



(Image Source: Imagery ©2014 Bluesky, DigitalGlobe GeoEye Getmapping plc. Infoterra Ltd & Bluesky, The Geoinformation Group, Map data ©2014 Google)

The noise monitoring survey was undertaken as detailed in Table 10.3-2 below.

Table 10.3-2: Noise Monitoring Periods

Location		Dates	Times
ML01	Daytime Survey	13th Feb 2014 13th Feb 2014 14th Feb 2014	14:10 – 15:10 20:21 – 20:51 07:00 – 07:30
	Overnight Survey	14th Feb 2014	00:55 – 01:30
ML02 (Long Term Survey Location)	Survey 1	14th Feb to 15th Feb 2014	08:00 – 08:00
	Survey 2	20th Feb to 26th Feb 2014	12:15 – 11:30
ML03	Daytime Survey	13th Feb 2014 14th Feb 2014	15:45 – 16:45 08:25 – 08:40
	Overnight Survey	14th Feb 2014	01:40 – 02:10
ML04	Daytime Survey	13th Feb 2014 13th Feb 2014 14th Feb 2014	12:30 – 13:30 19:35 – 20:05 09:15 – 09:45
	Overnight Survey	-	-
ML05	Daytime Survey	13th Feb 2014 13th Feb 2014 14th Feb 2014	10:40 – 12:10 18:56 – 19:26 09:55 – 10:25
	Overnight Survey	14th Feb 2014	03:14 – 03:44
ML06 (Long Term Survey Location)	Survey 1	14th Feb to 18th Feb 2014	10:55 – 08:55
ML05	Daytime Survey	13th Feb 2014 13th Feb 2014	09:55 – 10:55 18:07 – 18:37
	Overnight Survey	14th Feb 2014	02:25 – 03:00

Weather

The survey was undertaken on the basis of a combination of attended and unattended monitoring. As such weather conditions were noted throughout the survey periods.

Thursday 13th February 2014:

The weather was noted to be dry and mild (7.5°C) with a wind speed noted to be approximately 5m/s with a gusting component up to approximately 8m/s evident at times. As the day progressed the cloud cover was noted to increase.

No precipitation was noted to fall during the survey and the road surfaces in the area were noted to be, and to remain, dry.

Friday 14th February 2014:

The weather on the 14th was noted to remain constant with that of the preceding day but slightly cooler at around 5°C. Again no precipitation was noted to fall during the survey and the road surfaces in the area were noted to be, and to remain, dry.

The long term surveys were undertaken on the basis of unattended surveys and as such specific weather information is not available. However, review of commercial weather information during the survey detailed the prevailing conditions to remain constant with the observed days being mild/cool with limited wind and mainly dry.

Monitoring Equipment

The monitoring of noise was undertaken in line with the guidance set out within BS7445: 1991. The sound level meters were programmed to monitor over 15 minute intervals during the daytime and 5 minutes intervals during the overnight. The equipment used was set to record the following statistical parameters:

L_{Aeq} in dB

L_{A10} in dB

L_{A90} in dB

L_{Amax} in dB

The following noise monitoring equipment was used in order to undertake the survey work in the vicinity of the site.

Table 10.3-3: Noise Monitoring Equipment

Equipment	Manufacturer	Type	Serial Number
Sound Level Meter	01dB	Black Solo	65396
			65445
			65446
Calibrator	Cirrus	CR:515	59522

The following set-up parameters were used on the sound level meters during all of the noise measurements undertaken:

Time Weighting: Fast

Frequency Weighting: "A"

The sound level meters used within this assessment were locally calibrated using an electronic calibrator prior to commencement and again upon completion of the surveys, no significant drift in calibration was observed.

The instrumentation calibration documentation for the equipment used is available on request.

Noise Survey Results

This section of the report summarises the results of the noise monitoring surveys undertaken within the scope of this assessment.

Presented within Table 10.3-4 below is a summary of the daytime and overnight noise levels monitored during the survey period.

- The daytime data is presented as averaged 15 minute levels over the measurement period;
- The overnight data is presented as the averaged 5 minute levels over the measurement period.

Table 10.3-4: Measured Noise Level Data – Daytime Period

Location	Measurement Period	Sample Duration (hh:mm:ss)	Statistical Parameter			
			L_{Aeq}	L_{max}	L_{90}	L_{10}
M01	14:10 – 15:10 13/02/2014	00:15:00	50.1	67.6	39.7	52.8
	20:21 – 20:51 (14/02/14)	00:15:00	45.8	69.0	38.7	48.2
	07:00 – 07:30 (14/02/14)	00:15:00	48.3	64.5	41.1	50.6
M02	08:00 – 23:00 (14/02/14)	00:15:00	53.3	77.2	47.7	53.9
	12:15 – 23:00 20/02/2014	00:15:00	51.4	78.2	42.5	49.2
	07:00 – 23:00 21/02/2014	00:15:00	52.7	81.2	45.6	51.9
	07:00 – 23:00 22/02/2014	00:15:00	50.5	81.5	43.1	49.8
	07:00 – 23:00 23/02/2014	00:15:00	52.2	89.1	44.8	51.7
	07:00 – 23:00 24/02/2014	00:15:00	49.5	74.0	43.5	49.5
	07:00 – 23:00 25/02/2014	00:15:00	50.9	79.2	43.1	49.3
	07:00 – 23:00 26/02/2014	00:15:00	57.1	91.1	44.8	53.1

Table 10.3-4: Measured Noise Level Data – Daytime Period (Cont)

Location	Measurement Period	Sample Duration (hh:mm:ss)	Statistical Parameter			
			L_{Aeq}	L_{max}	L_{90}	L_{10}
M03	15:45 – 16:45 13/02/2014	00:15:00	63.2	79.7	48.1	65.8
	08:25 – 08:40 14/02/2014	00:15:00	64.9.	82.0	46.5	66.9
M04	12:30 – 13:30 13/02/2014	00:15:00	52.5	65.9	47.9	54.9
	19:35 – 20:05 13/02/2014	00:15:00	50.6	58.1	46.2	53.1
	09:15 – 09:45 14/02/2014	00:15:00	54.1	69.3	49.9	55.9
M05	10:40 – 12:10 13/02/2014	00:15:00	60.0	88.7	52.1	61.9
	18:56 – 19:26 13/02/2014	00:15:00	58.7	71.2	52.0	61.8
	09:55 – 10:25 14/02/2014	00:15:00	56.0	81.1	49.3	55.0
M06	11:00 – 23:00 14/02/2014	00:15:00	52.3	76.4	46.1	53.6
	07:00 – 23:00 15/02/2014	00:15:00	46.5	70.7	42.4	47.6
	07:00 – 23:00 16/02/2014	00:15:00	42.5	70.4	35.5	44.0
	07:00 – 23:00 17/02/2014	00:15:00	47.8	79.5	41.0	48.5
	07:00 – 08:30 18/02/2014	00:15:00	47.8	71.9	42.7	48.4

Table 10.3-4: Measured Noise Level Data – Daytime Period (Cont)

Location	Measurement Period	Sample Duration (hh:mm:ss)	Statistical Parameter			
			L_{Aeq}	L_{max}	L_{90}	L_{10}
M07	09:55 – 10:55 13/02/2014	00:15:00	48.4	70.3	39.6	48.1
	18:07 – 18:37 14/02/2014	00:15:00	50.4	75.8	43.2	49.2

Table10.3 - 5: Measured Noise Level Data – Overnight Period

Location	Measurement Period	Sample Duration (hh:mm:ss)	Statistical Parameter			
			L_{Aeq}	L_{max}	L_{90}	L_{10}
M01	00:55 – 01:30 14/02/2014	00:05:00	32.6	53.6	28.0	33.5
M02	23:00 – 07:00 14/02/2014	00:05:00	53.7	71.6	48.0	54.5
	23:00 – 07:00 20/02/2014	00:05:00	46.8	72.8	38.7	43.3
	23:00 – 07:00 21/02/2014	00:05:00	45.5	69.6	40.1	46.1
	23:00 – 07:00 22/02/2014	00:05:00	44.3	61.1	40.1	45.8
	23:00 – 07:00 23/02/2014	00:05:00	49.2	71.3	44.2	51.0
	23:00 – 07:00 24/02/2014	00:05:00	46.1	65.9	41.1	47.4
	23:00 – 07:00 25/02/2014	00:05:00	42.8	63.6	37.9	42.1
M03	01:40 – 02:10 14/02/2014	00:05:00	46.0	74.8	30.5	40.9
M05	03:14 – 03:44 14/02/2014	00:05:00	44.9	60.2	36.0	48.1

Table10.3 - 5: Measured Noise Level Data – Overnight Period (Cont)

Location	Measurement Period	Sample Duration (hh:mm:ss)	Statistical Parameter			
			L_{Aeq}	L_{max}	L_{90}	L_{10}
M06	23:00 – 07:00 14/02/2014	00:05:00	51.6	73.4	45.5	52.9
	23:00 – 07:00 15/02/2014	00:05:00	40.8	66.0	36.0	40.9
	23:00 – 07:00 16/02/2014	00:05:00	40.7	69.6	31.8	39.7
	23:00 – 07:00 17/02/2014	00:05:00	41.8	68.4	31.8	39.7
M07	02:25 – 03:00 14/02/2014	00:05:00	30.6	41.4	28.9	31.9

The notes made during the site works detailed that road traffic noise dominated the climate of the area primarily from the surrounding A roads, with some vehicle movements on more local roads. This was coupled with noises typical of residential settings including dogs, aircraft overhead, emergency vehicles and human activity noises.

The night-time period was noted to again be dominated by road traffic movements although to a much lower degree than during the daytime period.