

PROPOSED ELECTRICITY STORAGE FACILITY

Barnsley, Twibell Street Battery – Noise Assessment

Prepared for: UK Energy Reserve Ltd

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1.0 Introduction

UK Energy Reserve Limited (UKER) has appointed SLR Consulting Ltd. (SLR) to undertake a noise assessment of an electricity storage facility located at Twibell Street, Barnsley, S71, 1JE. The development will comprise the development of a series of batteries and associated apparatus located inside a newly constructed building.

The noise assessment of the proposals has been carried out in accordance with the guidance contained in British Standard 4142:2014 *Methods for rating industrial and commercial sound*.

The assessment is based on the results of a baseline sound survey undertaken at locations representative of the noise environment at the nearest sensitive receptors to the proposed development over weekend daytime and night-time periods.

The noise predictions in this assessment have been undertaken using a proprietary software-based noise model, CadnaA, which implements the full range of UK calculation methods.

Whilst reasonable effort has been made to ensure that this report is easy to understand, it is technical in nature; to assist the reader, a glossary of terminology is included in Appendix 01.

2.0 Site Description

The proposed battery storage facility development will be located on a parcel of land located to the east of the Retail Park.

A plan showing the location of the proposed development site can be seen in Appendix 02.

In summary the proposed development will consist of:

- A number of battery inverter units being housed within a newly constructed building;
- Eight cooling units to be situated external to the northern façade of the newly constructed building;
- Eight step-up transformers to be situated externally on the northern facades of the building; and
- A main transformer compound to be located within the north -western area of the site.

The proposed development would typically operate during two windows per day, in the morning and the evening, with peak demand being typically between 17:00 and 19:00 hours on a weekday.

It is very unlikely indeed that the facility will be called upon to balance the electricity supply:

- During the night;
- At the weekend; and
- During late spring; summer, and early autumn.

3.0 Scope

3.1 Consultation with Barnsley Metropolitan Borough Council

Barnsley Metropolitan Borough Council was consulted to confirm their views and policies on noise-related issues. It was confirmed in an email with an Environmental Health Officer (EHO) of the Council that:

- Noise from the development should be included in a noise assessment that should be carried out in accordance with the guidance contained in British Standard 4142:2014 *Methods for rating industrial and commercial sound*; and
- Baseline sound levels should be monitored at locations representative of the nearest sensitive receptors properties over a representative period to include a weekend.

A summary of the guidance mentioned above is given below.

3.2 British Standard 4142:2014

British Standard 4142:2014 *Methods for rating and assessing industrial and commercial sound* is intended to be used to assess the potential adverse impact of sound, of an industrial and/or commercial nature, at nearby sensitive receptor locations within the context of the existing sound environment.

Where the specific sound contains tonality, impulsivity and/or other sound characteristics penalties should be applied depending on the perceptibility. For tonality a correction of either 0, 2, 4 or 6dB should be added; for impulsivity a correction of either 0, 3, 6 or 9dB should be added and if the sound contains specific sound features which are neither tonal nor impulsive a penalty of 3dB should be added.

In addition, if the sound contains identifiable operational and non-operational periods, that are readily distinguishable against the existing sound environment, a further penalty of 3dB may be applied.

The assessment of impacts contained in BS4142:2014 is undertaken by comparing the sound rating level, i.e. the specific sound level of the source plus any penalties, to the measured representative background sound level immediately outside the sensitive receptor location. Consideration is then given to the context of the existing sound environment at the sensitive receptor location to assess the potential impact.

Once an initial estimate of the impact is determined, by subtracting the measured background sound level from the rating sound level, BS4142:2014 states that the following should be considered:

- typically, the greater the difference, the greater the magnitude of the impact;
- a difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- a difference of around +5dB is likely to be an indication of an adverse impact, depending on the context; and
- the lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. It is an indication that the specific sound source has a low impact

BS4142:2014 notes that:

“Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact.”

BS4142:2014 outlines guidance for the consideration of the context of the potential impact including consideration of the existing residual sound levels, location and/or absolute sound levels.

4.0 Environmental Sound Survey

4.1 Survey Date

An environmental sound survey was undertaken by SLR on Sunday 21st May 2017.

4.2 Weather Conditions

During the survey the weather conditions were as follows:

Sunday daytime: The weather was dry and sunny with wind speeds of less than 5m/s⁻¹.

Sunday night-time: The weather was dry and clear with wind speeds of less than 5m/s⁻¹.

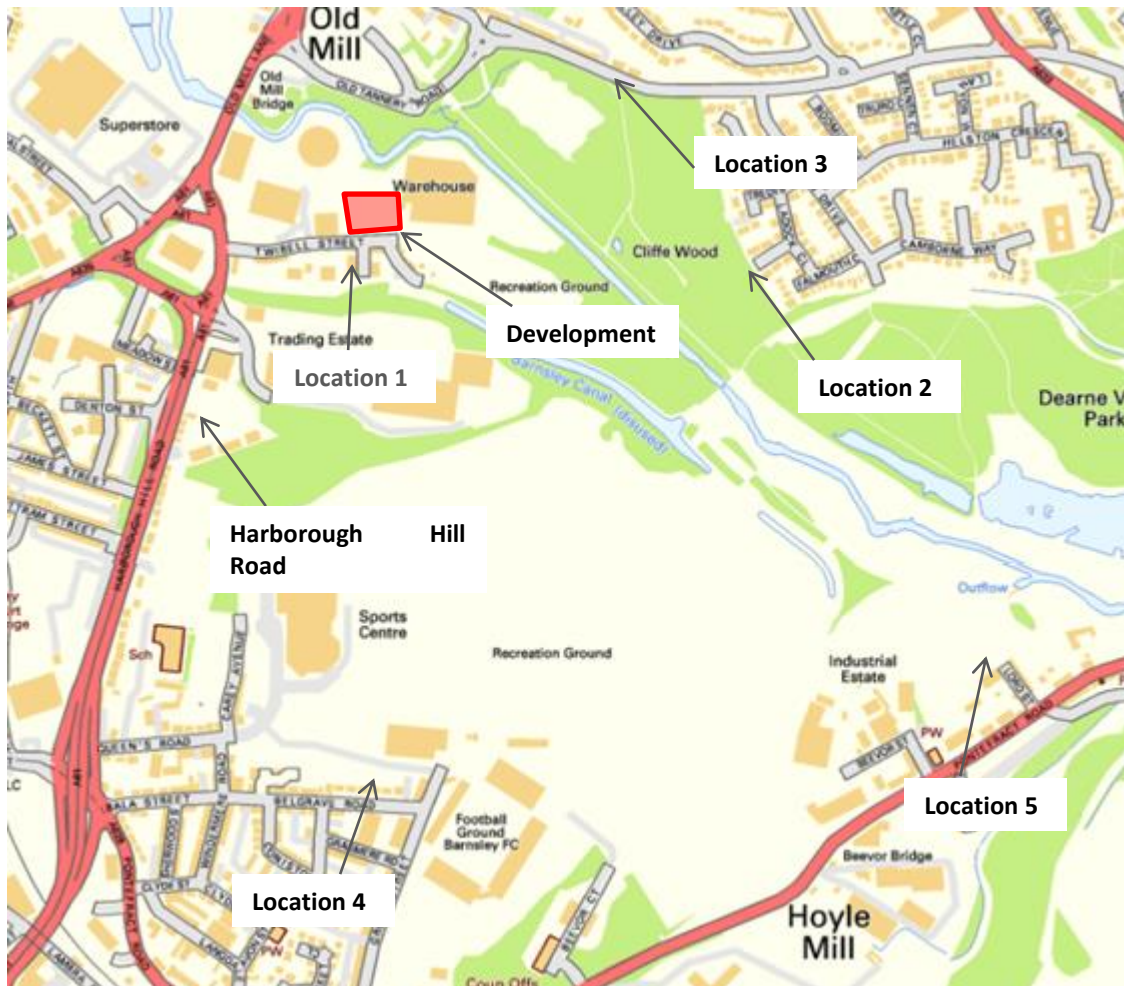
4.3 Equipment

The sound monitoring equipment used during the assessment is detailed in Appendix 03. All measurement instrumentation was calibrated before and after the measurements. The calibration chain is traceable via the United Kingdom Accreditation Service to National Standards held at the National Physical Laboratory. No significant drift was observed.

4.4 Monitoring Locations

The survey locations and the proposed location of the development can be seen in Figure 4-1. The survey locations were selected as they were considered representative of the nearest sensitive receptor locations.

Figure 4-1
Sound Monitoring Locations



The baseline sound levels at the monitoring locations may be considered representative of the following receptors:

- Location 1: Twibell Street and Eaming View.
- Location 2: Roche Close and receptors to east.
- Location 3: Burton Road and receptors to north.
- Location 4: Belgrave Road and receptors to south (including those to the rear of Harborough Hill Road).
- Location 5: Lord Street and receptors to south-east.

At the monitoring locations the microphone was placed 1.5m above the ground in free-field conditions, i.e. at least 3.5m from the nearest vertical, reflecting surface, with the following noise level indices being recorded:

$L_{Aeq,T}$	The A-weighted equivalent continuous noise level over the measurement period.
L_{A90}	The A-weighted noise level exceeded for 90% of the measurement period. This parameter is often used to describe background noise.
L_{A10}	The A-weighted noise level exceeded for 10% of the measurement period. This parameter is often used to describe road traffic noise.

L_{Amax} The maximum A-weighted noise level during the measurement period

The measured baseline sound levels and the representative L_{A90} are shown in Table 4-1. The full survey results can be seen in Appendix 04 of this Report.

It must be noted that the L_{90} has been derived by calculating the median value from each relevant data set.

Table 4-1
Summary of Measured Sound Levels, free-field, dB

Location	Date	Period	$L_{Aeq,T}$	Derived L_{A90}	L_{Amax}
1: Twibell Street and Eaming View	21 st May 2017	Sunday Daytime	48.1	43.6	75.6
	21 st into 22 nd May 2017	Sunday Night-Time	48.4	39.2	71.6
2: Roche Close and receptors to east	21 st May 2017	Sunday Daytime	47.9	40.4	71.2
	21 st into 22 nd May 2017	Sunday Night-Time	32.1	29.3	60.2
3: Burton Road and receptors to north	21 st May 2017	Sunday Daytime	69.3	56.8	100.2
	21 st into 22 nd May 2017	Sunday Night-Time	57.9	36.1	81.6
4: Belgrave Road and receptors to south	21 st May 2017	Sunday Daytime	51.2	44.2	74.1
	21 st into 22 nd May 2017	Sunday Night-Time	38.4	37.4	50.4
5: Lord Street and receptors to south-east	21 st May 2017	Sunday Daytime	50.0	50.7	78.5
	21 st into 22 nd May 2017	Sunday Night-Time	36.6	39.4	53.7

4.5 Soundscape at the Monitoring Location and Context

4.5.1 Twibell Street and Eaming View

Terraced houses located to the north-west of the proposed development.

The sound climate was characterised by local and distant road traffic. A hum from a Northern Powergrid transformer located on Twibell Street was also audible.

4.5.2 Roche Close and receptors to the east

Semi-detached properties located to the east of the proposed development.

The sound climate was characterised by local and distant road traffic.

4.5.3 Burton Road and receptors to the north

Terraced houses located to the north of the proposed development.

The sound climate was characterised by local and distant road traffic. A hum from a distant transformer was also audible as was occasional overhead aircraft.

4.5.4 Belgrave Road and receptors to the south

Detached and semi-detached properties located to the south of the proposed development.

The sound climate was characterised by local and distant road traffic. Noise from plant located at a nearby Leisure Centre was also audible.

4.5.5 Lord Street and receptors to the south-east

Terraced houses located to the south-east of the proposed development.

The sound climate was characterised by local and distant road traffic. Distant flowing water and sound from a light breeze in the trees was also audible.

5.0 Noise Model and Predicted Sound Levels

5.1 Noise Model Assumptions

The sound predictions in this assessment have been undertaken using a proprietary software-based noise model, CadnaA, which implements the full range of UK calculation methods. The calculation algorithms set out in ISO 9613-2:1996 *Acoustics – Attenuation of sound during propagation outdoors – Part 2 General method of calculation* have been used and the model assumes:

- A ground absorption factor 0.5.
- A reflection factor of 2.
- A daytime receiver height of 1.5m and a night-time receiver height of 4.0m.

5.2 Noise Sources

5.2.1 Internal Batteries

As previously stated the battery inverter units will be housed in a newly constructed building; the main area measuring approximately 42.7m long and 7m high to the eaves.

For the purpose of this assessment it has been assumed that the main building will be constructed from single skin sheet steel which has an overall sound reduction index when accounting for closed doors and louvres of 24dB(A).

It is anticipated that any noise from the operation of the batteries within this building would not be audible outside of the building.

5.2.2 Cooling Unit

Eight cooling units will be located along the northern elevation of the building housing the batteries. This report assumes that a Daikin RXYSQ12TY1 or unit with similar noise output will be used. The unit has a sound power level of 76dB(A).

5.2.3 External Transformers

UKER have provided SLR with details, including the operational noise levels, for both the set-up (auxiliary) transformers and the main transformer as described below.

Auxiliary Transformers

*'Each auxiliary transformer has a sound pressure level of 50 dB(A) measured at 1m therefore based upon the dimensions of the transformer (long facades 2m x 2m) 61dBA SWL, Short façade (1.465m x 2m) 60dBA SWL. Roof (2m x 1.465m) 61 SWL)) the total sound power level has been calculated to be **68dBA** SWL per unit.'*

This single figure sound power level (68dB(A)) will therefore be used for input into the noise model for each of the 20 set-up (auxiliary) transformers.

Main Transformer

*'The main transformer has a sound pressure level of 63 dB(A) measured at 1m therefore based upon the dimensions of the transformer (long facades 4.42m x 3.8m) 78dBA SWL, Short façade (4.4m x 3.8m) 78dBA SWL. Roof (4.42m x 4.4m) 79dBA SWL)) the total sound power level has been calculated to be **85dBA** SWL per unit.'*

This single figure sound power level (85dB(A)) will therefore be used for input into the noise model for the main transformer.

Step-Up Transformers

No specific data has been provided for the step up transformers. Therefore SLR has used the sound information provided for the auxiliary transformers.

5.3 Predicted Sound Levels

The predicted sound levels are shown in Table 5-1 below. In addition to Locations 1 to 5, Harborough Hill Road has been included in the assessment at the request of the local authority.

Daytime and peak period sound levels have been predicted to 1.5m above ground level; the approximate height of ground floor window. Night-time sound levels have been predicted to 4m above ground level; the approximate height of a first floor bedroom window.

It must be noted that all the predicted sound levels shown have been rounded to the nearest decibel.

Table 5-1
Predicted Sound Levels, free-field dB

Location	Period	Predicted Sound Level, $L_{Aeq,T}$
1: Twibell Street	Daytime	15.3
	Night-time	17.8
2: Roche Close and receptors to east	Daytime	27.0
	Night-time	29.1
3: Burton Road and receptors to north	Daytime	25.2
	Night-time	26.1
4: Belgrave Road and receptors to south	Daytime	13.6
	Night-time	17.1
5: Lord Street and receptors to south-east	Daytime	18.7
	Night-time	18.5
6: Harborough Hill Road	Daytime	11.1
	Night-Time	12.3

6.0 BS4142:2014 ASSESSMENT

6.1 Sound Penalties

The character of each noise source, and the sound penalty that will be applied in the BS4142:2014 assessment are detailed in Table 6-1.

Table 6-1
Character of Each Noise Source

Source	Sound Tonal	Sound Impulsive	Sound Has Other Characteristic	Sound Intermittent	Comment
Main Building	No	No	No	Yes	The battery inverter units will be housed within the main building; consequently there will be minimal noise breakout; however due to the nature of such storage sites any noise generated will be intermittent in nature (3dB penalty).
Cooling Units	Yes	No	No	Yes	Tones may be perceptible. At receptors within 100m (Twibell Street) tones may be clearly perceptible (4dB penalty), whilst at receptors further afield, tones may be just perceptible (2dB penalty). The operation of the Battery would be intermittent (3dB penalty).
Step up and Auxiliary Transformers	Yes	No	No	Yes	
Main Transformer	Yes	No	No	Yes	

Based on the data presented in Table 6-1 the following penalties will be applied to the specific sound level at each receptor:

- Twibell Street: 7dB.
- Roche Close: 5dB.
- Burton Road: 5dB.
- Belgrave Road: 5dB.
- Lord Street: 5dB.
- Harborough Hill Road: 5dB.

6.2 Assessment Results

The penalties described in Table 6-1 above have been added to the predicted sound levels shown in Table 5-1 to derive the rating levels at each of the nearest noise-sensitive receptors.

The rating levels have then been compared to the derived background sound levels and assessed accordingly.

The results of the BS4142:2014 assessment are shown in Table 6-2. It must be noted that the rating levels and the representative background sound levels have been rounded to the nearest decibel.

A noise model showing the specific noise levels during the daytime and the night-time at each receptor can be seen in Appendix 05.

Table 6-2
BS4142 Assessment, dB

Receptor	Assessment	Predicted Specific Sound Level, $L_{Aeq,T}$	Predicted Rating Level, $L_{Ar,T}$	Derived Background Sound Level L_{A90}	Difference
1: Twibell Street	Daytime	27	34	44	-10
	Night-Time	29	36	39	-3
2: Roche Close and receptors to east	Daytime	18	23	40	-17
	Night-Time	19	24	29	-5
3: Burton Road and receptors to north	Daytime	32	37	57	-20
	Night-Time	34	39	36	+3
4: Belgrave Road and receptors to south	Daytime	0	5	44	-39
	Night-Time	0	5	37	-32
5: Lord Street and receptors to south-east	Daytime	2	7	51	-44
	Night-Time	2	7	39	-32
6: Harborough Hill Road	Daytime	15	20	44	-24
	Night-Time	18	23	38	-15

6.2.1 Daytime

The assessment results indicate that during the daytime period the rating levels at the receptors locations assessed are:

- 11dB(A) below the background sound level at Twibell Street.
- 17dB(A) below the background sound level at Roche Close.
- 20dB(A) below the background sound level at Burton Road.
- 39dB(A) below the background sound level at Belgrave Road.
- 44dB(A) below the background sound level at Lord Street.
- 24dB(A) below the background sound level at Harborough Hill Road.

With reference to BS4142:2014, the low rating level relative to the representative background sound level at all six receptors, indicate that the specific sound source will have a low noise impact at these receptors.

6.2.2 Night-Time

The assessment results indicate that during the night-time, a period during which it is very unlikely that the proposed development would operate, the rating levels at the receptor locations assessed are:

- 4dB(A) below the background sound level at Twibell Street.
- 5dB(A) below the background sound level at Roche Close.
- 3dB(A) above the background sound level at Burton Road.
- 32dB(A) below the background sound level at Belgrave Road.
- 32dB(A) below the background sound level at Lord Street.
- 15dB(A) below the background sound level at Harborough Hill Road.

With reference to BS4142:2014, the low rating level relative to the representative background sound level at five receptors, indicate that the specific sound source will have a low noise impact at these receptors.

At Burton Road the rating level is 3dB(A) above the background sound level and any adverse noise impact would be marginal.

The properties at Burton Road are already subject to intermittent noise sources during the night-time from local road traffic noise and, as stated previously in this Report, it is very unlikely indeed that the Battery facility would operate at night; consequently it is considered that the specific sound source will have a low noise impact at the properties situated on Burton Road.

7.0 Cumulative Assessment

In addition to the development detailed in this Report, UK Capacity Reserve (an associated company of UKER) has appointed SLR to undertake a noise assessment for a STOR development, which is adjacent to the development assessed in this Report.

The BS4142:2014 assessment for the STOR is presented in SLR Report 404.03901.00006.004.

As it is anticipated that both sites may be in operation at the same time SLR has completed a cumulative BS4142:2014 assessment. This cumulative BS4142:2014 assessment is presented below.

7.1 Cumulative BS4142:2014 Assessment

The results of the cumulative BS4142:2014 assessment are shown in Table 7-1. It must be noted that the rating levels and the representative background sound levels have been rounded to the nearest decibel.

Table 7-1
Cumulative BS4142:2014 Assessment

Receptor	Assessment	Predicted Specific Sound Level, $L_{Aeq,T}$	Predicted Rating Level, $L_{Ar,T}$	Derived Background Sound Level L_{A90}	Difference
1: Twibell Street	Daytime	50	57	44	+13
	Night-Time	54	61	39	+22
2: Roche Close and receptors to east	Daytime	41	46	40	+6
	Night-Time	42	47	29	+18
3: Burton Road and receptors to north	Daytime	53	58	57	+1
	Night-Time	53	58	36	+22
4: Belgrave Road and receptors to south	Daytime	25	30	44	-14
	Night-Time	26	31	37	-6
5: Lord Street and receptors to south-east	Daytime	32	37	51	-14
	Night-Time	32	37	39	-2
6: Harborough Hill Road	Daytime	39	44	44	0
	Night-Time	41	46	38	+8

7.1.1 Cumulative Daytime

The assessment results indicate that during the daytime period the rating levels at the receptors locations assessed are:

- 13dB(A) above the background sound level at Twibell Street.
- 6dB(A) above the background sound level at Roche Close.
- 1dB(A) above the background sound level at Burton Road.
- 14dB(A) below the background sound level at Belgrave Road.
- 14dB(A) below the background sound level at Lord Street.
- Equal to the background sound level at Harborough Hill Road.

With reference to BS4142:2014, the low rating level relative to the representative background sound level at Burton Road, Belgrave Road, Lord Street, and Harborough Hill Road, indicate that the specific sound source will have a low noise impact at these receptors.

At Twibell Street, and Roche Close the operation of the STOR, and not the battery site, results in a high rating level relative to the background sound level. This indicates that the operation of the STOR would lead to an adverse noise impact at these receptors. To reduce the noise impact of the STOR a boundary noise limit is presented in Section 8 of SLR Report 404.03901.00006.004.

7.1.2 Cumulative Night-Time

The assessment results indicate that during the night-time, a period during which it is very unlikely that the STOR would operate, the rating levels at the receptor locations assessed are:

- 22dB(A) above the background sound level at Twibell Street.
- 18dB(A) above the background sound level at Roche Close.
- 22dB(A) above the background sound level at Burton Road.
- 6dB(A) below the background sound level at Belgrave Road.
- 2dB(A) below the background sound level at Lord Street.
- 8dB(A) above the background sound level at Harborough Hill Road.

With reference to BS4142:2014, the low rating level relative to the representative background sound level at Belgrave Road and Lord Street indicate that the specific sound source will have a low noise impact at these receptors.

At Twibell Street, Roche Close, Burton Road, and Harborough Hill Road, the operation of the STOR, and not the battery site, results in a high rating level relative to the background sound level. This indicates that the operation of the STOR would lead to an adverse noise impact at these receptors. To reduce the noise impact of the STOR a boundary noise limit is presented in Section 8 of SLR Report 404.03901.00006.004.

8.0 Conclusion

UK Energy Reserve Limited has appointed SLR Consulting Ltd. to undertake a noise assessment for an electricity storage development located at Twibell Street, Barnsley.

The noise assessment of the proposals was carried out in accordance with the guidance contained in British Standard 4142:2014 *Methods for rating industrial and commercial sound*.

The assessment was based on the results of a baseline sound survey undertaken at locations representative of the noise environment at the nearest sensitive receptors to the proposed development over weekend daytime and night-time periods.

The results of the assessment have shown that the specific noise being generated by the proposed development would have a low noise impact at all of the nearest noise-sensitive receptors considered during the daytime and at night. No significant noise effects are predicted.

8.1 Cumulative Assessment

The results of the assessment have shown that the specific noise being generated by the proposed battery development and STOR development would result in a high rating level relative to the background sound level at Twibell Street, Roche Close, Burton Road, and Harborough Hill Road. However, this impact is caused by the operation of the STOR site and not the battery site. To reduce the noise impact of the STOR a boundary noise limit is presented in Section 8 of SLR Report 404.03901.00006.004.

APPENDIX 01

Glossary of Terminology

Appendix 01 – 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 01-1
Sound Levels Commonly Found in the Environment

Sound Level	Location
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 factory
100 to 110dB(A)	Burglar alarm at 1m away
110 to 130dB(A)	Jet aircraft on take off
140dB(A)	Threshold of Pain

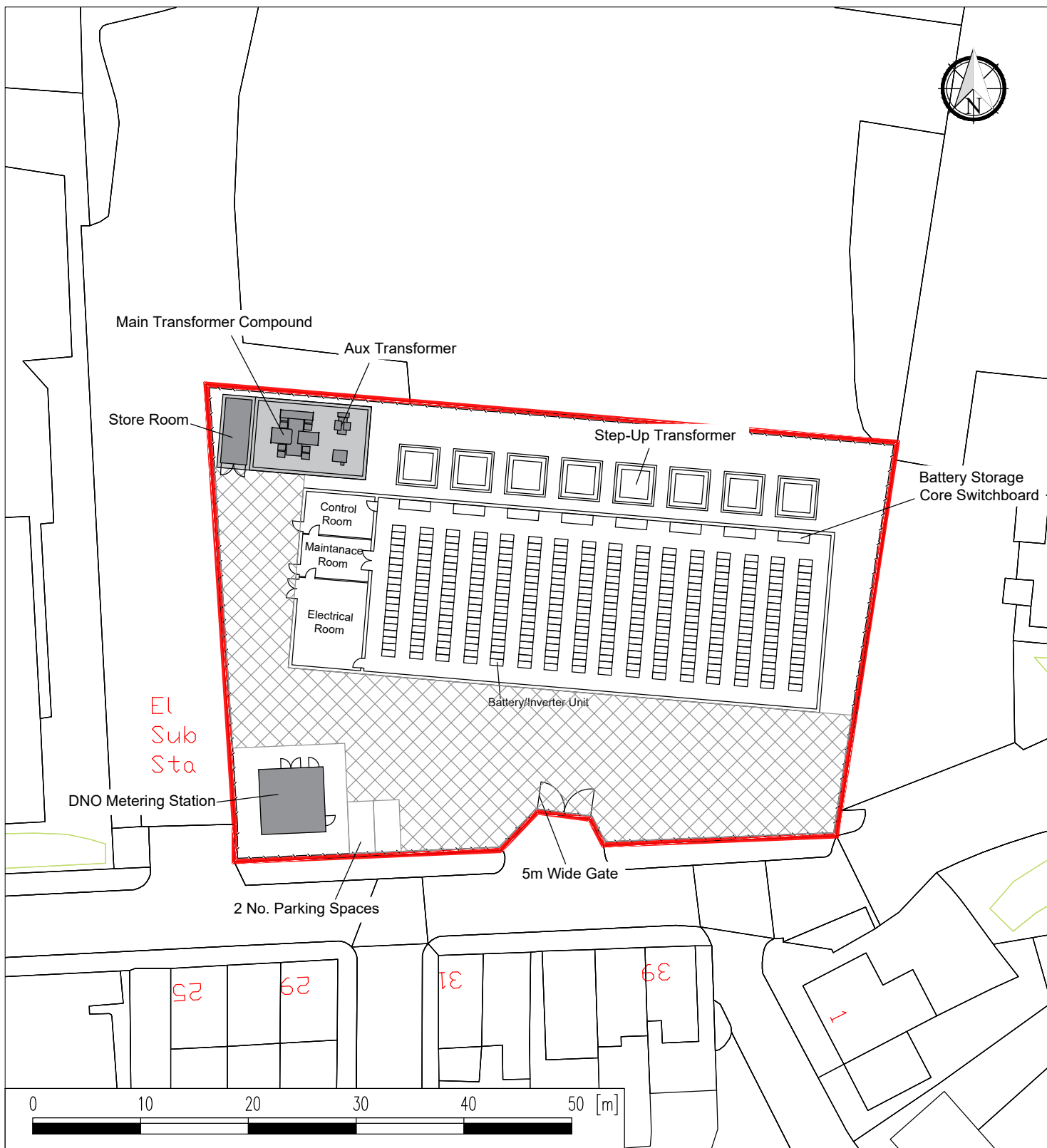
Acoustic Terminology

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 (2×10^{-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_{Aeq} noise level but will still affect the noise

environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.

APPENDIX 02

Proposed Development Site Drawing



APPENDIX 03

Survey Equipment

Appendix 03 – Survey Equipment

Table 03-1
Survey Equipment

Location	Equipment	Serial Number
1	Cirrus CR:171B type 1 sound level meter	G068726
	Cirrus CR:515 acoustic calibrator	72210
2, 3, 4, and 5	Norsonic 140 type 1 sound level meter	1403012
	Norsonic 1251 acoustic calibrator	31821

APPENDIX 04

Full Survey Results

Appendix 04 – Full Survey Results

Table 04-1
Twibell Street - Measured Sound Levels at the Measurement Position, free-field, dB

Time	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFMax}
21/05/2017 10:15	00:05:00	47.7	43.9	50.5	56.6
21/05/2017 10:20	00:05:00	52.2	43.9	50.9	75.6
21/05/2017 10:25	00:05:00	48.0	44.8	50.1	58.2
21/05/2017 10:30	00:05:00	47.2	43.8	49.5	57.2
21/05/2017 10:35	00:05:00	47.7	44.4	49.9	58.8
21/05/2017 10:40	00:05:00	48.5	45.2	50.8	61.1
21/05/2017 10:45	00:05:00	48.1	44.0	50.3	63.5
21/05/2017 10:50	00:05:00	47.9	44.3	50.3	62.3
21/05/2017 10:55	00:05:00	47.0	43.4	49.3	59.8
21/05/2017 11:00	00:05:00	47.5	43.3	49.3	62.0
21/05/2017 11:05	00:05:00	46.8	44.4	48.6	59.5
21/05/2017 11:10	00:05:00	46.6	43.8	48.6	58.0
21/05/2017 11:15	00:05:00	48.2	43.9	50.9	57.4
21/05/2017 11:20	00:05:00	49.1	45.0	51.9	59.1
21/05/2017 11:25	00:05:00	50.4	45.4	53.3	63.9
21/05/2017 11:30	00:05:00	47.8	44.5	49.9	60.7
21/05/2017 11:35	00:05:00	48.2	45.0	50.3	58.8
21/05/2017 11:40	00:05:00	47.7	44.2	49.5	59.6
21/05/2017 11:45	00:05:00	46.8	44.0	48.8	58.9
21/05/2017 11:50	00:05:00	46.8	44.3	48.8	57.4
21/05/2017 11:55	00:05:00	46.5	43.1	49.2	57.8
21/05/2017 12:00	00:05:00	47.3	43.3	50.2	58.9
21/05/2017 12:05	00:05:00	49.5	44.5	52.8	61.5
21/05/2017 12:10	00:05:00	50.0	44.1	53.5	62.9
21/05/2017 12:15	00:05:00	49.6	43.9	52.6	62.0
21/05/2017 12:20	00:05:00	50.5	44.3	53.7	65.9
21/05/2017 12:25	00:05:00	48.0	43.2	50.4	62.9
21/05/2017 12:30	00:05:00	48.6	43.7	51.1	64.0
21/05/2017 12:35	00:05:00	49.7	44.4	52.2	63.1
21/05/2017 12:40	00:05:00	46.2	43.8	48.5	53.1
21/05/2017 12:45	00:05:00	46.6	44.0	48.8	55.1

Time	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFMax}
21/05/2017 12:50	00:05:00	46.8	44.1	49.0	56.6
21/05/2017 12:55	00:05:00	48.7	44.2	51.7	58.3
21/05/2017 13:00	00:05:00	48.5	44.3	51.7	61.4
21/05/2017 13:05	00:05:00	51.2	45.5	54.1	67.3
21/05/2017 13:10	00:05:00	46.9	43.8	49.0	56.9
21/05/2017 13:15	00:05:00	46.5	43.7	48.8	56.1
21/05/2017 13:20	00:05:00	47.4	44.1	49.7	58.8
21/05/2017 13:25	00:05:00	46.7	43.7	48.5	58.4
21/05/2017 13:30	00:05:00	49.2	43.9	51.7	60.6
21/05/2017 13:35	00:05:00	49.5	44.2	52.7	61.0
21/05/2017 13:40	00:05:00	46.5	44.2	48.3	58.9
21/05/2017 13:45	00:05:00	45.9	43.5	47.5	60.3
21/05/2017 13:50	00:05:00	48.4	45.8	50.4	55.5
21/05/2017 13:55	00:05:00	49.1	45.4	51.2	61.0
21/05/2017 14:00	00:05:00	48.2	44.5	50.2	62.9
21/05/2017 14:05	00:05:00	49.4	43.3	51.5	65.7
21/05/2017 14:10	00:05:00	46.9	43.4	49.3	56.2
21/05/2017 14:15	00:05:00	47.4	43.6	49.4	62.0
21/05/2017 14:20	00:05:00	45.3	42.9	47.3	59.7
21/05/2017 14:25	00:05:00	48.9	43.3	51.5	63.0
21/05/2017 14:30	00:05:00	47.1	43.3	49.9	57.8
21/05/2017 14:35	00:05:00	49.6	43.9	52.6	64.8
21/05/2017 14:40	00:05:00	45.9	43.1	47.6	60.2
21/05/2017 14:45	00:05:00	45.7	42.8	48.0	60.3
21/05/2017 14:50	00:05:00	46.1	43.3	48.3	59.3
21/05/2017 14:55	00:05:00	45.8	42.9	48.1	58.9
21/05/2017 15:00	00:05:00	47.7	43.6	50.4	60.2
21/05/2017 15:05	00:05:00	46.5	43.3	48.8	55.0
21/05/2017 15:10	00:05:00	48.9	44.0	51.5	63.1
21/05/2017 15:15	00:05:00	47.0	43.7	49.6	58.7
21/05/2017 15:20	00:05:00	47.2	43.5	49.8	61.1
21/05/2017 15:25	00:05:00	47.7	43.3	50.6	59.8
21/05/2017 15:30	00:05:00	52.2	45.2	54.6	67.0
21/05/2017 15:35	00:05:00	50.4	44.4	53.8	62.9
21/05/2017 15:40	00:05:00	49.2	43.2	52.0	64.5

Time	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFMax}
21/05/2017 15:45	00:05:00	46.6	41.9	49.7	61.0
21/05/2017 15:50	00:05:00	45.1	42.3	47.5	55.0
21/05/2017 15:55	00:05:00	46.2	43.8	47.9	55.0
21/05/2017 16:00	00:05:00	46.1	41.9	48.4	58.4
21/05/2017 16:05	00:05:00	45.0	42.7	46.6	57.1
21/05/2017 16:10	00:05:00	49.8	42.9	54.7	61.4
21/05/2017 16:15	00:05:00	45.6	42.5	48.0	56.0
21/05/2017 16:20	00:05:00	44.1	41.5	46.3	53.8
21/05/2017 16:25	00:05:00	47.2	42.7	49.0	62.0
21/05/2017 16:30	00:05:00	46.3	42.9	48.8	57.9
21/05/2017 16:35	00:05:00	50.7	43.7	53.7	66.2
21/05/2017 16:40	00:05:00	47.1	43.1	50.0	60.0
21/05/2017 16:45	00:05:00	46.5	42.3	49.3	56.5
21/05/2017 16:50	00:05:00	46.2	42.4	49.3	54.6
21/05/2017 16:55	00:05:00	44.9	42.3	46.9	54.7
21/05/2017 17:00	00:05:00	46.3	42.1	49.3	59.1
21/05/2017 17:05	00:05:00	45.5	42.7	48.0	57.0
21/05/2017 17:10	00:05:00	47.0	42.7	50.2	57.9
21/05/2017 17:15	00:05:00	44.9	41.7	47.3	54.5
21/05/2017 17:20	00:05:00	43.8	41.5	45.5	55.4
21/05/2017 17:25	00:05:00	45.8	42.6	48.4	55.9
21/05/2017 17:30	00:05:00	46.3	43.4	48.6	55.3
21/05/2017 17:35	00:05:00	46.1	42.7	49.1	55.9
21/05/2017 17:40	00:05:00	46.1	42.6	48.6	62.6
21/05/2017 17:45	00:05:00	48.3	42.0	51.6	61.2
21/05/2017 17:50	00:05:00	46.1	43.6	48.2	59.1
21/05/2017 17:55	00:05:00	45.5	42.9	47.7	53.3
21/05/2017 18:00	00:05:00	45.7	43.0	47.9	54.0
21/05/2017 18:05	00:05:00	46.0	43.0	48.4	54.2
21/05/2017 18:10	00:05:00	45.9	43.1	48.3	55.6
21/05/2017 18:15	00:05:00	46.0	43.2	48.3	57.2
21/05/2017 18:20	00:05:00	45.9	42.6	47.9	59.1
21/05/2017 18:25	00:05:00	46.2	42.7	48.8	56.6
21/05/2017 18:30	00:05:00	46.3	42.6	48.5	56.3
21/05/2017 18:35	00:05:00	46.8	43.2	49.6	57.0

Time	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFMax}
21/05/2017 18:40	00:05:00	47.8	43.1	50.2	61.2
21/05/2017 18:45	00:05:00	46.2	42.8	48.2	60.6
21/05/2017 18:50	00:05:00	48.0	43.7	50.6	61.9
21/05/2017 18:55	00:05:00	49.3	43.4	52.4	64.3
21/05/2017 19:00	00:05:00	51.0	43.1	55.3	64.8
21/05/2017 19:05	00:05:00	48.0	43.0	49.1	66.8
21/05/2017 19:10	00:05:00	46.8	42.6	49.7	56.2
21/05/2017 19:15	00:05:00	46.3	42.6	48.9	56.4
21/05/2017 19:20	00:05:00	47.7	43.7	50.4	60.4
21/05/2017 19:25	00:05:00	47.0	42.3	50.4	56.9
21/05/2017 19:30	00:05:00	46.5	42.1	48.7	59.9
21/05/2017 19:35	00:05:00	46.2	42.4	48.9	54.3
21/05/2017 19:40	00:05:00	49.1	45.2	52.1	57.2
21/05/2017 19:45	00:05:00	47.0	44.0	49.3	54.9
21/05/2017 19:50	00:05:00	49.0	43.1	52.6	60.5
21/05/2017 19:55	00:05:00	48.0	43.6	50.6	61.4
21/05/2017 20:00	00:05:00	49.3	43.5	52.9	61.3
21/05/2017 20:05	00:05:00	48.2	44.6	50.8	57.7
21/05/2017 20:10	00:05:00	49.2	44.4	51.8	62.8
21/05/2017 20:15	00:05:00	51.1	44.6	54.3	64.3
21/05/2017 20:20	00:05:00	48.8	44.9	51.7	59.3
21/05/2017 20:25	00:05:00	47.5	43.0	50.4	58.7
21/05/2017 20:30	00:05:00	49.2	44.5	52.3	59.5
21/05/2017 20:35	00:05:00	49.5	44.1	53.0	64.0
21/05/2017 20:40	00:05:00	48.0	43.8	51.2	58.3
21/05/2017 20:45	00:05:00	48.0	43.8	50.7	62.9
21/05/2017 20:50	00:05:00	48.7	45.2	51.1	59.2
21/05/2017 20:55	00:05:00	47.9	43.3	50.6	59.1
21/05/2017 21:00	00:05:00	49.1	44.6	51.8	62.3
21/05/2017 21:05	00:05:00	50.4	46.1	53.0	62.3
21/05/2017 21:10	00:05:00	49.0	45.7	51.4	61.1
21/05/2017 21:15	00:05:00	50.9	45.8	52.5	69.0
21/05/2017 21:20	00:05:00	48.8	45.1	51.0	61.0
21/05/2017 21:25	00:05:00	51.7	45.1	55.2	64.7
21/05/2017 21:30	00:05:00	49.6	46.0	52.0	60.5

Time	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFMax}
21/05/2017 21:35	00:05:00	52.4	45.9	54.3	70.5
21/05/2017 21:40	00:05:00	50.7	45.2	53.7	59.3
21/05/2017 21:45	00:05:00	50.5	43.8	53.6	66.7
21/05/2017 21:50	00:05:00	50.4	45.9	52.9	58.0
21/05/2017 21:55	00:05:00	46.7	43.2	48.8	55.8
21/05/2017 22:00	00:05:00	48.0	43.2	50.7	65.3
21/05/2017 22:05	00:05:00	46.7	44.1	48.1	55.6
21/05/2017 22:10	00:05:00	48.0	43.2	50.3	58.0
21/05/2017 22:15	00:05:00	46.1	41.3	48.5	57.4
21/05/2017 22:20	00:05:00	45.8	41.5	48.2	55.0
21/05/2017 22:25	00:05:00	48.1	41.9	52.4	57.3
21/05/2017 22:30	00:05:00	45.4	42.7	47.2	51.3
21/05/2017 22:35	00:05:00	45.7	43.1	47.3	57.7
21/05/2017 22:40	00:05:00	43.6	40.2	45.8	52.2
21/05/2017 22:45	00:05:00	50.7	43.8	54.1	64.0
21/05/2017 22:50	00:05:00	45.9	42.0	48.1	54.9
21/05/2017 22:55	00:05:00	43.3	39.2	46.1	53.5
21/05/2017 23:00	00:05:00	46.8	41.2	49.8	61.7
21/05/2017 23:05	00:05:00	43.5	38.4	46.0	53.8
21/05/2017 23:10	00:05:00	45.4	42.0	47.9	55.6
21/05/2017 23:15	00:05:00	45.2	38.8	47.7	57.1
21/05/2017 23:20	00:05:00	46.3	42.0	49.2	58.4
21/05/2017 23:25	00:05:00	44.9	39.4	47.9	56.1
21/05/2017 23:30	00:05:00	44.3	39.2	47.3	52.3
21/05/2017 23:35	00:05:00	42.7	39.7	45.0	55.4
21/05/2017 23:40	00:05:00	42.8	38.1	45.2	61.0
21/05/2017 23:45	00:05:00	43.8	39.3	46.0	59.9
21/05/2017 23:50	00:05:00	42.4	37.8	44.2	61.3
21/05/2017 23:55	00:05:00	43.2	38.5	46.3	59.5
22/05/2017 00:00	00:05:00	42.0	37.1	43.9	53.4
22/05/2017 00:05	00:05:00	42.7	39.1	45.2	55.4
22/05/2017 00:10	00:05:00	43.2	40.3	44.9	55.3
22/05/2017 00:15	00:05:00	45.2	39.7	48.2	54.1
22/05/2017 00:20	00:05:00	43.5	38.9	46.3	52.0
22/05/2017 00:25	00:05:00	40.6	36.2	43.1	51.8

Time	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFMax}
22/05/2017 00:30	00:05:00	41.3	37.1	43.8	59.4
22/05/2017 00:35	00:05:00	41.6	38.9	43.6	55.8
22/05/2017 00:40	00:05:00	38.5	35.8	40.5	48.0
22/05/2017 00:45	00:05:00	40.4	35.8	42.9	56.1
22/05/2017 00:50	00:05:00	39.2	35.1	41.7	56.1
22/05/2017 00:55	00:05:00	42.5	36.0	45.0	58.2
22/05/2017 01:00	00:05:00	46.2	35.7	51.2	60.2
22/05/2017 01:05	00:05:00	40.0	35.5	42.6	52.0
22/05/2017 01:10	00:05:00	40.0	35.1	42.4	60.2
22/05/2017 01:15	00:05:00	39.8	34.5	43.1	49.7
22/05/2017 01:20	00:05:00	38.2	33.1	41.5	52.4
22/05/2017 01:25	00:05:00	37.9	34.4	40.1	48.4
22/05/2017 01:30	00:05:00	37.2	34.2	39.4	44.6
22/05/2017 01:35	00:05:00	37.3	34.7	39.7	49.1
22/05/2017 01:40	00:05:00	36.7	33.9	38.8	51.2
22/05/2017 01:45	00:05:00	41.8	33.7	44.2	58.3
22/05/2017 01:50	00:05:00	38.5	34.7	41.2	51.7
22/05/2017 01:55	00:05:00	39.2	34.2	42.1	53.5
22/05/2017 02:00	00:05:00	37.8	33.9	40.8	54.3
22/05/2017 02:05	00:05:00	39.1	34.4	41.7	49.3
22/05/2017 02:10	00:05:00	37.1	33.5	40.0	48.1
22/05/2017 02:15	00:05:00	39.2	33.1	42.8	53.0
22/05/2017 02:20	00:05:00	36.5	32.5	39.3	45.0
22/05/2017 02:25	00:05:00	35.0	32.5	37.6	41.9
22/05/2017 02:30	00:05:00	37.9	33.3	40.8	47.1
22/05/2017 02:35	00:05:00	34.5	32.4	36.2	52.5
22/05/2017 02:40	00:05:00	36.2	32.5	39.0	46.1
22/05/2017 02:45	00:05:00	34.0	31.7	35.8	44.2
22/05/2017 02:50	00:05:00	36.1	32.9	38.6	44.3
22/05/2017 02:55	00:05:00	36.5	33.3	38.6	52.0
22/05/2017 03:00	00:05:00	38.5	33.1	42.2	50.3
22/05/2017 03:05	00:05:00	38.5	33.9	41.3	53.0
22/05/2017 03:10	00:05:00	34.8	32.8	36.7	43.8
22/05/2017 03:15	00:05:00	36.8	33.1	39.0	51.2
22/05/2017 03:20	00:05:00	40.6	35.4	43.7	57.1

Time	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFMax}
22/05/2017 03:25	00:05:00	42.5	38.6	44.8	51.2
22/05/2017 03:30	00:05:00	40.4	34.6	43.4	51.8
22/05/2017 03:35	00:05:00	43.1	34.9	44.3	67.3
22/05/2017 03:40	00:05:00	43.0	36.0	46.1	56.8
22/05/2017 03:45	00:05:00	48.2	40.1	52.2	59.8
22/05/2017 03:50	00:05:00	53.5	44.4	57.4	66.1
22/05/2017 03:55	00:05:00	55.3	46.9	59.1	66.2
22/05/2017 04:00	00:05:00	55.7	47.8	59.5	67.1
22/05/2017 04:05	00:05:00	55.8	48.8	59.0	68.1
22/05/2017 04:10	00:05:00	57.2	50.2	60.6	68.4
22/05/2017 04:15	00:05:00	54.0	48.8	56.7	65.8
22/05/2017 04:20	00:05:00	54.0	48.8	56.6	65.1
22/05/2017 04:25	00:05:00	52.2	47.3	54.8	59.5
22/05/2017 04:30	00:05:00	52.3	45.5	54.8	67.7
22/05/2017 04:35	00:05:00	51.7	45.5	53.8	66.5
22/05/2017 04:40	00:05:00	52.7	45.4	53.5	71.6
22/05/2017 04:45	00:05:00	49.3	43.3	52.1	62.1
22/05/2017 04:50	00:05:00	49.6	44.5	52.6	58.5
22/05/2017 04:55	00:05:00	50.0	45.0	52.8	59.0
22/05/2017 05:00	00:05:00	50.5	45.3	53.4	59.8
22/05/2017 05:05	00:05:00	50.7	45.1	53.2	65.3
22/05/2017 05:10	00:05:00	48.5	44.1	51.3	56.5
22/05/2017 05:15	00:05:00	49.4	45.1	52.1	59.4
22/05/2017 05:20	00:05:00	48.1	44.5	50.6	57.3
22/05/2017 05:25	00:05:00	48.8	44.5	51.7	59.6
22/05/2017 05:30	00:05:00	50.3	44.7	52.7	68.3
22/05/2017 05:35	00:05:00	50.2	45.4	52.0	69.1
22/05/2017 05:40	00:05:00	50.8	46.1	53.7	58.8
22/05/2017 05:45	00:05:00	49.5	45.1	52.4	58.2
22/05/2017 05:50	00:05:00	50.3	44.8	52.9	63.2
22/05/2017 05:55	00:05:00	49.1	44.8	51.9	60.3
22/05/2017 06:00	00:05:00	49.6	46.2	51.9	56.8
22/05/2017 06:05	00:05:00	49.5	45.9	51.9	59.2
22/05/2017 06:10	00:05:00	50.6	46.6	52.9	58.7
22/05/2017 06:15	00:05:00	50.7	46.0	52.8	60.8

Time	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFMax}
22/05/2017 06:20	00:05:00	49.2	45.8	51.7	56.5
22/05/2017 06:25	00:05:00	48.8	46.0	50.9	58.6
22/05/2017 06:30	00:05:00	50.7	47.3	53.1	59.2
22/05/2017 06:35	00:05:00	49.9	46.2	52.6	58.4
22/05/2017 06:40	00:05:00	51.5	47.7	54.1	59.5
22/05/2017 06:45	00:05:00	50.7	46.3	52.3	65.5
22/05/2017 06:50	00:05:00	50.9	46.8	53.1	63.2
22/05/2017 06:55	00:05:00	52.2	46.7	56.0	61.1
22/05/2017 07:00	00:05:00	49.7	46.5	52.1	57.0
22/05/2017 07:05	00:05:00	49.3	46.0	51.7	56.6
22/05/2017 07:10	00:05:00	48.4	46.1	50.2	56.1
22/05/2017 07:15	00:05:00	49.0	46.4	51.1	56.4
22/05/2017 07:20	00:05:00	49.3	46.5	51.3	57.6
22/05/2017 07:25	00:05:00	50.7	46.8	53.2	62.5
22/05/2017 07:30	00:05:00	50.1	47.0	52.4	60.4
22/05/2017 07:35	00:05:00	49.9	46.1	52.2	63.3
22/05/2017 07:40	00:05:00	50.2	46.6	52.7	58.7
22/05/2017 07:45	00:05:00	48.4	45.9	50.2	57.0
22/05/2017 07:50	00:05:00	49.6	46.4	51.8	58.0
22/05/2017 07:55	00:05:00	49.0	46.3	51.1	58.1
22/05/2017 08:00	00:05:00	50.2	46.0	53.0	60.7
22/05/2017 08:05	00:05:00	51.0	47.5	52.6	65.6
22/05/2017 08:10	00:05:00	49.1	46.8	51.1	55.4
22/05/2017 08:15	00:05:00	49.3	46.3	51.6	56.2
22/05/2017 08:20	00:05:00	48.8	46.2	50.3	65.1
22/05/2017 08:25	00:05:00	49.5	46.5	51.7	60.1
22/05/2017 08:30	00:05:00	49.5	47.3	51.2	61.9
22/05/2017 08:35	00:05:00	48.7	46.7	50.3	56.6
22/05/2017 08:40	00:05:00	48.5	45.8	50.3	60.3
22/05/2017 08:45	00:05:00	49.0	46.4	51.0	58.5
22/05/2017 08:50	00:05:00	50.2	45.5	53.3	64.0
22/05/2017 08:55	00:05:00	48.7	45.2	51.5	57.1
22/05/2017 09:00	00:05:00	49.3	46.0	51.9	59.6
22/05/2017 09:05	00:05:00	47.5	45.1	49.4	55.5
22/05/2017 09:10	00:05:00	47.6	44.5	50.2	57.2

Time	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFMax}
22/05/2017 09:15	00:05:00	47.9	45.1	50.3	55.8
22/05/2017 09:20	00:05:00	47.4	44.7	49.9	54.3
22/05/2017 09:25	00:05:00	50.1	45.4	53.3	62.0
22/05/2017 09:30	00:05:00	65.1	45.4	56.5	86.5
22/05/2017 09:35	00:05:00	47.5	45.2	49.0	58.0
22/05/2017 09:40	00:05:00	47.7	44.8	49.2	57.7
22/05/2017 09:45	00:05:00	48.4	45.2	50.7	60.4
22/05/2017 09:50	00:05:00	49.8	45.6	52.5	61.1
22/05/2017 09:55	00:05:00	47.6	45.2	49.3	55.5
22/05/2017 10:00	00:05:00	48.3	44.9	50.5	58.9
22/05/2017 10:05	00:05:00	48.2	45.3	50.6	56.8
22/05/2017 10:10	00:05:00	48.1	44.3	50.9	58.1
22/05/2017 10:15	00:05:00	48.6	44.5	51.2	60.5
22/05/2017 10:20	00:05:00	49.2	44.3	50.6	63.3
22/05/2017 10:25	00:05:00	49.3	45.8	51.6	59.8
22/05/2017 10:30	00:05:00	49.9	44.5	51.9	65.8
22/05/2017 10:35	00:05:00	46.6	44.1	48.4	56.6
22/05/2017 10:40	00:05:00	48.2	45.4	49.8	60.1
22/05/2017 10:45	00:05:00	48.5	45.9	50.5	57.2
22/05/2017 10:50	00:05:00	50.7	46.4	52.2	63.2
22/05/2017 10:55	00:05:00	49.1	44.8	52.0	60.5
22/05/2017 11:00	00:05:00	50.0	45.5	52.8	60.9
22/05/2017 11:05	00:05:00	49.2	46.0	51.3	63.2
22/05/2017 11:10	00:05:00	48.5	45.4	50.4	60.7
22/05/2017 11:15	00:05:00	49.5	45.8	51.5	65.0
22/05/2017 11:20	00:05:00	50.9	46.4	53.4	67.5
22/05/2017 11:25	00:05:00	48.4	45.0	50.5	61.7
22/05/2017 11:30	00:05:00	48.8	44.6	51.3	61.5
22/05/2017 11:35	00:05:00	50.0	45.0	53.4	61.0
22/05/2017 11:40	00:05:00	49.2	45.6	51.7	58.7
22/05/2017 11:45	00:05:00	48.7	44.6	51.2	60.8
22/05/2017 11:50	00:05:00	47.5	44.6	49.9	60.2
22/05/2017 11:55	00:05:00	48.1	45.4	49.8	60.0
22/05/2017 12:00	00:05:00	48.8	45.3	50.0	65.4
22/05/2017 12:05	00:05:00	46.5	44.1	48.3	56.5

Time	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFMax}
22/05/2017 12:10	00:05:00	47.8	44.9	49.7	59.4
22/05/2017 12:15	00:05:00	49.1	45.8	51.7	56.5
22/05/2017 12:20	00:05:00	48.3	45.3	50.5	57.6
22/05/2017 12:25	00:05:00	56.7	44.4	58.4	74.2
22/05/2017 12:30	00:05:00	46.5	44.0	48.7	54.1
22/05/2017 12:35	00:05:00	49.8	45.1	52.4	59.6
22/05/2017 12:40	00:00:27	50.7	47.1	51.6	62.2

Table 04-2
Roche Close - Measured Sound Levels at the Measurement Position, free-field, dB

Date	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFmax}
2017/05/21 10:57	15	50.4	41.5	52.2	69.7
2017/05/21 12:45	15	45.4	41.7	47.4	61.2
2017/05/21 14:23	15	46.3	39.3	48.8	62.8
2017/05/21 15:47	15	47.6	39.1	49.1	71.2
2017/05/22 02:26	5	33.5	29.2	34.5	55.4
2017/05/22 02:31	5	31.8	29.4	33.6	40.3
2017/05/22 02:37	5	31.7	29.6	33.3	41.9
2017/05/22 02:42	5	30.7	28.0	32.6	36.2
2017/05/22 02:47	5	30.6	29.0	32.4	35.6
2017/05/22 02:52	5	33.4	29.9	33.1	60.2

Table 04-3
Burton Road - Measured Sound Levels at the Measurement Position, free-field, dB

Date	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFmax}
2017/05/21 10:37	15	68.0	56.6	71.5	76.5
2017/05/21 12:26	15	67.9	59.5	71.1	81.5
(2017/05/21 14:04	15	68.1	55.0	71.1	84.0
2017/05/21 15:28	15	71.7	56.9	71.1	100.2
2017/05/22 03:00	5	56.0	36.4	55.0	76.7
2017/05/22 03:05	5	56.2	35.7	52.3	75.5
2017/05/22 03:10	5	36.6	35.4	37.6	41.0
2017/05/22 03:15	5	54.7	35.2	44.6	75.9
2017/05/22 03:20	5	62.2	37.2	65.1	81.6
2017/05/22 03:25	5	59.7	39.5	61.1	76.3

Table 04-4
Belgrave Road - Measured Sound Levels at the Measurement Position, free-field, dB

Date	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFmax}
2017/05/21 11:24	15	50.8	44.8	54.1	65.3
2017/05/21 13:21	15	51.5	45.9	54.4	74.1
2017/05/21 14:45	15	52.4	43.5	54	72.9
2017/05/21 16:08	15	49.4	43.1	52.7	66.9
2017/05/22 01:48	30	38.4	37.4	39.4	50.4

Table 04-5
Lord Street - Measured Sound Levels at the Measurement Position, free-field, dB

Date	Duration	L _{Aeq}	L _{A90}	L _{A10}	L _{AFmax}
2017/05/21 11:47	15	47.2	49.3	43.3	65.5
2017/05/21 13:42	15	49.3	51.4	44.2	72.6
2017/05/21 15:05	15	53.0	52.8	41.9	78.5
2017/05/21 16:34	15	47.9	49.9	41.4	67.1
2017/05/22 01:10	30	36.6	39.4	32.7	53.7

APPENDIX 05

Noise Models

Appendix 05– Noise Models

Figure 05-1
Daytime Specific Sound Levels Free-field dB(A)

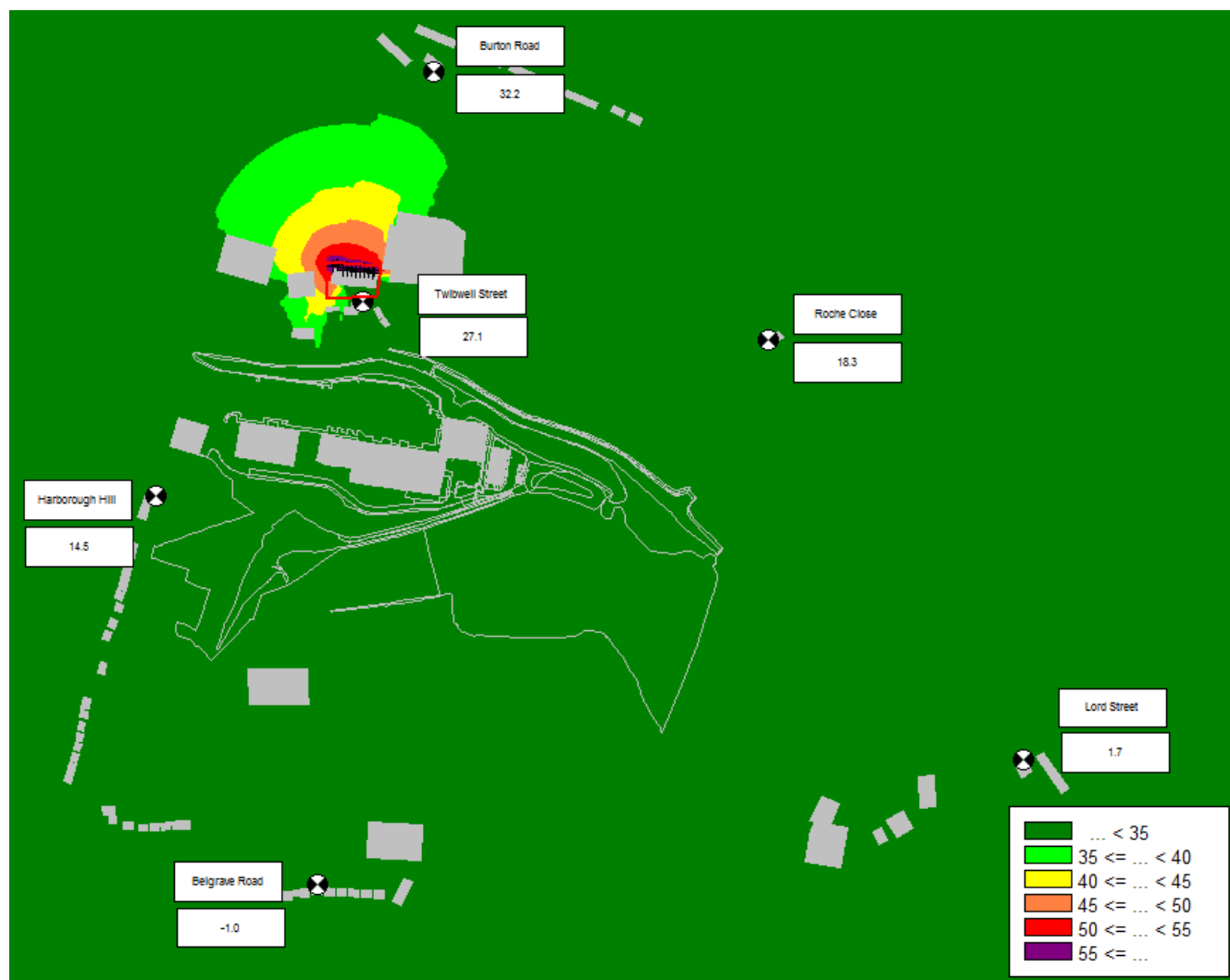
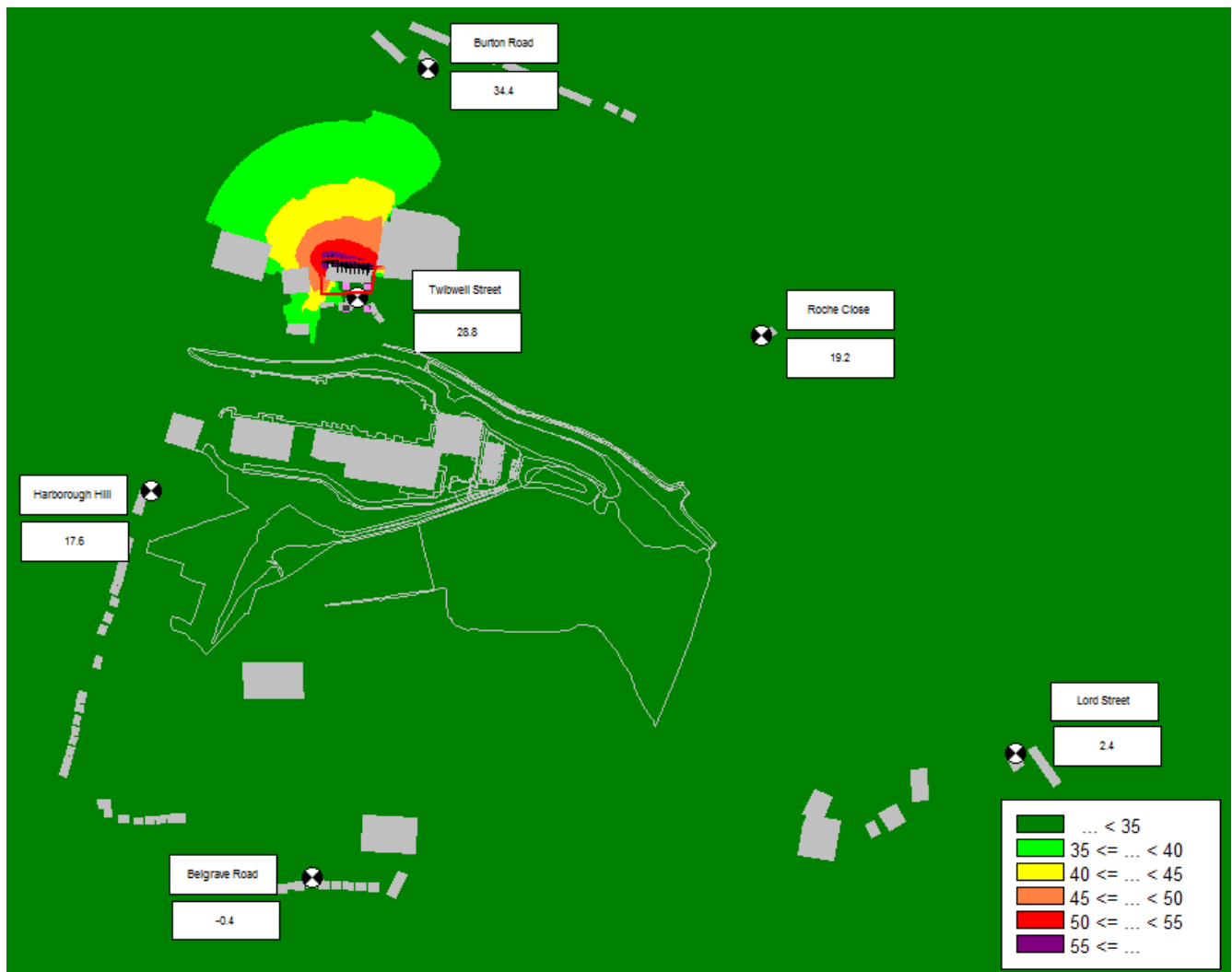


Figure 05-2
Night-Time Specific Sound Levels Free-field dB(A)



APPENDIX 06

Report Limitations

Appendix 06 – Report Limitations

This entails a physical investigation of the site with a sufficient number of sample measurements to provide quantitative information concerning the type and degree of noise affecting the site. The objectives of the investigation have been limited to establishing sources of noise material to carrying out an appropriate assessment.

The number and duration of noise measurements have been chosen to give reasonably representative information on the environment within the agreed time, and the locations of measurements have been restricted to the areas unoccupied by building(s) that are easily accessible without undue risk to our staff.

As with any sampling, the number of sampling points and the methods of sampling and testing cannot preclude the existence of “hotspots” where noise levels may be significantly higher than those actually measured due to previously unknown or unrecognised noise emitters. Furthermore, noise sources may be intermittent or fluctuate in intensity and consequently may not be present or may not be present in full intensity for some or all of the survey duration.

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