COYLTON GREENER GRID PARK

LAND SOUTH OF AYR ROAD, COYLTON

APPENDIX 5: NOISE IMPACT ASSESSMENT

OCTOBER 2021

Prepared By:

Arcus Consultancy Services

7th Floor
144 West George Street
Glasgow
G2 2HG

T +44 (0)141 221 9997 l **E** info@arcusconsulting.co.uk
w www.arcusconsulting.co.uk

Registered in England & Wales No. 5644976

TABLE OF CONTENTS

1 INTRODUCTION

Arcus Consultancy Services Ltd (Arcus) has been commissioned by Statkraft UK LTD ('the Applicant') to undertake a noise assessment in relation to the development of a Greener Grid Park ('the Development') on land off Ayr Road, Coylton ('the Site').

The aim of this assessment is to determine the existing acoustic climate, predict the sound levels due to the operation of the Development, and to assess these levels against relevant guidance.

Where appropriate, mitigation measures have been recommended to ensure that the amenity of residents in the locality of the Development is not unreasonably impacted by the Development.

2 DEVELOPMENT OVERVIEW

The Development is located approximately 5 kilometres (km) east of Coylton. Immediately adjacent to a large-scale National Grid substation, and 150 m south of the A70.

The Development is intended to provide services supporting the flexible operation of the National Grid and decarbonisation of electricity supply by balancing electricity supply and demand. The Development will import and export electricity but will not generate any additional electricity. The proposed batteries will store surplus electricity to be fed into the grid when required, while the energy management modules i.e., synchronous condensers, flywheels etc. will reduce fluctuations, thus improving stability and reducing the risk of power failures.

A figure detailing the Development layout is presented in Appendix 1.

3 CONSULTATION

Consultation was undertaken with Environmental Health Department of East Ayrshire Council on 25th May 2021. The following methodology was agreed:

- Background noise measurements to be undertaken at two locations representative of the nearest Noise Sensitive Receptors (NSRs): East Tarelgin Bungalow and MacQuittistion Farm House;
- Measurements to be undertaken over 24 hours or more to capture day and night periods;
- Assessment criteria of *'rating level no more than 5 dB above background'* to be adopted;
- Cumulative effects from Barr Killloch Energy Recovery Park (1 km to Northeast) considered negligible and excluded from the assessment; and
- Construction noise scoped out from assessment.

4 RELEVANT GUIDANCE

The following standards and guidance are considered relevant to this assessment;

- Planning Advice Note 1/2011: Planning and Noise (PAN 1/2011);
- Technical Advice Note: Planning and Noise (TAN); and
- BS 4142:2014+A1:2019 – *'Methods for rating and assessing industrial and commercial sound'* ('BS 4142');

4.1 Planning Advice Note 1/2011: Planning and Noise

Scottish Government's Planning Advice Note PAN 1/2011 provides advice on the role of the planning system in helping to prevent and limit the adverse effects of noise, with information and advice on assessment methods provided in TAN.

The PAN promotes the principles of good acoustic design and the appropriate location of new noise-generating development. The selection of a site, the design of a development and conditions which may be attached to a planning permission can all play a part in preventing, controlling and mitigating the effects of noise. The level of detail required of a noise assessment should be balanced against the degree of risk to environmental quality, public health and amenity.

The associated Technical Advice Note (TAN) offers advice on the assessment of noise impact and includes details of the legislation, technical standards and codes of practice appropriate to specific noise issues. Appendix 1 of TAN identifies BS 4142 as the preferred code of practice for the rating and assessment of industrial noise.

4.2 Technical Advice Note: Planning and Noise

The TAN provides guidance which may assist in the technical assessment of noise, although it is neither prescriptive nor exhaustive. It provides a summary of relevant and current (at the time of publication) technical standards, guidance and codes of practice, including BS 4142 (at the time the 1997 version was current, which has since been superseded by the 2019 amendment).

4.3 BS 4142: 2014+A1: 2019

BS 4142:2014+A1:2019 ('BS 4142') describes methods for rating and assessing sound in order to provide an indication of its likely impact upon nearby premises (typically residential dwellings).

The Specific sound emitted from the Development (dB, L_{Aeq}) is rated by taking into account both the level and character (i.e., tonal elements, impulsivity, intermittency and distinctiveness) of the sound. This is achieved by applying appropriate corrections to the specific sound level externally at the receptor location, which gives the Rating level of the sound in question.

The Rating level is then assessed against the existing prevailing background sound level (dB, L_{A90}) at that location in order to determine a likely level of impact. The level by which the Rating level exceeds the prevailing background sound level indicates the following potential impacts:

- A difference of 10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- A difference of around 5 dB is likely to be an indication of an adverse impact, depending on the context; and
- Where the Rating level does not exceed the background level, this is an indication of the sound source having a low impact, depending on the context.

When considering the level of impact, BS 4142 emphasises the importance of the context in which a sound occurs.

5 BACKGROUND SOUND SURVEY

To establish the background sound environment in the locality of the Development, a background noise survey was undertaken from 8th to 10th June 2021, at two locations considered representative of the closest NSRs.

Figure 1 below shows the location of the closest NSRs to the Development, along with the noise monitoring locations. The monitoring equipment was setup to the south of Ayr Road near East Tarelgin Bungalow, and to the southwest corner of land under Client ownership to represent MacQuisttiston Farm House. Location 2 is of similar distance from the existing substation as MacQuittiston Farm House, and is considered a conservative representation of the background levels at this receptor.

Noise sources observed during equipment installation included sound from passing traffic, livestock (cattle), and existing substation noise. Sound from farm activities and machinery from the respective receptors were also audible.

Figure 1: Noise Monitoring location and Noise Receptors

The monitoring equipment consisted of Class 1 sound level meters, calibrated to traceable standards, and housed in all-weather cases with long-life batteries. The microphones were positioned at a height of 1.4 m above ground level, with suitable proprietary windshields. The meters were field-calibrated at the start and end of the survey period; no significant calibration drift was found.

Various indices were measured by the equipment during the survey period, including $L_{A90,15mins}$. The L_{A90} index represents the A-weighted sound pressure level exceeded for 90% of a time period, in this case 15 minutes intervals (i.e., the background sound level).

Survey record sheets showing specific details of the monitoring locations and photograph of equipment in situ can be found in Appendix 2.

Weather information was taken from the weather underground website[1]; data from the weather station nearest to monitoring location (IMAUCH2) was analysed, and periods of wind speeds above 5 m/s or precipitation were excluded from measured data analysis.

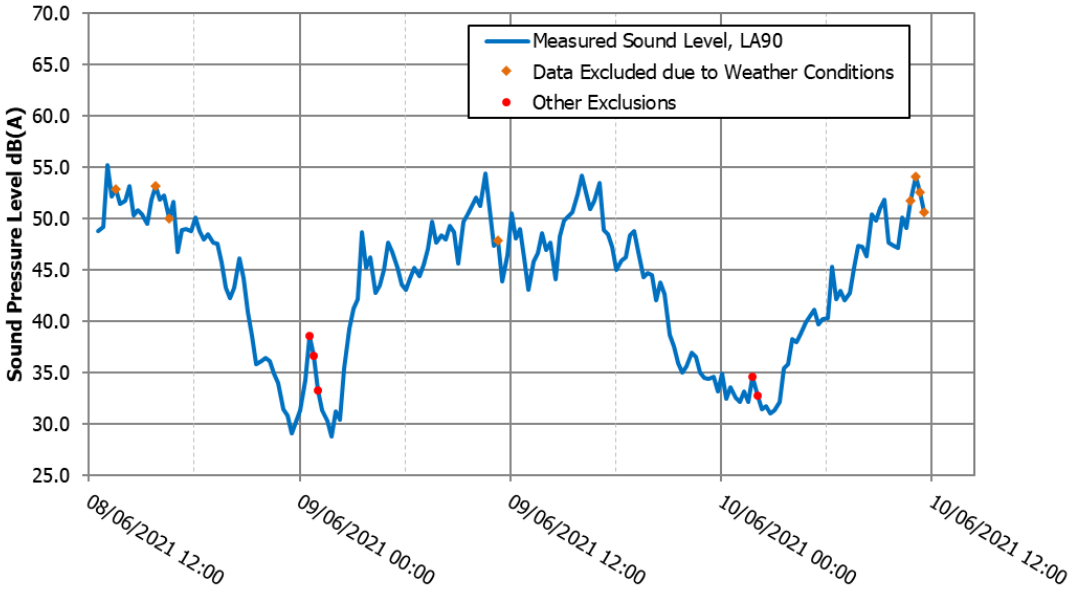
[1] https://www.wunderground.com/dashboard/pws/IMAUCH2/table/2021-06-10/2021-06-10/daily - Accessed 29/07/21

6 SURVEY RESULTS

6.1 Location 1

Background measurement results at location 1 are presented for the day and night periods.

Chart 1: Background Noise Measurement Results – Location 1



An increase in the background noise level was observed at night around 0100 on 09/07/21, a similar peak was observed around the 0200 at night of 10/07/21. The peaks are inconsistent with the immediate night-time noise profile and are likely from livestock noise. As such, these measurement points have been removed from analysis as a conservative approach.

When determining typical daytime and night-time levels for assessment purposes, BS 4142 advises against assuming that it can be determined using any single approach (e.g., mean, median, or mode etc.). To determine the prevailing background sound level for the purposes of the assessment, Charts 2 and 3 therefore present the range of $L_{A90,15min}$ noise levels recorded, along with the percentage of periods for which they occurred, for daytime (0700-2300) and night time (2300-0700) periods respectively.

Chart 2: Daytime Background Statistical Analysis – Location 1

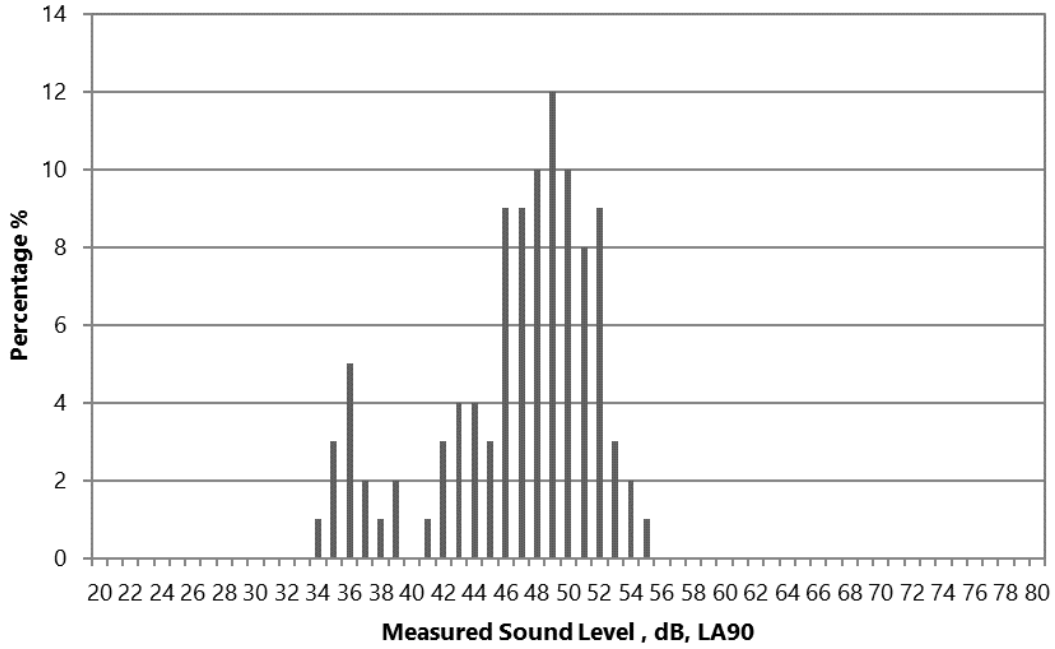


Chart 3: Night-time Background Statistical Analysis – Location 1

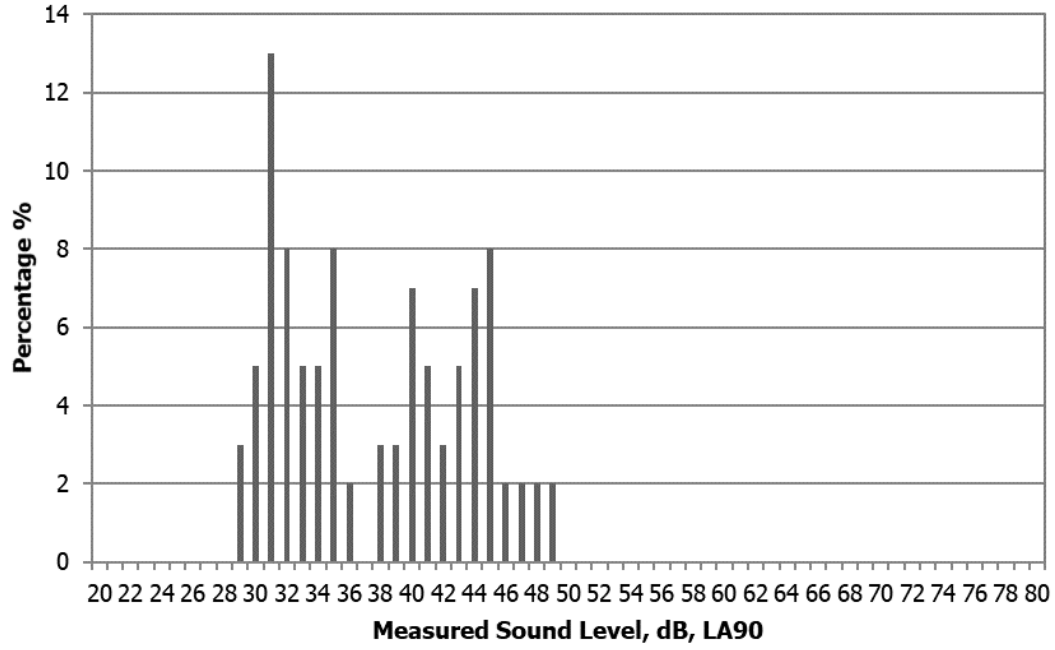


Table 1 below presents the mode, median, and mean values of the above datasets.

Table 1: Background Data Analysis – Location 1

Period	Mode	Median	Mean	Representative
Day	49	48	47	47
Night	31	35	36	31

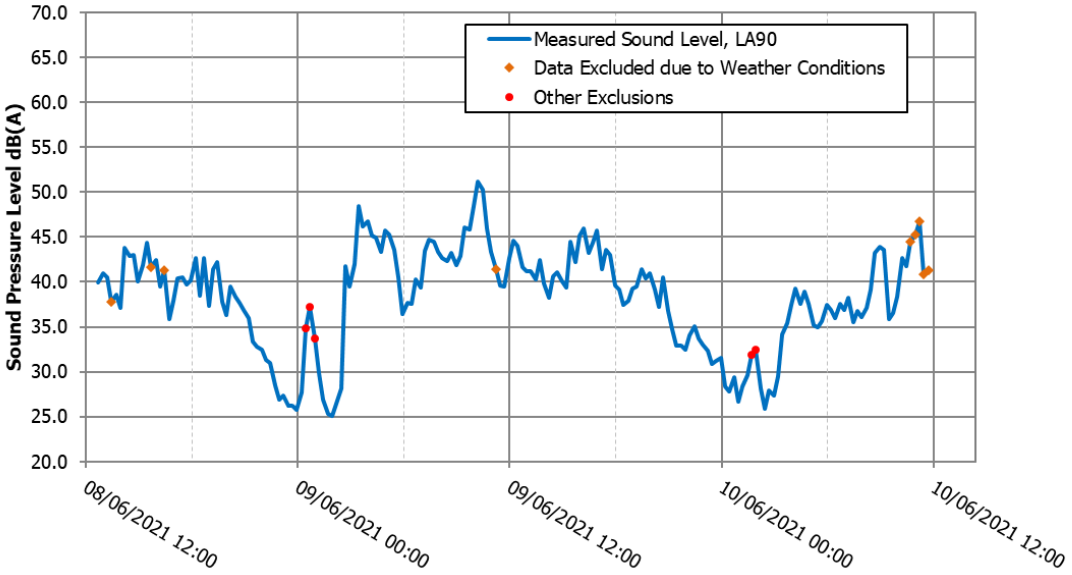
Based upon the results presented in Chart 1, along with the spread of data presented in Charts 2 and 3, a daytime background sound level of 47 dB, L_{A90} is considered appropriate for the purposes of this assessment.

The night-time mode sound level of 31 dB, L_{A90} represents the quietest period of the night and as such has been used as a conservative approach for this assessment.

6.2 Location 2

Results of the background sound survey at location 2 are presented for the day and night periods.

Chart 4: Background Noise Measurement Results – Location 2



It can be seen that the local sound profile at Location 2 follows a similar trend to Location 1. The peaks in sound levels have been excluded from data analysis.

Charts 5 and 6 present the range of $L_{A90,15min}$ noise levels recorded, along with the percentage of periods for which they occurred, for daytime and night time periods respectively.

Chart 5: Daytime Background Statistical Analysis – Location 2

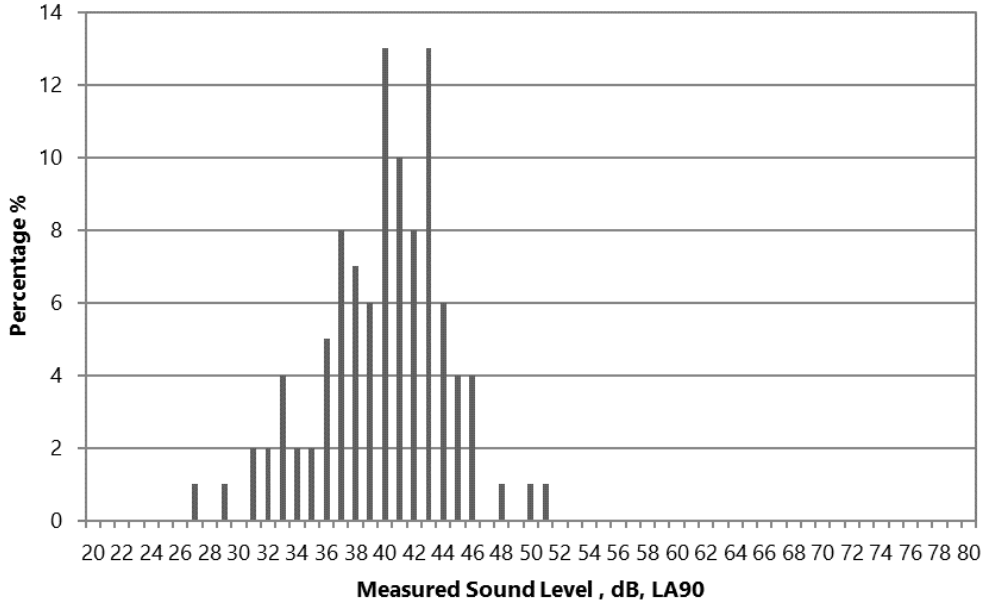


Chart 6: Night-time Background Statistical Analysis – Location 2

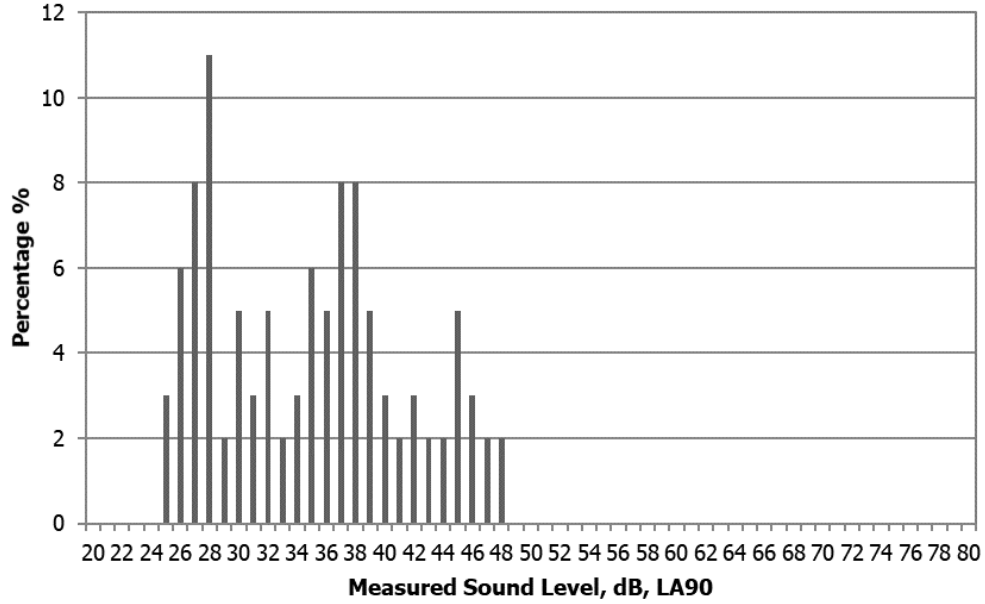


Table 2 below presents the mode, median and mean values of the above datasets.

Table 2: Background Data Analysis – Location 2

Period	Mode	Median	Mean	Representative
Day	40	40	40	40
Night	28	35	35	28

Based upon the results presented in Chart 4, along with the spread of data presented in Charts 5 and 6, a daytime background sound level of 40 dB, L_{A90} and a conservative night-

time background sound level of 28 dB, L_{A90} have been used for the purposes of this assessment.

7 NOISE MODELLING

7.1 Noise Emission Levels

The Specific sound level[2] at the nearest noise-sensitive receptors has been calculated in SoundPlan 8.2, using the environmental noise propagation model ISO 9613-2:1996 – Acoustics; '*Attenuation of sound during propagation outdoors – Part 2: General method of calculation*[3].

The Development comprises of the following noise sources:

- Energy Management Buildings, each housing a Synchronous Condenser and flywheel;
- Cooler / Chiller units;
- Energy Management Building HVAC unit;
- Primary Transformers;
- Auxiliary Transformers;
- Battery containers each with two external wall-mounted HVAC units;
- Inverters; and
- LV to MV Inverter-Transformers.

There is some additional plant located within containers, such as LV Room and COMMS House, as well as other generic plant such as pumps etc., however noise from these sources is negligible and has not been included as part of the modelling process.

The sound power levels of the plant included in the noise model are presented in Table 3 below. The octave band spectrum for the inverters, Battery HVAC units, synchronous condenser, transformers and coolers was taken from respective manufacturer datasheets or noise test reports provided by the Client.

Table 3: Sound Power Levels

Plant	Sound Power Level, L_{WA}, dB(A)	Octave Band Centre Frequency, Hz in dB(A)							
		63	125	250	500	1k	2k	4k	8k
Synchronous Condensers	85	72	76	78	81	71	74	67	54
Primary Transformer	85	64	70	78	80	80	75	69	64
GE Coolers	82	68	71	74	77	76	71	66	59
Energy Management Building HVAC	69	64	63	61	60	58	54	55	46
BESS Inverters (with Silencer)	85	60	70	77	80	77	77	76	69
LV to MV Inverter-Transformers	73	52	58	66	68	68	63	57	52
Battery HVAC Unit	75	58	68	62	66	68	68	66	59
Auxiliary Transformer	78	57	63	71	73	73	68	62	57

The above sources were modelled at their respective positions as detailed in Appendix 1. The acoustic performance of the Energy Management Buildings themselves were modelled as detailed in Table 4, taken from the SoundPlan library of building materials.

[2] The sound level produced by a source, without corrections for acoustic features as discussed in Section 4.3.

[3] ISO 9613-2:1996 Acoustics; Attenuation of sound during propagation outdoors – Part 2: General method of calculation.

Table 4: Reduction Index of Building Envelope

Item	SRI, dB, R_W	Octave Band Centre Frequency, Hz					
		125	250	500	1k	2k	4k
Roof (Double steel corrugated sheet cladding)	36	18	23	33	43	48	39
Walls[4] (Double steel corrugated sheet cladding with mineral wool)	42	20	29	43	48	56	57

7.2 Model Parameters

The ISO 9613-2 method predicts the level of sound at a receptor by taking the octave-band sound power level spectrum of the source, and applying a number of attenuation factors that determine the resulting rating level at the receptor location.

The following parameters were used in the prediction model and are considered to provide a conservative prediction of the noise levels likely to be experienced in practice:

- All plant operating simultaneously at full capacity (highly unlikely in practice);
- Includes local terrain and buildings with respective heights above ground level;
- Ground absorption of G=0 (hard) for all areas of hardstanding, and G=1 (soft) for other areas; and
- Receivers placed at external façade of receptors at 1.5 m height (equivalent to head height).

7.3 Mitigation Measures

The following mitigation measures were included in the model:

- 3 m high acoustic fences surrounding the two compounds of cooler units;
- All inverters and inverter-transformer positioned to the south of each battery compound; and
- All HVAC units located on the southern facade of each battery container (i.e., facing away from NSRs).

A noise map showing predicted specific levels (i.e., noise levels prior to any rating corrections) is presented in Appendix 3.

7.4 Rating Level Corrections

BS 4142 states that corrections should be applied to account for certain acoustic features which have the potential to increase the level of noise impact at nearby dwellings.

The acoustic features to be considered in the application of rating corrections are as follows:

- Impulsivity: No impulsive characterises are anticipated from the Development;
- Tonal Elements: The main noise emitting plant in the Development will be cooling systems, and therefore non-tonal.
- Intermittency: The plant will operate 24/7 under various load capacity and will therefore not have "identifiable on / off conditions" in terms of BS 4142; no correction for intermittency is therefore required.

[4] For the purposes of this assessment, it is assumed that any doors will have the same acoustic specification as the wall cladding.

- Distinctiveness: The Development is situated adjacent to an existing substation. As such, the noise characteristics of the Development will not be distinctive from existing site context, and as such no correction for distinctiveness has been applied.

Based on the above, no correction for acoustic features has been applied; the Rating level at the receptor location is therefore the same as the Specific level.

8 ASSESSMENT OF IMPACT

An assessment of the likely impact has been made based upon the difference between the Rating levels and representative background levels for daytime and night-time periods, as detailed in Section 6.

Background sound levels at Monitoring Location 1 are considered to be representative of receptors located to the north of the Development, along the A70. Background levels at Monitoring Location 2 are taken as being representative of MacQuittiston Farm.

As previously stated, it should be noted that as a worst case, the modelling assumes all plant operating simultaneously, at full power, which is highly unlikely to occur in practice. Emissions are likely to be lower, particularly during night-time periods. In addition, the Development is adjacent to an existing substation, and as such noise from the Development is not considered out of context for the area.

Table 5: BS 4142 Assessment of Impact

Receptor	Rated[5] Level, dB(A)	Background Levels, dB $L_{A90,T}$		Difference, dB	
		Day	Night	Day	Night
East Tarelgin Bungalow	36	47	31	-11	5
East Tareglin Cottage	34			-13	3
Alwyn Cottage	30			-17	-1
MacQuittiston Farm House	29	40	28	-11	1

As can be seen from table above, the Rating levels at the NSRs are below background levels during the day and are no more than 5 dB above the background levels during night-time.

8.1 Uncertainty

Modelling of the proposed plant has been undertaken on a worst-case basis, and assumes all plant is operating simultaneously and at maximum power. In practice, coolers, inverters, transformers, and HVAC units are temperature controlled, and will operate in varying loads depending on cooling requirements; noise levels will therefore be lower than presented during typical operation. This is especially true during night-time when the demand will be minimal and temperature will be lower, resulting in reduced levels of noise.

The assumptions made in this assessment are likely to result in an over-prediction of level of impact in practice; the uncertainties inherent in the assessment will therefore not have a significant impact on the outcome of the assessment.

[5] Ratel level is the same as Specific / predicted level – see section 7.4

9 CONCLUSION

Arcus was commissioned by Statkraft UK LTD to undertake a noise assessment in relation to the Development of the Greener Grid Park near Coylton.

An assessment of noise impact has been undertaken in accordance with BS 4142 criteria as agreed with the Environmental Health Officer. It has been found that the Rating levels due to the operation of the Development do not exceed more than 5 dB above background levels, and as such are compliant with the agreed assessment criteria at the nearest, and therefore all receptors.

As such, provided the mitigation measures in Section 7.3 are incorporated, the Development is considered to be acceptable in terms of noise.

10 GLOSSARY OF TERMS

Decibel (dB): The decibel is the basic unit of noise measurement. It relates to the cyclical changes in pressure created by the sound and operates on a logarithmic scale, ranging upwards from 0 dB. 0 dB is equivalent to the normal threshold of hearing at a frequency of 1000 Hertz (Hz). Each increase of 3 dB on the scale represents a doubling of the Sound Pressure, and is typically the minimum noticeable change in sound level under typical listening conditions.

dB(A): Environmental noise levels are usually discussed in terms of dB(A). This is known as the A-weighted sound pressure level, and indicates that a correction factor has been applied, which corresponds to the human ear's response to sound across the range of audible frequencies. The ear is most sensitive in the middle range of frequencies (around 1000-3000 Hz), and less sensitive at lower and higher frequencies.

A-Weighting: The A weighted noise level is derived by analysing the level of a sound at a range of frequencies and applying a specific correction factor for each frequency before calculating the overall level. In practice this is carried out automatically within noise measuring equipment by the use of electronic filters, which adjust the frequency response of the instrument to mimic that of the ear.

Frequency: The frequency of a sound is equivalent to its pitch in musical terms. The units of frequency are Hertz (Hz), which represents the number of cycles (vibrations) per second.

$L_{A90,t}$: This term is used to represent the A-weighted sound pressure level that is exceeded for 90% of a period of time, t. This is used as a measure of the background noise level.

Noise: Unwanted sound. May refer to both natural (e.g. wind, birdsong etc.) and artificial sounds (traffic, industrial noise, aircraft etc.).

Noise sensitive receptors: Locations that may potentially be adversely affected by the addition of a new source of noise, such as residential properties.

Sound power level (Lw): Sound power measured on the decibel scale, relative to a reference value (Wo) of 10-12 W.

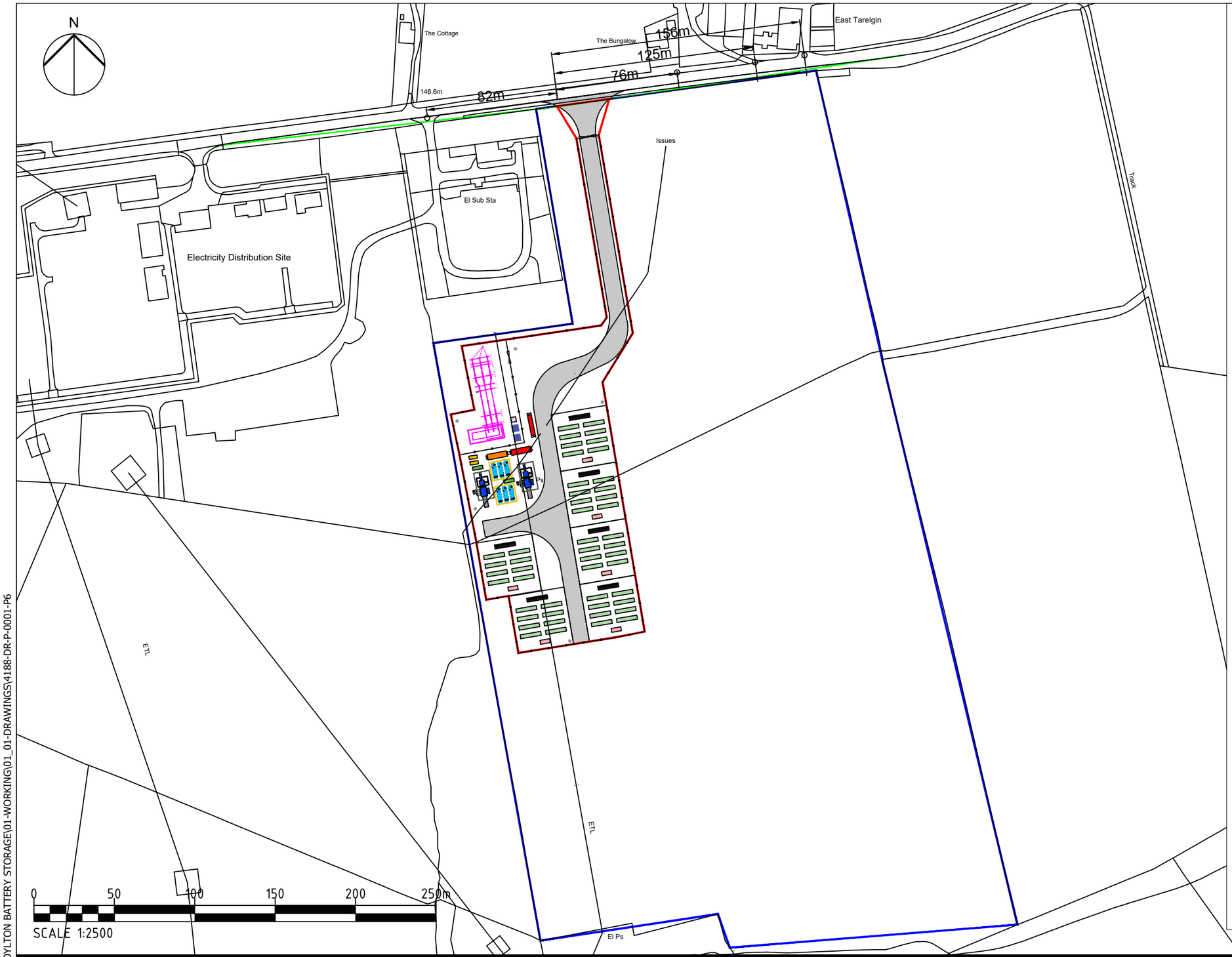
Background Sound: The background sound level is the underlying level of noise present at a particular location for the majority (usually 90%) of a period of time.

Rating Level: Sound levels which have been corrected for certain acoustic features, as required under BS4142 methodology.

Sound pressure level (Lp): Sound pressure measured on the decibel scale, relative to a sound pressure of 2 x 10-5 Pa.

Specific Level: In terms of BS4142 methodology, the specific level is the sound level produced by a source, without corrections for acoustic features.

APPENDIX 1: DEVELOPMENT LAYOUT



KEY:

- SITE BOUNDARY
- LAND OWNERSHIP BOUNDARY
- FENCELINE
- 275kV AIS & TRANSFORMER (1 No. 14.8m x 5.05m x 10.8m)
- SYNC CONDENSER (WITH FLYWHEEL, PONY MOTOR AND FLYWHEEL PROTECTION ENCLOSURE) 2 No. 38.6m x 20.7m x 10.0m ACCESS ENVELOPE)
- AIR BLAST COOLER (6No. 9.6m x 2.4m x 2.5m)
- WATER COOLER PUMP SKID (2 No. 6.35m x 2.05m x 2.6m)
- LUBE OIL PUMP SKID (2 No. 2.15m x 1.1m x 1.1m)
- MV ELECTRICAL HOUSE (1 No. 12.19m x 3.45m x 2.59m)
- LV ELECTRICAL HOUSE (1 No. 12.19m x 3.45m x 2.59m)
- 2500kVA 690V TRANFORMERS (2 No. 4.0m X 4.0m x 2.9m)
- 1000kVA 400V BoP AUXILIARY TRANSFORMERS (1 No. 3.0m x 3.0m x 2.14m)
- BoP COMMS HOUSE (1No. 12.19m x 2.44m x 2.59m)
- EMERGENCY BACK UP DIESEL GENERATOR (2No. 5.1m x 2.07m x 1.6m)
- NOISE ATTENUATION FENCE (4m height)
- PALISADE FENCE (3.4m height)
- SECURITY COLUMN (5No. each 6m height)
- BATTERY (48No. 12.9m x 2.44m x 2.59m)
- INVERTER (6No. 6.1m x 2.44m x 2.59m)
- SWITCHGEAR CONTAINER (6No. 12.2m x 2.44m x 3.0m)

Project Title: COYLTON GREENER GRID PARK

Client: Statkraft

Drawing Title: PROPOSED SITE LAYOUT

Purpose of issue: PLANNING

Designed	Drawn	Checked	Approved
KB	KM	TAT	MG

Arcus Internal Project No.: 4188

Date: 01/03/21

Scale @ A3: 1:2500

THIS DOCUMENT HAS BEEN PREPARED IN ACCORDANCE WITH THE SCOPE OF ARCUS' APPOINTMENT WITH ITS CLIENT AND IS SUBJECT TO THE TERMS OF THAT APPOINTMENT. ARCUS ACCEPTS NO LIABILITY FOR ANY USE OF THIS DOCUMENT OTHER THAN BY ITS CLIENT AND ONLY FOR THE PURPOSES FOR WHICH IT WAS PREPARED AND PROVIDED

Drawing Number: 4188-DR-P-0001

Rev: 6

Arcus Consultancy Services
7th Floor
144 West George Street
Glasgow, G2 2HG
Tel: +44 (0)141 221 9997
Fax: +44 (0)141 221 5610
www.arcusconsulting.co.uk

ARCUS

Plot Date : 21 October 2021 15:41:48
File Name P:\CAD\4188 COYLTON BATTERY STORAGE\01-WORKING\01_01-DRAWINGS\4188-DR-P-0001-P6

Reproduced from Ordnance Survey digital map data © Crown copyright 2018. All rights reserved. License number 100048606

APPENDIX 2: SURVEY RECORD SHEET

Arcus Consultancy Services 7th Floor, 144 West George Street, Glasgow, G2 2HG

Noise Survey Record Sheet

Project No.	4188	**Project Name:**	Coylton
Location (x of y)	1	**Installed By:**	ET
Lat/Long	55.44824, -4.4256	**Location Name**	Position 1
Start Date	08/06/2021	**Start Time**	1203

Equipment Details	**Make/Model**	**Serial No.**
Sound Level Meter:	Rion NL-52	1276547
Calibrator:	Rion NC-74	34104515
Source of Equipment:		Arcus
Meter Timestamp (Start/End, GMT/BST):		Start BST

Location / Source:	next to road, opposite farm
Distance from façade::	>>10m
Noise sources observed:	road noise dominant, cows, hum from substation
Weather Conditons:	dry, 8 oktas, occasional gusts from SW
Additional notes:	48-hour measurement

Installation (Visit 1)

Date:	08/06/2021	**Time:**	1203
Filename:	302	**Calibration level:**	94
Range setting:	20-110	**Meas. period:**	15min
Freq weighting:	A	**Weather Station:**	No
Lp Logging?	Yes (100 ms)	**Audio / Octave?**	No
Notes:	48-hour measurement		

Visit 2

Date:	10/06/2021	**Time:**	13:00
Visited by:	BA	**Calibration level:**	94
Level pre-calibration	93.8	**Batts replaced?**	N/A
Equipment Removed?			Yes
Notes:	None		

Arcus Consultancy Services 7th Floor, 144 West George Street, Glasgow, G2 2HG

Noise Survey Record Sheet - Photos

Project No.	4188	Location (x of y)	1

Arcus Consultancy Services 7th Floor, 144 West George Street, Glasgow, G2 2HG

Noise Survey Record Sheet

Project No.	4188	**Project Name:**	Coylton
Location (x of y)	2	**Installed By:**	ET
Lat/Long	55.44316, -4.42769	**Location Name**	Position 2
Start Date	08/06/2021	**Start Time**	1242

Equipment Details	**Make/Model**	**Serial No.**
Sound Level Meter:	Rion NL-52	7709258
Calibrator:	Rion NC-74	34104515
Source of Equipment:		Arcus
Meter Timestamp (Start/End, GMT/BST):		Start BST

Description of Sound Sourc	SW corner of field
Distance from façade::	>>10m
Noise sources observed:	gusts in trees, road traffic, low rumble from town direction,
Weather Conditons:	dry, 8 oktas, occasional gusts from SW
Additional notes:	48-hour measurement

Installation (Visit 1)

Date:	08/06/2021	**Time:**	1242
Filename:	301	**Calibration level:**	94
Range setting:	20-110	**Meas. period:**	15min
Freq weighting:	A	**Weather Station:**	No
Lp Logging?	Yes (100 ms)	**Audio / Octave?**	Yes (1/3 Octave)
Notes:	48-hour measurement		

Visit 2

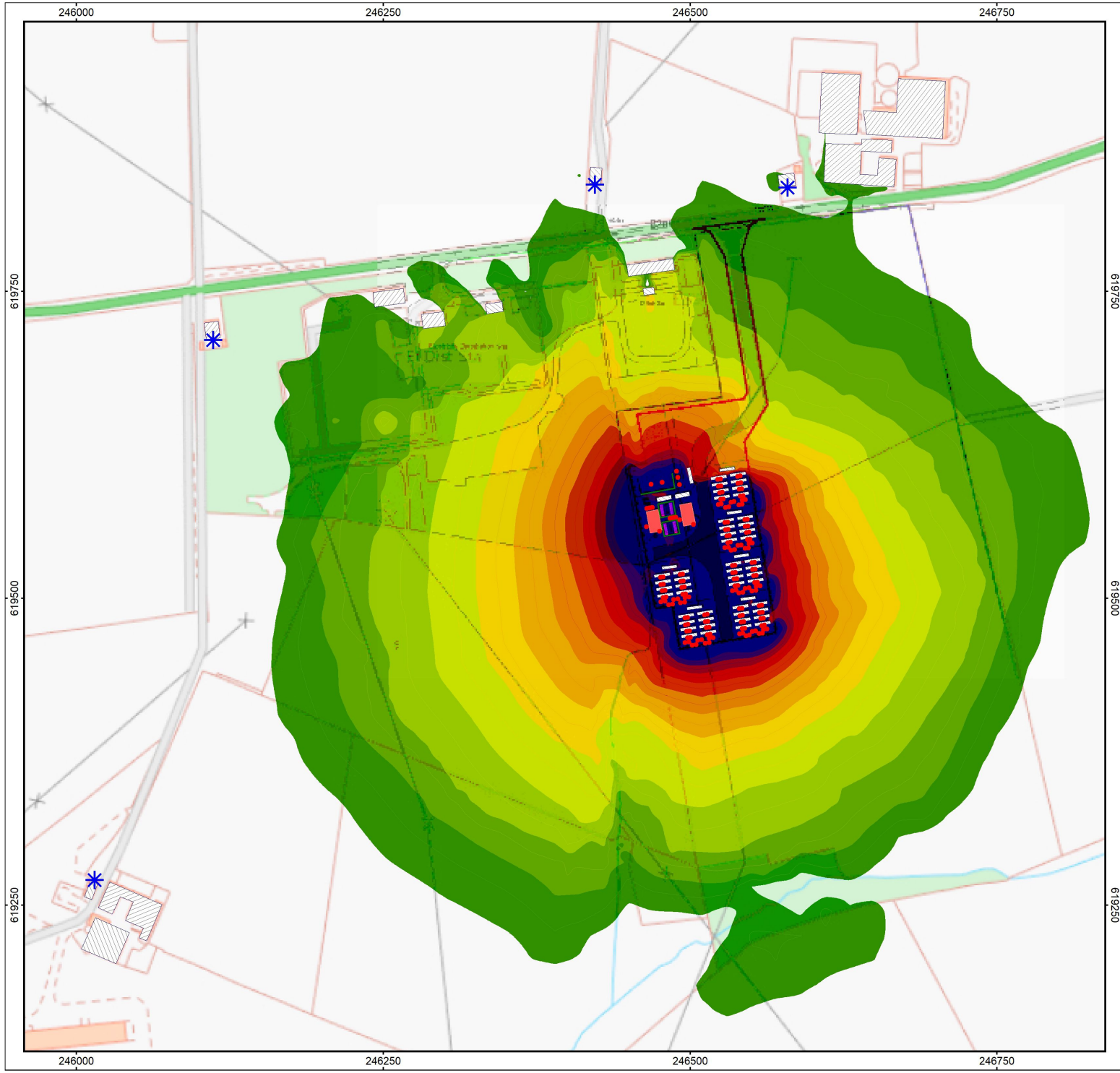
Date:	10/06/2021	**Time:**	1230
Visited by:	BA	**Calibration level:**	94
Level pre-calibration	94	**Batts replaced?**	N/A
Equipment Removed?			Yes
Notes:	None		

Arcus Consultancy Services 7th Floor, 144 West George Street, Glasgow, G2 2HG

Noise Survey Record Sheet - Photos

Project No.	4188	Location (x of y)	1

APPENDIX 3: NOISE GRID MAP



Customer: Statkraft
Project: Coylton BESS
Project-No. 4188

Appendix

3

Revised_V3_NoiseMap
Result number 13
Calculation in 1.5 m above ground

Project engineer: BA
Created: 01/10/2021
Processed with SoundPLAN 8.1, Update 27/04/2020

Specific Levels
in dB(A)

< 36
36 - 38
38 - 40
40 - 42
42 - 44
44 - 46
46 - 48
48 - 50
50 - 52
52 - 54
54 - 56
56 - 58
>= 58

Signs and symbols

- Main building
- Wall
- Point receiver
- Point Source
- Area Source
- Industrial building/Roc
- Plant Source

N

Length scale 1:3143
0 25 50 100 150 200 m

ARCUS

G:\Projects\4188 Coylton Energy Management\Noise\Model\4188 Coylton BESS_AM\NoiseMap_V2.sgs