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BRIEF FOR CONSULTANCY:

To undertake a noise impact assessment of the proposed new Battery Energy Storage Scheme (BESS).

Noise Impact Assessment, BESS, Flushing, Peterhead

Technical Report No. R-10011B-ST1-EK
23rd June 2025

PREPARED FOR:

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RMP is a consulting division of Edinburgh Napier University.

Contents

1.0 Introduction

1.1 RMP have been instructed by Harmony FL Ltd to undertake an early-stage noise impact assessment for the proposed Battery Energy Storage Scheme (BESS) at Flushing, Peterhead.

1.2 This Noise Impact Assessment is prepared and submitted on behalf of Harmony FL Ltd. ('the Applicant') and in support of an application for consent under S36 of the Electricity Act 1989 ('the application') and also comprises a request that Scottish Ministers give a direction under section 57(2) of the Town and Country Planning (Scotland) Act 1997 that planning permission for the development be deemed to be granted. It addresses matters referred to in Schedule 9 to the Electricity Act, to development plan and policy guidance and to consideration of material matters.

1.3 The application comprises land within Aberdeenshire Council Area – 20.72ha ('Application Site').

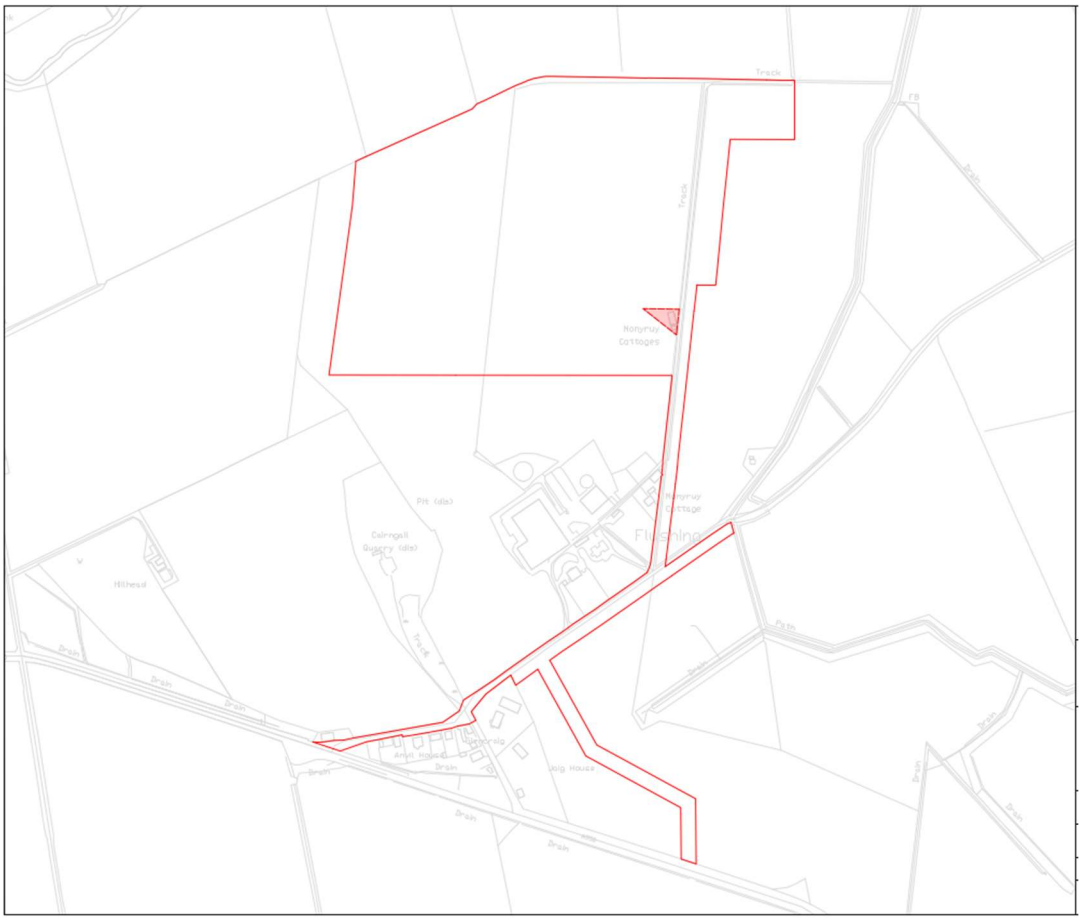

Figure 1 Site Location- Extract of Location Plan

1.4 The description of the proposed development which is the subject of this application is as follows:

1.5 ‘Construction and operation of a 400MW Battery Energy Storage System (BESS) with associated infrastructure including, access roads, sub-station buildings, supporting equipment, fencing, drainage infrastructure and landscaping.’ at Land North of Longside Road, Flushing, Peterhead (GR: 405524, 847560).

1.6 This noise impact assessment is part of a suite of documents submitted with the application, as outlined below. These supporting documents are in addition to the formal application documents comprising the accompanying plans, sections, and elevations. The full suite of supporting documents is as follows:

- Planning Design and Access Statement (PDAS)
- Community Wealth Building Plan (CWBP)
- Pre-Application Consultation Report (PACR)
- Confidential Ecological Survey Report [note, contains sensitive information]
- Confidential Protected Species Report [note, contains sensitive information]
- Archaeological Desk-Based Assessment (ADBA)
- Landscape and Visual Impact Assessment (LVIA) and Landscape Strategy
- Noise Impact Assessment (NIA)
- Flood Risk & Drainage Assessment Report (FRDAR)
- Fire Water Management Plan (FWMP)
- Private Water Supply Impact Assessment
- Topographical Surveys
- Construction Traffic Management Plan
- Transport Statement
- Battery Safety Management Plan (OBSMP)

1.7 The Electricity Works Environmental Impact Assessment (Scotland) Regulations 2017 are also relevant to the proposal as the proposal comprises development falling within Schedule 2 of those Regulations. A Screening request has been submitted to the ECU and the Decision was received on 17th March 2025. It confirmed that, “Scottish Ministers adopt the opinion that the proposal does not constitute EIA development and that the application submitted for this development does not require to be accompanied by an EIA report.” (Emphasis Added)

1.8 The purpose of this report is to predict the sound generated by the proposed BESS installation at nearby noise sensitive receivers and assess the impact of

the sound using guidance proposed by the local authority. Where exceedances of local authority guidance are present mitigation advice is to be provided.

1.9 Figure 2 below provides the site location, with the nearest noise sensitive receivers indicated.

Figure 2: Proposed BESS Development Site and Nearest Noise Sensitive Receivers

1.10 Noise sources associated with a BESS development include inverters, primary and secondary transformers and BESS battery units.

1.11 RMP have agreed verbally with the local authority that *'BS 4142-2014: Methods for rating and assessing industrial and commercial sound'* guidance should be used to assess noise impact as well as a secondary NR20 criteria inside the nearest noise-sensitive receptors with their windows open for ventilation.

1.12 The report details the findings from the site noise measurement survey, noise propagation mapping of the proposed noise sources, and outcomes from the early-stage noise impact assessment.

2.0 Relevant planning guidelines

2.1 Current guidance for local authorities with regard to noise affecting planning matters is given in the Scottish Government's PAN 1/2011 "*Planning and Noise*" document. Further technical guidance is given in the accompanying Technical Advice Note (TAN): "*Assessment of Noise*".

2.2 Paragraph 15 of PAN 1/2011 gives the following advice:
"*Issues which may be relevant when considering noise in relation to a development proposal include:*

- *Type of development and likelihood of significant noise impact,*
- *Sensitivity of location (e.g. existing land uses, NMA, Quiet Area),*
- *Existing noise level and likely change in noise levels,*
- *Character (tonal, impulsivity etc), duration, frequency of any repetition and time of day of noise that is likely to be generated, and*
- *Absolute level and possible dose-response relationships e.g. health effects if robust data available.*"

2.3 Paragraph 19 recommends that in order to assist in the preparation and consideration of planning applications, noise impact assessments may be requested by the planning authority to: "*demonstrate whether any significant adverse noise impacts are likely to occur and if so, identify what effective measures could reduce, control and mitigate the noise impact.*"

2.4 Other than example assessments, PAN 1/2011 and TAN do not suggest criteria to employ for the noise assessments, but rather delegate this task to the planning authorities.

BS 4142-2014: Methods for rating and assessing industrial and commercial sound

2.5 The assessment of commercial noise, associated with the proposed development, affecting the existing residential properties is undertaken in accordance with BS 4142:2014+A1:2019: 'Methods for rating and assessing industrial and commercial sound'.

2.6 The standard details methods to measure the existing sound environment and to determine rating levels for the noise sources being introduced. It also defines the following descriptors:

Ambient Sound	Totally encompassing sound in a given situation at a given time usually composed of sound from many sources near and far.
Residual Sound	The ambient sound remaining at a given position in a given situation when the specific noise source is suppressed to a degree such that it does not contribute to the ambient sound.
Background Sound Level, $L_{A90,\,T}$	The A-weighted sound pressure level of the residual sound at the assessment position that is exceeded for 90 % of a given time interval, *T*, measured using time weighting, *F*, and quoted to the nearest whole number of decibels.
Specific Sound Source	The noise source under investigation for assessing the likelihood of complaints.
Rating Level, $L_{Ar,\,Tr}$	The specific sound level plus any adjustment for the characteristic features of the sound.
Reference Time Interval, T_r	The specified assessment interval defined as 1 hour during the daytime (07:00 – 23:00 hrs) and 15 minutes during night-time (23:00 – 07:00 hrs)

2.7 Conducting an assessment in accordance with BS 4142 involves measuring the background sound level at a position representative of the residential dwelling whilst the subject commercial sound is not present. This value is then compared with the predicted receiver rating level; which is the specific sound level generated by the proposed source, corrected if appropriate to allow for the character of the sound. The difference between the two is calculated so as to give an assessment level, which is used to indicate the likelihood of adverse impact, depending on the context.

2.8 BS 4142 suggests that, in general, a difference of around + 5 dB or more is likely to be an indication of adverse impact, depending on the context. A difference of around + 10 dB or more is likely to be an indication of significant adverse impact, depending on the context. Where the rating level is below the background sound level, this is an indication of low impact, depending on the context.

Absolute Criteria

2.9 From research undertaken on the planning portal for Aberdeenshire Council and verbal communications with the local authority, other BESS Noise Impact Assessments have been assessed against an absolute NR 20 criteria indoors with windows open. The NR20 criteria is shown below in Table 1.

Table 1. Octave band sound pressure levels corresponding to NR20 (dB re 2 x 10^{-5} Pa)

	63	125	250	500	1k	2k	4k
NR20	51.3	39.4	60.6	24.3	20	16.8	14.4

3.0 Existing Noise Environment

3.1 An external ambient sound survey has been undertaken close to the curtilage of the nearest identified residential premises indicated in Figure 2 as Monyruy Cottages, whilst currently in residential use, this dwelling is within the landowner's control who have confirmed it will be vacant at time of the construction of the BESS installation.

3.2 The acoustic survey was undertaken between 21/06/24 to 27/06/24.

3.3 The sound parameters presented are as follows:

- $L_{Aeq,T,}$ the average A-weighted sound level over each measurement period, T.
- $L_{A90,T}$, the A-weighted sound level exceeded for 90% of the measurement period.

3.4 The reference time period (T) for the measurements was 1 hour for daytime (0700 – 2300hrs) and 15 minutes for night-time. We expect night-time to be the most sensitive for noise exposure and is therefore the focus of the background noise calculations and noise impact assessment.

3.5 Immediately prior to the measurement, the sensitivity of the sound level meters was checked using an acoustic calibrator. No significant deviation from the calibration level of 93.9 dB re 2 x 10^{-5} Pa at 1000 Hz was detected. The microphone of the sound level meter was fitted with a windshield and positioned approximately 1.4 m above the local ground level. Equipment details are provided in Appendix A.

3.6 Originally the nearest noise sensitive receiver was identified as Monyruy Cottages directly to the south of the proposed development. Whilst currently in residential use, this dwelling is within the landowner's control who have confirmed it will be vacant at time of the construction of the BESS installation and therefore is no longer considered a noise sensitive receiver. However, background noise was measured at this location as it was anticipated to be the most affected NSR at the time of measurement.

3.7 Weather conditions during the survey period varied. A weather station was installed at Monyruy Cottages. Noise measurement periods were removed where precipitation was present or where wind gusts were over 5m/s, and therefore the survey methodology is in compliance with BS 7445 'Description and measurement of environmental sound'.

3.8 The measurement results at Monyruy Cottages are presented in Figure 3. This is expected to be representative of the background noise for all of the noise sensitive receivers covered in this report.

3.9 Distant road traffic noise from the local roads were all audible. Birdsong is also diurnal and present. Also present is intermittent agricultural noise from the nearby farm, including vehicle movements.

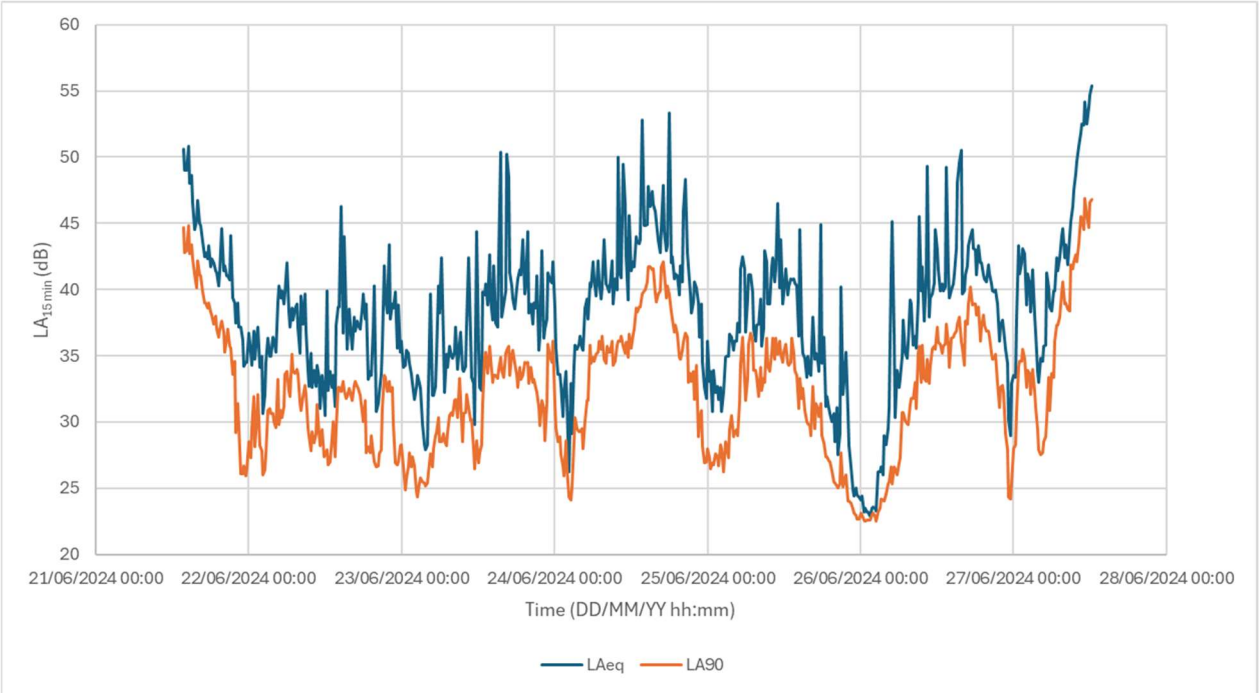

Figure 3: Measurement Results at Monyruy Cottages, 15min periods

3.10 The frequency of occurrence distribution providing modal analysis of the measured night-time background noise levels ($L_{90,15mins}$) of the weekend period, is provided in Figure 4 below.

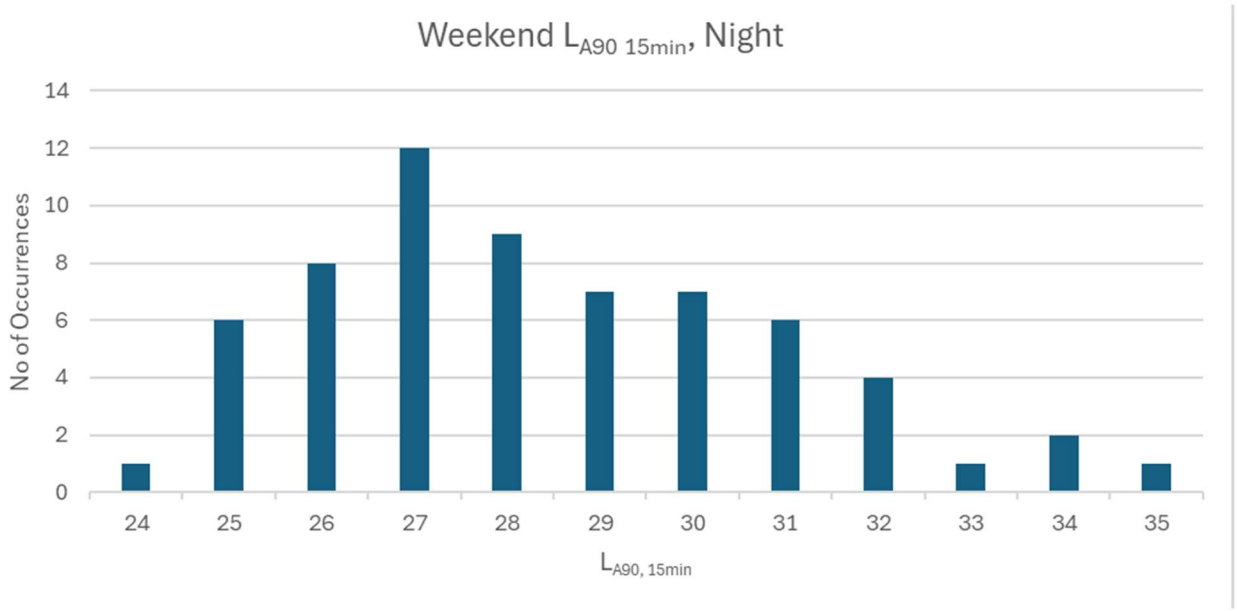

Figure 4: Monyruy Cottages (LA90,15min) Measurement Distribution Results

3.11 Representative night-time background noise measurements for use within the assessment is therefore 27 dB $L_{A90,15mins}$.

4.0 Noise Source Details and Prediction

4.1 To assess the likely noise impact from the BESS development proposals, a noise modelling exercise has been undertaken considering the expected noise generating plant.

4.2 The site layout drawings are provided for illustrative purposes and have been replicated at the subject BESS site. Figure 5 below shows the current layout iteration.

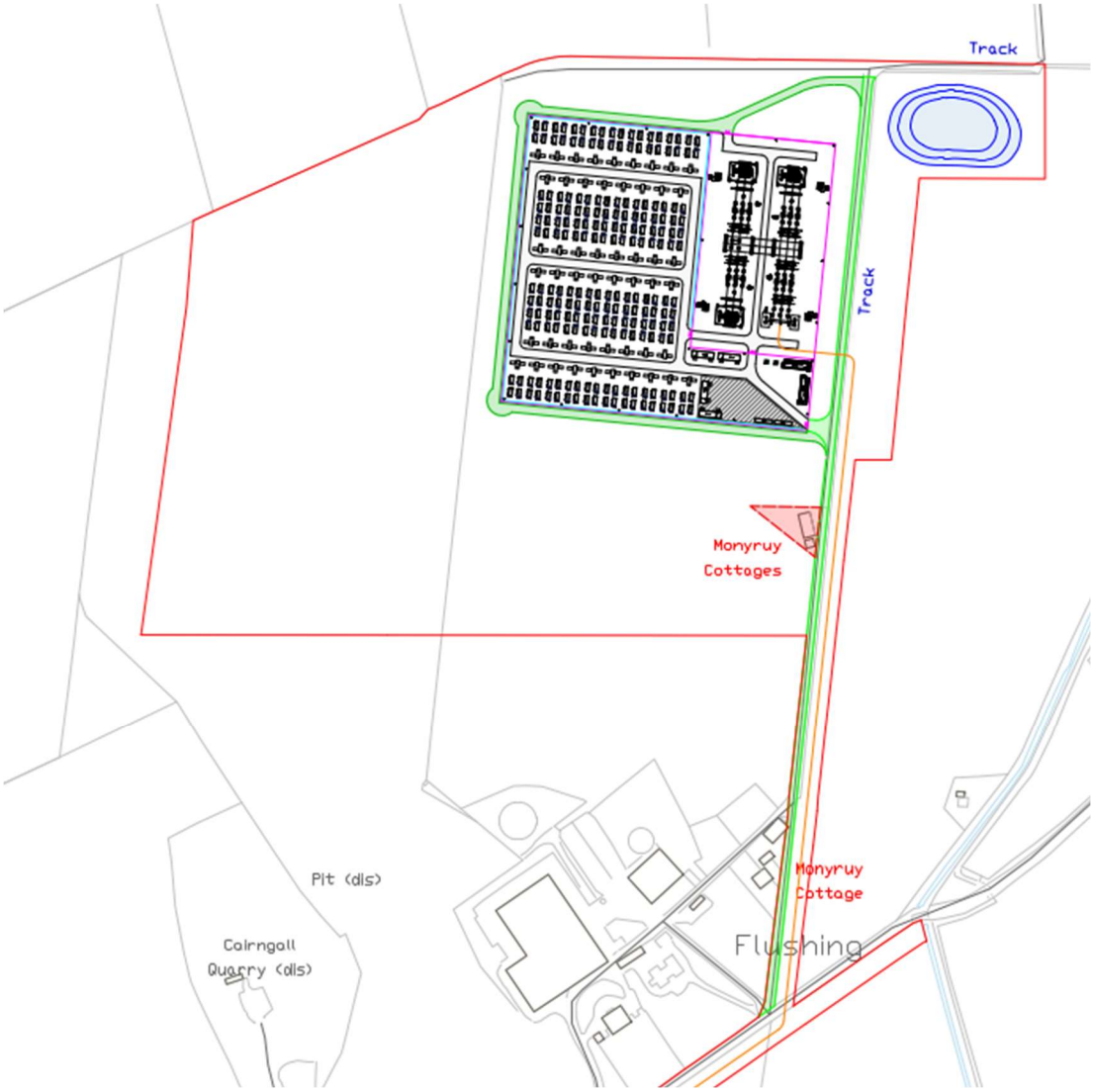

Figure 5: BESS development proposal

4.3 Details of the noise generating items of plant used in all scenarios are provided in Appendix B.

4.4 The source heights are assumed based on technical schematics from the manufacturer unless stated otherwise by manufacturer technical documentation.

4.5 **Attenuation Model and Source Location**

4.6 To predict the noise levels at the noise sensitive receivers, Cadna A Pro (Version 209.5501) noise modelling software was used. Cadna A predicts the attenuation between noise sources and receivers using the methodology laid out in ISO 9613-2 *'Attenuation of Sound During Propagation Outdoors, Part 2: General Method of Calculation'.*

4.7 The parameters in the model were set as follows:

- Temperature was assumed to be 10˚C, humidity was 70% and no wind.
- Where relevant, all buildings were reflective and applied a low absorption coefficient to represent a worst-case scenario.
- Set to local ground conditions from areal imagery (e.g. G=1.0 soft ground and G=0.5 mixed ground, G=0 hard ground)
- Up to 3rd order reflections were calculated as is typical practice.

4.8 No mapping data is available for the heights of the buildings. All buildings are assumed to be 3m high. The reflection loss of all buildings was assumed to be that of a reflective façade, 0.5dB reflection loss.

4.9 The BESS proposal has a 4.5m acoustic barrier around the BESS compound, this is shown in Figure 6 and Appendix D. Barrier heights are relative to the compound ground level. Ground levels were taken from an AutoCAD Drawing Ref: *ACAD-Initial Earthworks_11-Model.dwg* which was imported into the noise model.

4.10 The inside face of the acoustic barrier should be absorbative (Class A or B) to prevent reflections effectively elevating the source. RMP can review barrier specification proposals upon development.

4.11 RMP have included the below sources in the model, heights given from local ground level.

- 204 CATL EnerC+306 BESS units (at height 2.8m)
- 102 Freemaq PCSM/K Gen 3 Storage Inverters with Noise attenuation kits (at height 1m)
- 51 4.2MVA MV/LV Transformer KNAN Transformer (at height 2.5m)
- 1 Primary Transformer Unit (400kV) (at height 4.25m)

4.12 A 3D excerpt from the model is shown in Figure 6. Octave band noise source details can be found in Appendix B.

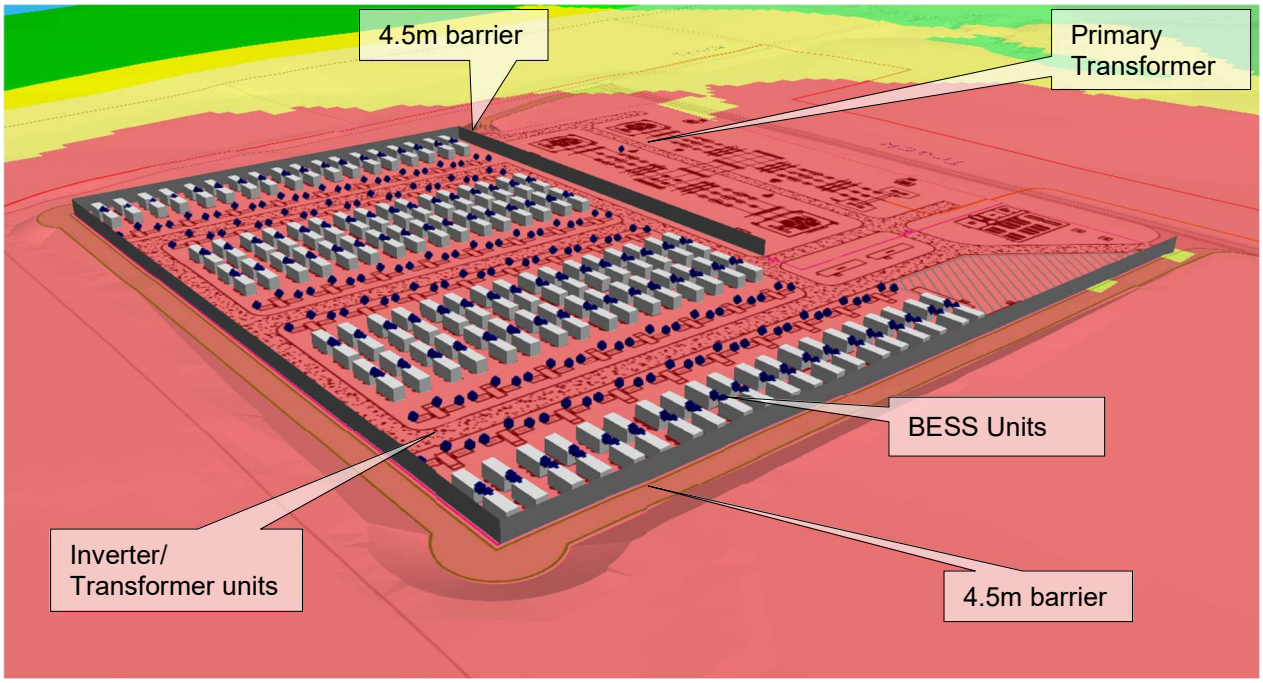

Figure 6: BESS Compound Source Layout

4.13 Capacity Scenarios

4.14 As the noise source data for transformers/Inverters and BESS units is relative to fan duty it is important to provide a realistic operational scenario to be modelled.

4.15 In order to estimate the typical operational capacity of the BESS units, RMP requested the BESS unit fan duty data from an existing BESS installation. Harmony Energy provided data from a 200 MW Tesla BESS site in Pilswood with data covering 4th of July 2023 to the 12th of July 2023. It was confirmed that while the capacity of this installation was higher than the subject site, the fan duty would still be representative when scaled down.

4.16 It is also notable that this data is from July where the climate in Pilswood is at its warmest, and therefore the fan duty is likely to be a worst-case operational scenario due to the increased cooling requirements.

4.17 It is noted that 79.5% fan duty is the maximum operational duty for the *CATL EnerC+306* BESS units. As our capacity model uses Tesla BESS units which can operate to 100% fan duty, we have assumed that these fan duties are equivalent. For example, where our capacity model shows 100% the CATL fan duty is 79.5% and where the capacity model shows 80% the CATL fan duty is 60%.

4.18 After processing the above data RMP have proposed the following scenarios;

Scenario 1 – **Worst Case** – Calculated by identifying a 15 minute night-time period with the highest BESS unit activity. This was found to be: 38% of BESS units running at 100%, 8% running at 80%, 5% running around 20%, with the remaining units at a fan duty of 0%.

For the subject site this equates to:

- 76 out of 204 BESS units running at 79.5% fan duty
- 16 out of 204 BESS units running at 60% capacity

- 10 out of 204 BESS units running at 40% capacity
- Remaining BESS units 0% fan duty
- All Transformers operational
- All Inverters running at 60% capacity

Scenario 2 – Typical Fan Duty - Calculated by averaging the capacity over the entirety of the BESS units and identifying the night-time period (15mins) where the average capacity was highest. This was found to be 39%. Inverter capacity data is only provided down to 60%, which will give a conservative estimation of the noise levels.

For the subject site this equates to:

- All 204 BESS units running at 40% fan duty
- All Transformers operational
- All Inverters running at 60% capacity

5.0 Assessment of Noise Impact

5.1 The quantitative element of a BS 4142 involves measuring the background sound level at a position representative of the residential dwelling whilst the subject commercial sound is not present, and comparing this value with the predicted receiver rating level; which is the specific sound level generated by the proposed source. The difference between the two is calculated so as to give an assessment level, which is used to indicate the likelihood of adverse impact, depending on the context.

5.1 In carrying out a BS 4142 assessment, corrections can be applied to the noise source should they have discernible characteristics when considered from the receiver location.

5.2 The noise from the BESS facility at the NSRs is expected to be broadband and continuous at NSRs, therefore no character corrections have been applied.

5.3 Table 2 outlines the BS 4142 assessment outcome at each receiver for each modelled capacity. Full 4142 assessment outcomes for each scenario and receiver ban be found in Appendix B.

Table 2: Night-time BS 4142 Assessment of BESS Noise, Existing Dwellings, 4.5m noise barrier (dB re 20 µPa)

Capacity	NSR 1	NSR 2	NSR 3
Worst Case	B	C	C
Typical	C	C	C

5.4 The Level Difference outcome from the assessment table above provides the following assessment outcome, *typically, the greater this difference, the greater the magnitude of the impact;*

A) A difference of around +10 dB or more likely to be an indication of a significant adverse impact, depending on the context.

B) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

C) Where the rating level does not exceed or is around to the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

5.5 Table 2 shows low or no impact for the typical operational scenario. For the worst-case scenario low or no impact is also shown, except for NSR 1 where 'an indication of adverse impact' is shown in the worst-case scenario dependent of the context. It is important to note that the worst-case scenario is a rare occurrence as is discussed as part of the context section below.

5.6 Full noise maps can be found in Appendix D. Noise map colour coding is relative to the BS 4142 assessment outcomes. Note the grid colours do not include calculated reflections within the BESS compound due to the number of sources and reflective surfaces exponentially increasing the calculation time. All single figure and octave band results at receivers are free field levels that include reflections from within the BESS compound.

5.7 **BS 4142 Context and Discussion**

5.8 The following discussion considered the context of the BESS worst case noise levels modelled at NSR 1.

5.9 In considering the context, the existing dwellings are in an agricultural setting with distant road traffic noise and seasonal short-term agricultural noise-generating activities. There are no sources of continuous noise, although the field of view over the road traffic noise sources would likely slightly elevate the background noise climate, with the data showing potential for higher night-time periods. Regardless, the night-time background noise levels are low.

5.10 As the background noise was measured at Monyruy cottages which is no longer considered an NSR it is possible that background noise is marginally higher at

NSR 1 due to its proximity to the farm and B roads; this would likely result in a lower BS4142 assessment outcome at NSR 1.

5.11 During daytime and evening hours it is likely the noise from the proposed BESS will be masked by road traffic noise from surrounding roads as well as other typical rural noise sources.

5.12 Considering the operational scenarios modelled, the worst-case Scenario 1, is representative of the fan duty during a single minute over a six-night period in summer. The more typical operational scenario and assessment outcomes during the night, is provided by Scenario 2.

5.13 The predicted receiver levels (L_{Aeq}) are also low, and in such circumstances noise impact may be better quantified by comparison to fixed noise criteria, as advised in BS4142 (see excerpt below).

"Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night."

5.14 Plant noise when assessed inside the residential premises would comfortably meet the fixed noise criteria such as the local authority suggested NR20 with a conservative estimation of an open window, as shown in Tables 3 & 4 below.

5.15 Due to a combination of the conservative approach to background noise measurement and processing, estimation of the source operational capacity, predicted internal nighttime levels and the general context of the residual noise environment RMP would propose that there would be 'low or no impact' on nearby noise sensitive receivers from the proposed BESS development with the inclusion of a 4.5m absorbative barrier around the BESS development.

5.16 NR 20 Internal Levels

5.17 Tables 3 & 4 below shows the predicted internal noise level at NSR 1 relative to the NR20 absolute criteria. NSR 1 was selected at 100% capacity as a worst-case scenario.

Table 3. Predicted internal BESS noise level Worst Case, NSR 1, dB (dB re 2 x 10-5 Pa)

	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
Predicted L_{Zeq} at façade (including reflections)	34.1	41.8	30.1	28.9	28.4	22.8	10.1
Open Window Attenuation	-10	-10	-10	-10	-10	-10	-10
Predicted L_{Zeq} internal (including reflections)	24.1	31.8	20.1	18.9	18.4	12.8	0.1
NR20 Criteria	51.3	39.4	60.6	24.3	20	16.8	14.4
Exceedance	-	-	-	-	-	-	-

Table 4. Predicted internal BESS noise level Typical, NSR 1, dB (dB re 2 x 10-5 Pa)

	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
Predicted L_{Zeq} at façade (including reflections)	34.2	41.8	29.5	26.6	24.3	18.5	7.2
Open Window Attenuation	-10	-10	-10	-10	-10	-10	-10
Predicted L_{Zeq} internal (including reflections)	24.2	31.8	19.5	16.6	14.3	8.5	-2.8
NR20 Criteria	51.3	39.4	60.6	24.3	20	16.8	14.4
Exceedance	-	-	-	-	-	-	-

5.18 Tables 3 & 4 show that the predicted noise levels for the units during both operational scenarios inside the most affected noise sensitive receiver are below the NR20 secondary (internal) criteria with an open window.

5.19 Uncertainty

5.20 At every stage of any noise impact assessment is inherent uncertainty which we try to minimise and manage. We seek to further minimise uncertainty by discussing its potential sources.

5.21 The extended duration background noise measurement survey using calibrated sound monitoring equipment minimises uncertainty. Modal analysis identifies the typical background noise measurement samples for the assessment.

5.22 The processing of fan duty data from an existing BESS site provides an additional degree of accuracy when representing typical BESS operational noise. Two scenarios have been identified using a conservative approach to minimise uncertainty of underestimating noise emissions levels.

5.23 RMP have been provided the proposed topography of the development in a .dwg file which was imported into the noise model giving a higher degree of accuracy to any barrier attenuation predictions between source and receiver.

6.0 Conclusions

6.1 RMP have been instructed by Harmony FL Ltd to undertake an early-stage noise impact assessment for the proposed Battery Energy Storage Scheme (BESS) at Flushing, Peterhead.

6.2 A measurement survey of the existing noise environment was undertaken. A noise impact assessment over two operational scenarios was undertaken relative to the background noise environment (BS 4142:2014+A1:2019) and fixed noise criteria (NR20) has been undertaken for the development proposals.

6.3 A multiple point source method for modelling BESS sound propagation to noise sensitive receivers was adopted, using Cadna A Pro (Version 209.5501) noise modelling software.

6.4 When context is considered with regard to the BS4142 assessment outcomes, RMP would consider the sound from the proposed BESS facility to be of low or no impact on all NSRs.

6.5 The secondary, fixed criterion of NR20 was not exceeded internally at any NSRs for any modelled scenario.

6.6 A 4.5m acoustic barrier will be required to mitigate noise and its location is marked in blue in Appendix D.

6.7 It will be necessary to refine the noise impact assessment as the stated uncertainties relating to the BESS detailed design are clarified.

Prepared by:	Approved by:
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Appendix A: Measurement Equipment

Equipment	Serial No.	Calibration expiry date	Calibration Certificate
RION Sound Level Meter Type NL52 Modular Precision Sound Analyzer running Rion's programs NX-42EX Version 1.3, NX-42WR Version 1.2 and NX-42RT Version 1.2	00810574	08/03/2026	TCRT24/1211
RION Pre-amplifier Type NH-25	11117	08/03/2026	TCRT24/1211
RION Condenser Microphone Type UC-59	19967	08/03/2026	TCRT24/1211
Brüel & Kjær Calibrator type 4230	1685303	07/11/24	TCRT22/1691
Lufft WS600 weather station	336.1120.07 01.234	-	-

Appendix B: Noise Source Data

BESS sound power levels, dB (dB re 10^{-12} W)										
	Num	Height	LWA dB(A)	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
EnerC+306 BESS 79.5% No 'Sound Cover' (maximum fan duty)	204	2.8	82.8	55.5	66.1	76.7	77.3	79	76.1	72.2
EnerC+306 BESS 60% No 'Sound Cover'	204	2.8	74.9	59.8	63.6	68.7	71	70.7	68.2	63.8
EnerC+306 BESS 40% No 'Sound Cover'	204	2.8	69.5	61.9	64.1	67.2	67.1	65.2	61	56.3
Freemaq PCSM/K Gen 3 Storage Inverters with Noise att kit 60%	102	1	81	79.6	88.2	82.4	77.1	74.3	71.3	69.6
4.2MVA MV/LV Transformer KNAN Transformer	51	2.5	67.4	70*	72*	67*	67*	61*	56*	51*
Primary Transformer 400kV	1	4.25	68.4**	71**	73**	68**	68**	62**	57**	52**

* Assumed spectral data (Strutt *IEC 551:1987 (AS2374.6)*)

** Assumed noise source from empirical data (Strutt *IEC 551:1987 (AS2374.6)*)

Appendix C: BS 4142 Assessment Summary

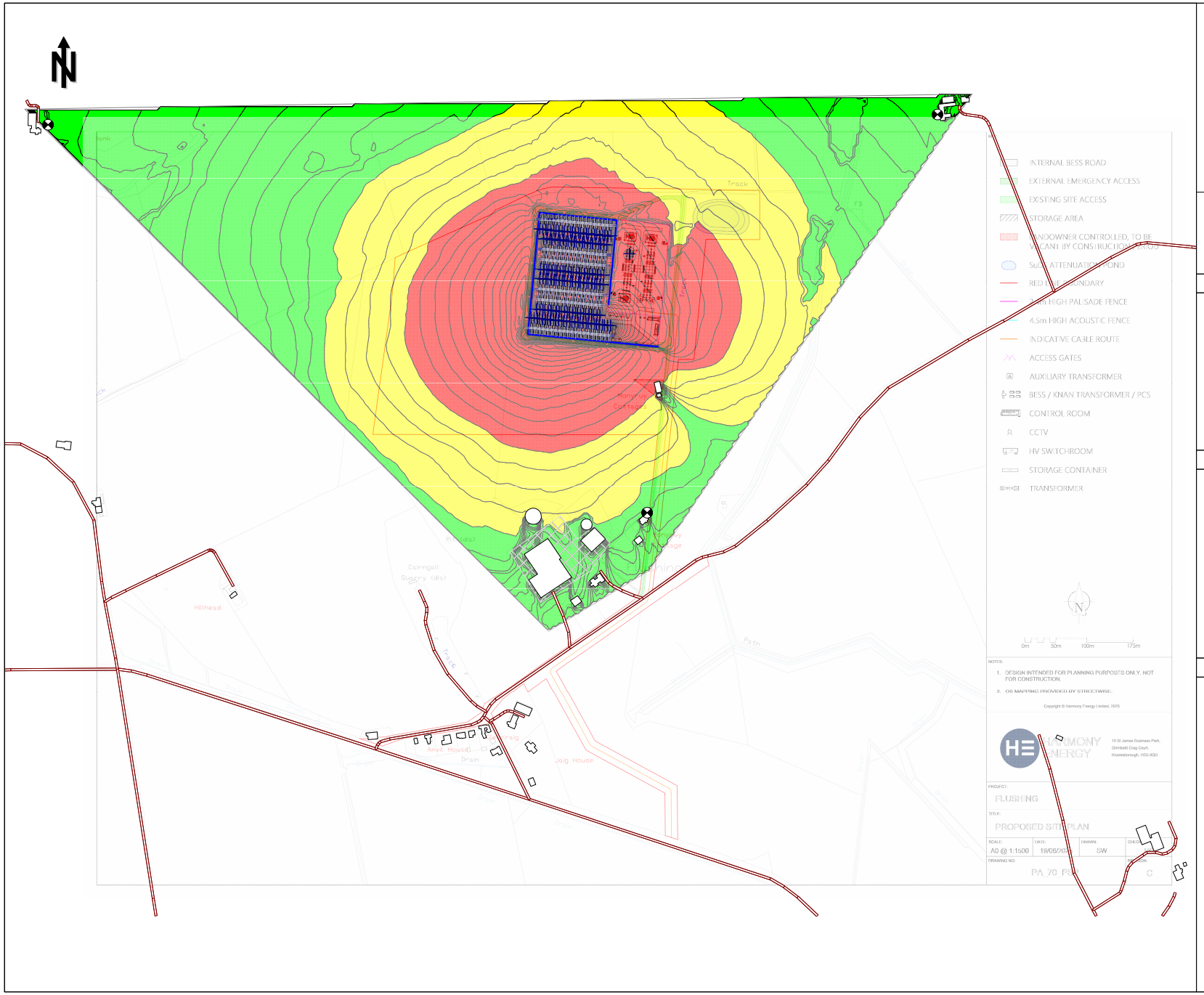
Night-time, BS 4142 Assessment of BESS Noise, Worst Case Scenario (dB re 20 µPa)			
Period of Assessment	**NSR 1**	**NSR 2**	**NSR 3**
Predicted Specific Sound Source at Receiver, dB(A)	32.7	29.7	24.2
Rating level, $L_{Ar,\ Tr}$ (dB)	32.7	29.7	24.2
Background noise level, L_{A90} (dB)	27	27	27
Level Difference	5.7	2.7	-
Assessment Outcome	B	C	C

Night-time BS 4142 Assessment of BESS Noise, Typical Scenario (dB re 20 µPa)			
Period of Assessment	**NSR 1**	**NSR 2**	**NSR 3**
Predicted Specific Sound Source at Receiver, dB(A)	30.4	27.2	22.5
Rating level, $L_{Ar,\ Tr}$ (dB)	30.4	27.2	22.5
Background noise level, L_{A90} (dB)	27	27	27
Level Difference	3.4	0.2	-
Assessment Outcome	C	C	C

Appendix D: CADNA A Model Output

Noise Map grid at 1.8m height

Map Grid Colour Legend (dB re 20 µPa)			
Lower Noise Level (dB)	**Upper Noise Level (dB)**	**Colour**	**4142 Assessment outcome**
0	<31.5	**Green**	**C**
≥31.5	<35.5	**Yellow**	**B**
≥35.5+	-	**Red**	**A**



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Project

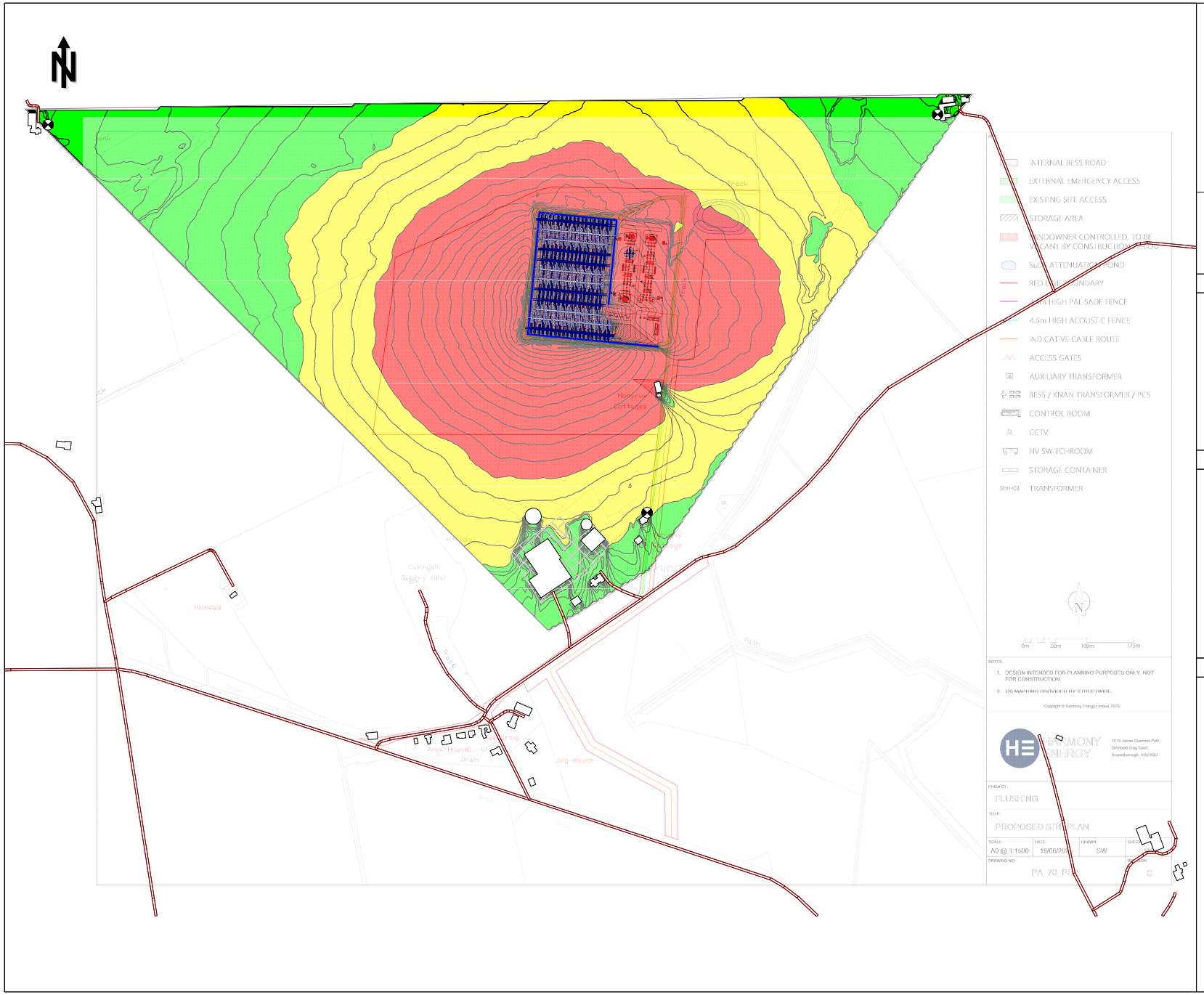
Project: BESS, Flushing, Peterhead
Client: Harmony FL Ltd
Ref: R-10011B-ST1-EK
Date: 23.06.2025
Typical
Night
Map Height: 1.80 m
Receiver Height: 1.80 m

Legend

- Point Source
- Road
- Building
- Barrier
- Receiver
- Calculation Area

Noise Levels Contours (dBA)

- 0.0 <= ... < 31.5
- 31.5 <= ... < 35.5
- 35.5 <= ... < 100.0



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Tel 0345 062 0000

Project

Project: BESS, Flushing, Peterhead
Client: Harmony FL Ltd
Ref: R-10011B-ST1-EK
Date: 23.06.2025
Worst Case
Night
Map Height: 1.80 m
Receiver Height: 1.80 m

Legend

- Point Source
- Road
- Building
- Barrier
- Receiver
- Calculation Area

Noise Levels Contours (dBA)

- 0.0 <= ... < 31.5
- 31.5 <= ... < 35.5
- 35.5 <= ... < 100.0

RMP is part of Edinburgh Napier University, bringing together a wide range of specialist expertise in construction innovation.

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