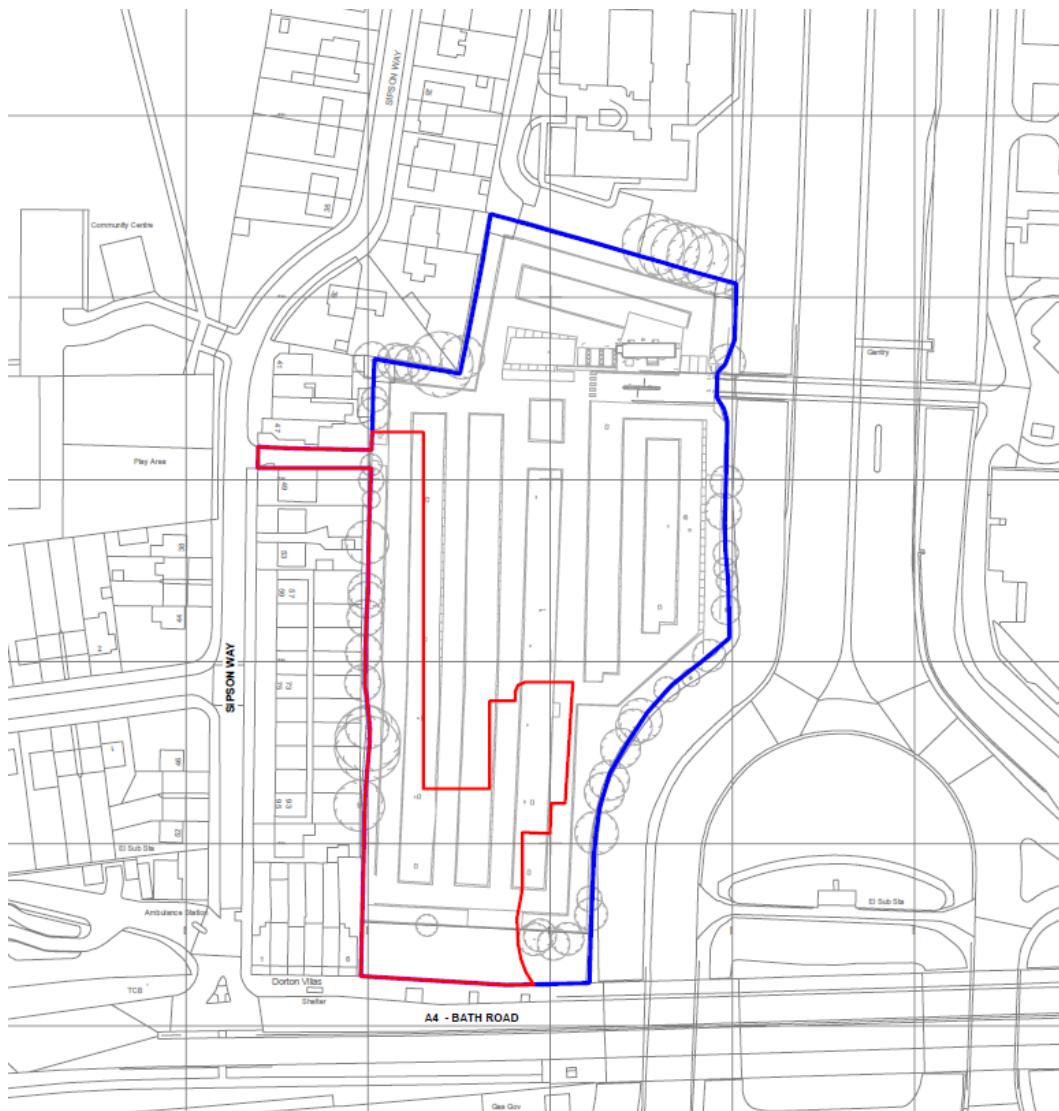


Heathrow Flightpath Car Park

784- B070271



Noise Technical Note

LPH UK 1 LTD

May 1, 2025

DOCUMENT CONTROL

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Document:	Noise Technical Note		
Project:	Heathrow Flightpath Car Park		
Client:	LPH UK 1 LTD		
Project number:	784- B070271		

Revision:	1	Prepared by:	Ravi Godhania Environmental Consultant	
Date:	28/04/2025	Checked by:	Joe Archer Senior Acoustic Consultant	
Status:	First Issue	Approved by:	Dawit Abraham Head of Noise & Acoustics	

1.1 INTRODUCTION

A noise impact assessment (doc. ref; '784-B070271 *Infinium Heathrow Tt Noise Impact Assessment 19Feb25*') was submitted as part of a planning application in support of a full planning application for an electric unit area comprising a Battery Energy Storage System (BESS) and associated infrastructure, on the site at Heathrow Flightpath Car Park, Bath Road, Sipson, UB7 0DU.

This Technical Note has been produced to determine the noise implications to the minor changes to the proposed development, detailed further in Section 1.2 of this note.

It has been predicted that on-site operational noise effects associated with the proposed Development will be within the Lowest Observed Adverse Effect Level (LOAEL), and therefore the development will have a low impact in relation to noise.

This has been determined through the use of industry standard guidance;

- BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings – Code of practice'
- BS4142:2014 'Method for rating industrial and commercial sound'
- World Health Organisations (1999) 'Guidelines for Community Noise'
- IEMA 'Guidelines for Environmental Noise Impact Assessment' (2014)
- London Borough of Hillingdon Local Plan (Adopted 2012)

1.2 PROPOSED DEVELOPMENT

It has been proposed that minor works of an electric unit area comprising a Battery Energy Storage System (BESS) and associated infrastructure be built in the existing car park. **Figure 1** presents the existing site plan whilst **Figure 2** presents the proposed development for comparison.

Figure 1: Existing Site Plan

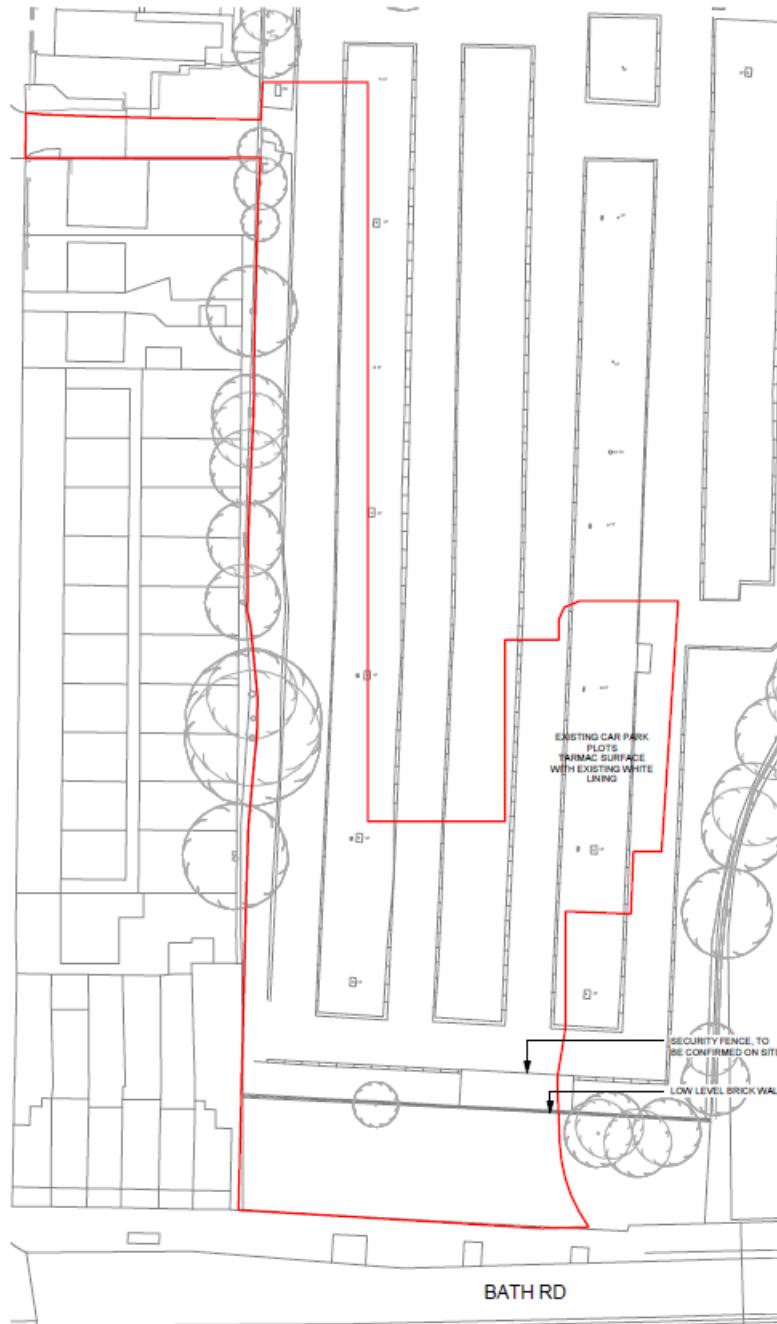
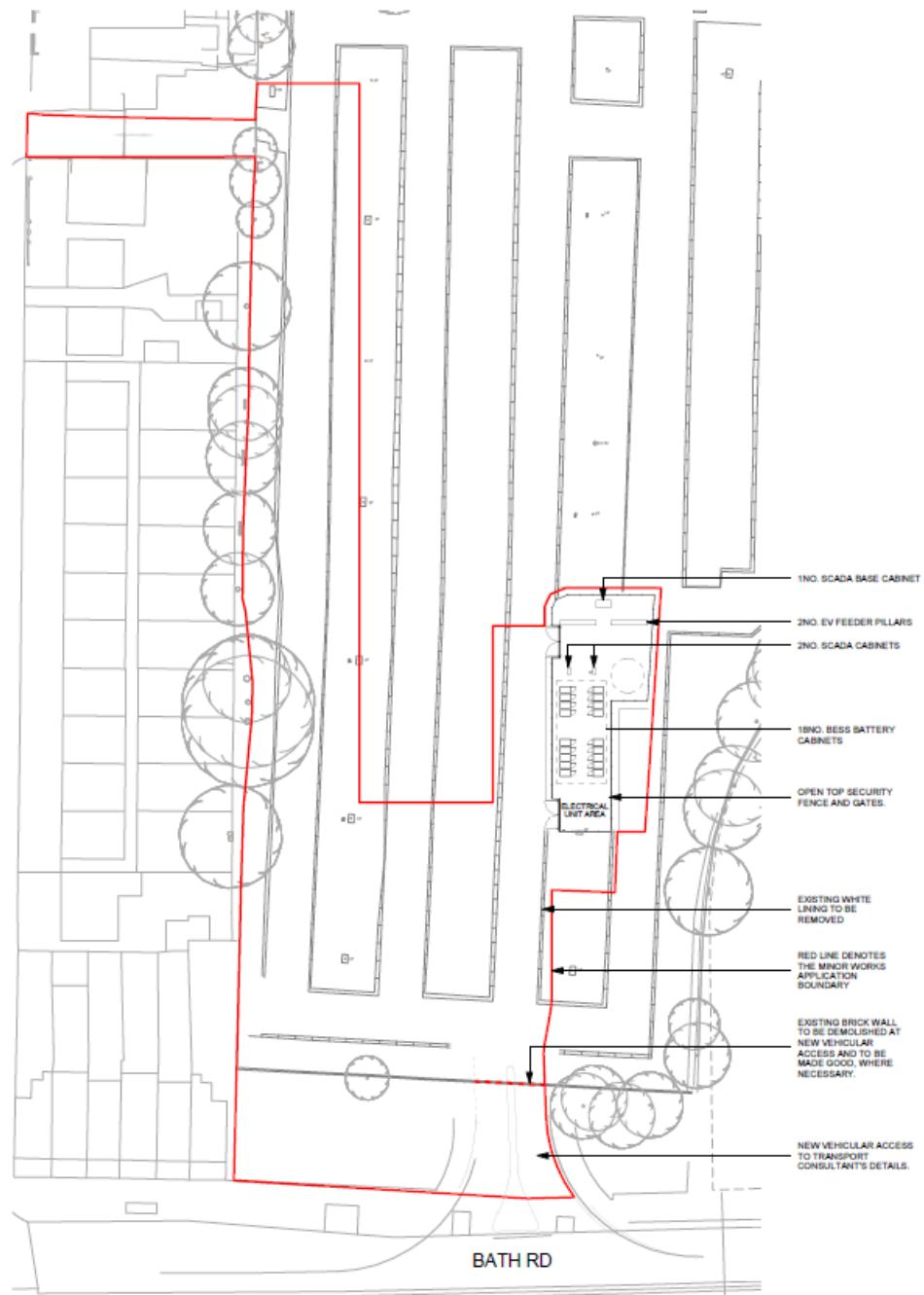


Figure 2: Proposed Development



1.3 LEGISLATIVE CONTEXT

This report is intended to provide information relevant to the local planning authority and their consultees in support of a planning application for the above proposed development. Policy guidance with respect to noise is found in the National Planning Policy Framework (NPPF), published in December 2024. With regard to noise and planning, the NPPF contains the following statement at Paragraph 198:

“198. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- (a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- (b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason [...]”*

“200. Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.

“201. The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.”

*Planning Practice Guidance (PPG): Noise provides further guidance with regard to the assessment of noise within the context of Planning Policy. The overall aim of this guidance, tying in with the principles of the NPPF and the Explanatory Note of the Noise Policy Statement for England (NPSE), is to “**identify whether the overall effect of noise exposure is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.**”*

A summary of the effects of noise exposure associated with both noise generating developments and noise sensitive developments is presented within the PPG and repeated below in **Table 1**.

Table 1: NPPG Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not present	No Effect	No Observed Effect	No Specific Measures Required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No Specific Measures Required
Lowest Observed Adverse Effect Level (LOAEL)			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level (SOAEL)			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

The NPPF, NPSE and PPG do not, however, present absolute noise level criteria which define SOAEL, LOAEL and NOEL which is applicable to all sources of noise in all situations. Therefore, within the context of the Proposed Development, national planning policy and appropriate guidance documents including 'BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings' (2014) and 'BS 4142:2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound' (2014) have been used. Section 2.0 presents the noise level criteria used as a basis of this assessment.

The PPG also states that neither the NPSE nor the NPPF (which reflects the Noise Policy Statement) expects noise to be considered in isolation, separately from the economic, social and other environmental dimensions of the proposed development.

Furthermore, the PPG: Noise identifies at Paragraph: 011 Reference ID: 30-011-20190722 the requirement for developments proposals to incorporate measures to mitigating the impact of noise on residential developments. In particular:

“Noise impacts may be partially offset if residents have access to one or more of:

- a relatively quiet facade (containing windows to habitable rooms) as part of their dwelling;*
- a relatively quiet external amenity space for their sole use, (e.g. a garden or balcony). Although the existence of a garden or balcony is generally desirable, the intended benefits will be reduced if this area is exposed to noise levels that result in significant adverse effects;*
- a relatively quiet, protected, nearby external amenity space for sole use by a limited group of residents as part of the amenity of their dwellings; and/or*
- a relatively quiet, protected, external publicly accessible amenity space (e.g. a public park or a local green space designated because of its tranquillity) that is nearby (e.g. within a 5 minute walking distance).*

1.4 LOCAL & REGIONAL POLICY CONTEXT

The London Borough of Hillingdon Local Plan (Adopted 2012) contains the following policies relating to Noise:

“Hillingdon Local Plan

Policy EM8: Land, Water, Air and Noise

The Council will investigate Hillingdon's target areas identified in the Defra Noise Action Plans, promote the maximum possible reduction in noise levels and will minimise the number of people potentially affected. The Council will seek to identify and protect Quiet Areas in accordance with Government Policy on sustainable development and other Local Plan policies. The Council will seek to ensure that noise sensitive development and noise generating development are only permitted if noise impacts can be adequately controlled and mitigated

Implementation

The Council will implement Policy EM8 by: Setting high standards for reducing land, water, air and noise pollution and resisting amenity and environmental impacts that affect how we enjoy the environment in which we live and work. This includes making sure developments are designed to cope with climate conditions as they change during the development's lifetime.

Policy T4: Heathrow Airport

Recognising the economic importance of the airport to the borough this Hillingdon Local Plan: Part 1- Strategic Policies will support the sustainable operation of Heathrow within its present boundaries and growth in the Heathrow Opportunity Area by facilitating improvements to public transport and cycle links, enhancing the public transport interchange to provide the opportunity for a modal shift from the use of private cars and from short haul air to sustainable transport modes and providing transport infrastructure to accommodate economic and housing growth whilst improving environmental conditions, for example noise and local air quality for local communities.

Implementation

Policy T4 will be delivered through the Local Implementation Plan, partnership working with Transport for London, transport providers and other partners, including the Heathrow Transport Forum. The Council will continue to work with BAA who have identified a significant on-going capital programme to ensure the operational capacity of the airport. The Council will require developers within the Heathrow Opportunity Area to develop a sustainable transport solution that includes public transportation, walking, cycling and as well the use of electric vehicles, low emission vehicles and car clubs.

Policy DMT1: Managing Transport Impacts

Development proposals will be required to meet the transport needs of the development and address its transport impacts in a sustainable manner. In order for developments to be acceptable they are required to:

...have no significant adverse transport or associated air quality and noise impacts on the local and wider environment, particularly on the strategic road network...

Policy DMAV1: Safe Operation of Airports

The Council will support the continued safe operation of Heathrow Airport and RAF Northolt and will consult with the airport operator on proposals in the safeguarded areas.

In consultation with the Airport Operator, the Council will ensure that:

...sensitive uses such as housing, education and hospitals are not located in areas significantly affected by aircraft noise without acceptable mitigation measures.”

1.5 ACOUSTIC CONSULTANTS' QUALIFICATIONS & PROFESSIONAL MEMBERSHIPS

The lead project Acoustic Consultant is Ravi Godhania. The report has been checked by Joe Archer and verified by Dawit Abraham. Relevant qualifications, membership and experience are summarised in **Table 2**.

Table 2: Acoustic Consultants' Qualifications & Experience

Name	Education	Experience in Undertaking Noise Assessments (Start date of working in noise & acoustics)	Attained Associate Membership of the Institute of Acoustics (date)	Attained Membership of the Institute of Acoustics (date)
Ravi Godhania	-	-	-	-
Joe Archer	BSc 2015	June 2016	April 2018	-
Dawit Abraham	BSc 2008 MSc 2010	Oct 2010	Jan 2011	Jan 2015

1.6 ASSESSMENT CRITERIA

In order to enable the assessment of the proposed development in terms of LOAEL and SOAEL, **Table 3** presents equivalent noise levels and associated actions with the target noise level criteria identified. The noise level criteria detailed below have been derived from standards and design guidance:

- BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings – Code of practice'
- BS4142:2014 'Method for rating industrial and commercial sound'
- World Health Organisations (1999) 'Guidelines for Community Noise'
- IEMA 'Guidelines for Environmental Noise Impact Assessment' (2014)
- London Borough of Hillingdon Local Plan (Adopted 2012)

Table 3: Noise Level Criteria and Actions

Noise Sources	Noise Level Criteria	Justification for Effect Level-Action Required
No Observed Adverse Effect Level (NOAEL)		
Fixed plant and equipment located externally or internally with louvered ventilation grilles	Difference between Rating Level ($L_{Ar,T}$) dB and existing background level $L_{A90,T}$ dB is less than or equal to 0dB	<p>Justification for Effect Level: Below low impact threshold in BS4142:2014</p> <p>Action Required: None</p>
Absolute internal noise criteria	<p>Noise levels are below:</p> <p>Living Rooms:</p> <ul style="list-style-type: none"> - 35 dB $L_{Aeq,16hours}$ <p>Kitchens, Dining Rooms, and Studies:</p> <ul style="list-style-type: none"> - 40 dB $L_{Aeq,16hours}$ <p>Bedrooms:</p> <ul style="list-style-type: none"> - 35 dB $L_{Aeq,16hours}$ - 30dB $L_{Aeq,8hr}$ - $L_{AFmax,2min}$ noise levels do not exceed: 45dB L_{AFmax} based on 10th highest $L_{AFmax,2min}$ sample) 	<p>Justification for Effect Level: Less than threshold values in Table 4 in BS8233:2014 and Table 1 in World Health Organisation (1999) Guidelines on Community Noise</p> <p>Action Required: None</p>
Change in noise levels	Increase in ambient $L_{Aeq,T}$ due to contribution from proposed development of ≤ 1 dB.	<p>Justification for Effect Level: Within negligible short-term impact classification range in Table 7.14 in IEMA 2014 guidance Guidelines for Environmental Noise Impact Assessment</p> <p>Action Required: None</p>
Lowest Observed Adverse Effect Level (LOAEL)		
Fixed plant and equipment located externally or internally with louvered ventilation grilles	Difference between Rating Level ($L_{Ar,T}$) dB and existing background sound level $L_{A90,T}$ dB is between 1-4dB.	<p>Justification for Effect Level: Lower rating levels relative to measured background indicate it is less likely for adverse impacts to occur (depending on context).</p> <p>Action Required: Reduce to a minimum the exceedance over 0dB above background threshold through good acoustic design where practicable, or demonstrate contextual reasoning as to why adverse effects are not predicted</p>
Absolute internal noise criteria	<p>Noise levels are between:</p> <p>Living Rooms:</p> <ul style="list-style-type: none"> - 35-40 dB $L_{Aeq,16hours}$ <p>Kitchens, Dining Rooms, and Studies:</p> <ul style="list-style-type: none"> - 40-45 dB $L_{Aeq,16hours}$ 	<p>Justification for Effect Level: Exceed threshold guidelines in Table 4 of BS8233:2014 and World Health Organisation (1999) Guidelines on Community Noise by no greater than</p>

Noise Sources	Noise Level Criteria	Justification for Effect Level-Action Required
	<p>Bedrooms:</p> <ul style="list-style-type: none"> - 35-40 dB$L_{Aeq,16hours}$ - 30-35dB $L_{Aeq,8hr}$ - $L_{AFmax,2min}$ noise levels do not exceed 45dB L_{AFmax} based on 10th highest $L_{AFmax,2min}$ sample) 	<p>5dB to achieve <u>reasonable internal conditions</u> as defined by Note 7 to Table 1 in BS8233:2014</p> <p>Action Required: Mitigate and reduce to a minimum the exceedance over the threshold</p>

Change in noise levels	Increase in ambient $L_{Aeq,T}$ due to contribution from proposed development of 1.0-2.9dB.	<p>Justification for Effect Level: Within minor short-term impact classification range in Table 7.14 in IEMA 2014 guidance Guidelines for Environmental Noise Impact Assessment</p> <p>Action Required: Additional mitigation required to achieve effect of LOAEL or less.</p>
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Significant Observed Adverse Effect Level (SOAEL)		
Fixed plant and equipment located externally or internally with louvered ventilation grilles	Difference between Rating Level ($L_{Ar,T}$) dB and existing background sound level $L_{A90,T}$ dB is between 5-9dB.	<p>Justification for Effect Level: Within adverse impact threshold in BS4142:2014.</p> <p>Action Required: Additional mitigation required to achieve effect of LOAEL or less.</p>
Absolute internal noise criteria	<p>Noise levels are between:</p> <p>Living Rooms:</p> <ul style="list-style-type: none"> - 40-45 dB$L_{Aeq,16hours}$ <p>Kitchens, Dining Rooms, and Studies:</p> <ul style="list-style-type: none"> - 45-50 dB$L_{Aeq,16hours}$ <p>Bedrooms:</p> <ul style="list-style-type: none"> - 40-45 dB$L_{Aeq,16hours}$ - 35-40dB $L_{Aeq,8hr}$ - 45-55dB $L_{AFmax,2min}$ based on 10th highest $L_{AFmax,2min}$ sample) 	<p>Justification for Effect Level: Exceeds BS8233:2014 $L_{Aeq,T}$ reasonable criteria by 5dB or exceeds $L_{AFmax,2min}$ (10th highest sample)</p> <p>Action Required: Additional mitigation required to achieve effect of LOAEL or less.</p>

Change in noise levels	Increase in ambient $L_{Aeq,T}$ due to contribution from proposed development of 3.0-4.9dB.	<p>Justification for Effect Level: Within moderate short-term impact classification range in Table 7.14 in IEMA 2014 guidance Guidelines for Environmental Noise Impact Assessment</p> <p>Action Required: Additional mitigation required to achieve effect of LOAEL or less.</p>
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Unacceptable Observed Adverse Effect Level (UOAEL)		
Fixed plant and equipment located externally or internally with louvered ventilation grilles	Difference between Rating Level ($L_{Ar,T}$) dB and existing background sound	<p>Justification for Effect Level: Within significant adverse impact threshold in BS4142:2014</p>

Noise Sources	Noise Level Criteria	Justification for Effect Level-Action Required
	level $L_{A90,T}$ dB is equal to or greater than 10dB	<p>Action Required: Additional mitigation required to achieve effect of LOAEL or less.</p>
Absolute internal noise criteria	<p>Noise levels exceed: Living Rooms: - 45 dB $L_{Aeq,16hours}$ Kitchens, Dining Rooms, and Studies: - 50 dB $L_{Aeq,16hours}$ Bedrooms: - 45 dB $L_{Aeq,16hours}$ - 40dB $L_{Aeq,8hr}$ - $L_{AFmax,2min}$ noise levels exceeds 55dB L_{AFmax} based on 10th highest $L_{AFmax,2min}$ sample)</p>	<p>Justification for Effect Level: Exceeds BS8233:2014 $L_{Aeq,T}$ reasonable criteria by 10dB or exceeds $L_{AFmax,2min}$ (10th highest sample) by 10dB or more. Action Required: Additional mitigation required to achieve effect of LOAEL or less.</p>
Change in noise levels	Increase in ambient $L_{Aeq,T}$ due to contribution from proposed development of ≥ 5.0 dB.	<p>Justification for Effect Level: Within major short-term impact classification range in Table 7.14 in IEMA 2014 guidance Guidelines for Environmental Noise Impact Assessment. Action Required: Additional mitigation required to achieve effect of LOAEL or less.</p>

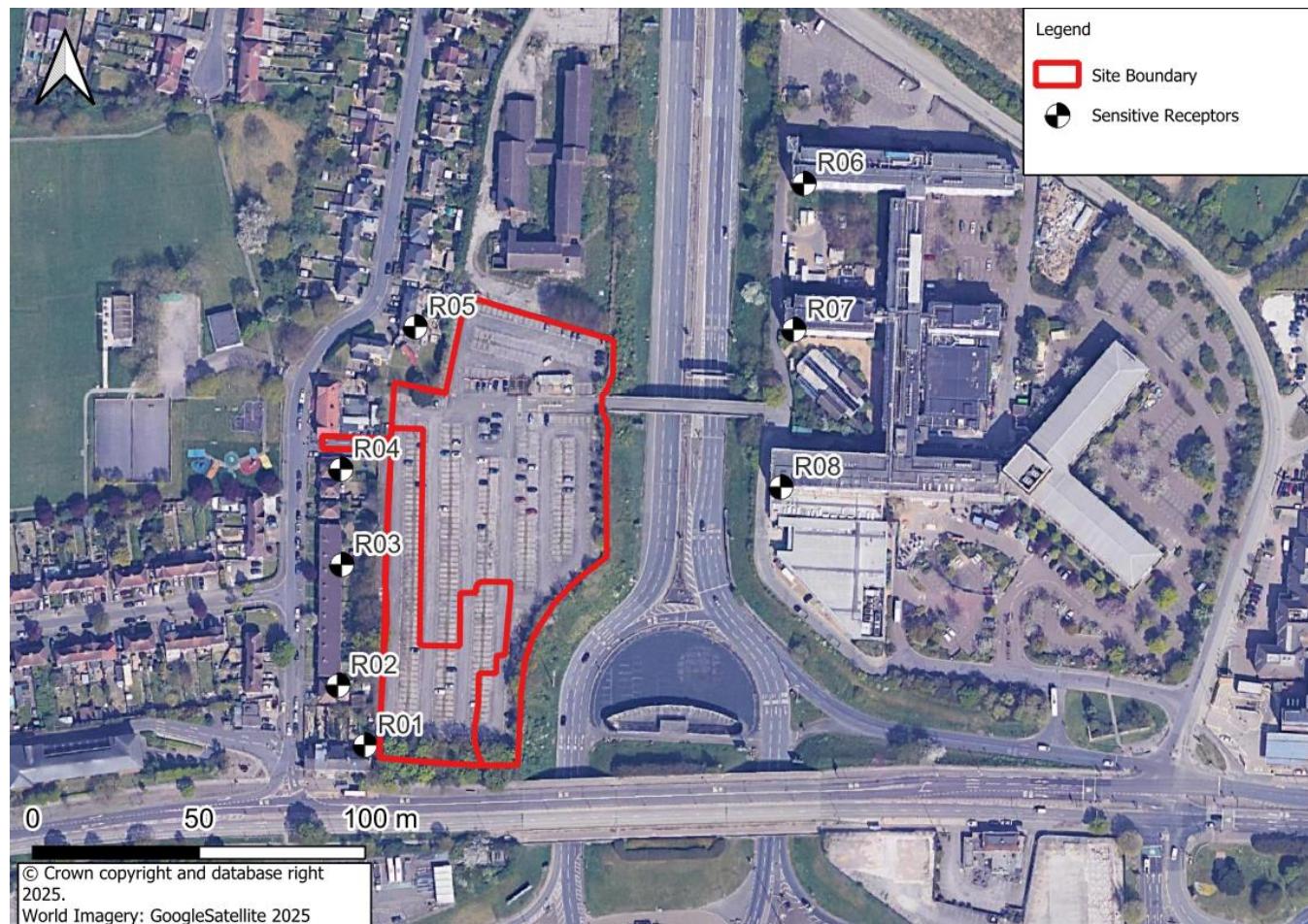
1.7 EXISTING SENSITIVE RECEPTOR LOCATIONS

Table 4 summarises receptor locations that have been selected to represent worst-case sensitive receptors with respect to direct noise from the site. The locations of the receptors are presented within **Figure 3**.

Table 4: Existing Sensitive Receptor Locations

Ref.	Description	Type of Use	Height (m) Daytime / Night-time
R01	6 Dorton Villas, Bath Road	Residential	1.5 / 4.0
R02	97 Sipson Way	Residential	1.5 / 4.0
R03	67 Sipson Way	Residential	1.5 / 4.0
R04	49 Sipson Way	Residential	1.5 / 4.0
R05	35 Sipson Way	Residential	1.5 / 4.0
R06	Radisson Red Hotel London Heathrow – North-western rooms	Hotel	1.5 / 4.0
R07	Radisson Red Hotel London Heathrow – Western rooms	Hotel	1.5 / 4.0
R08	Radisson Red Hotel London Heathrow – South-western rooms	Hotel	1.5 / 4.0

Figure 3: Sensitive Receptor Locations



1.8 SUMMARY OF NOISE SURVEY AND REPRESENTATIVE BACKGROUND LEVELS

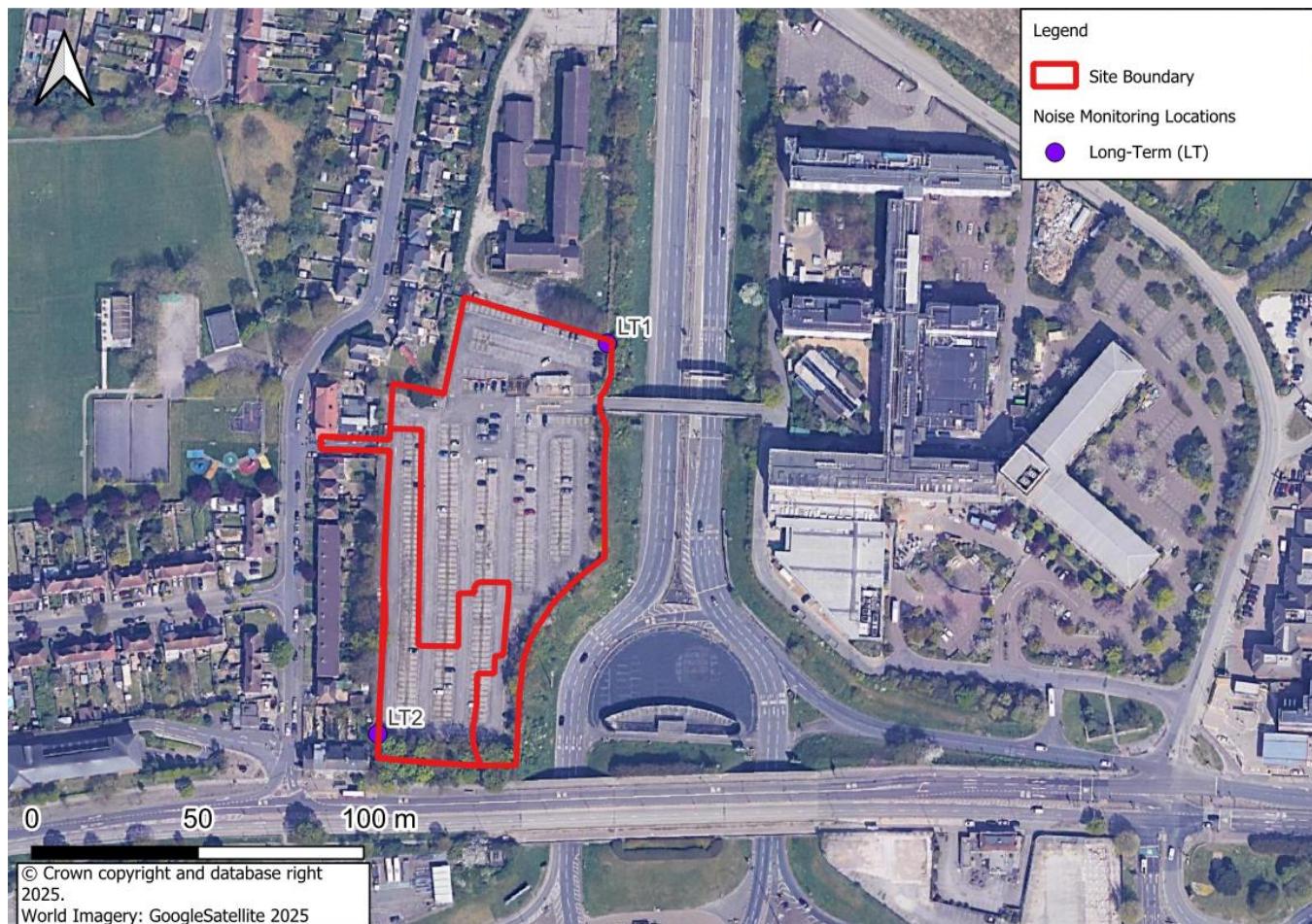
A baseline monitoring survey was undertaken at two locations (as specified in **Table 5** and shown in **Figure 4** below) from Wednesday 11th December 2024 to Tuesday 17th December 2024. Unattended Long-Term (LT) locations were measured over a 24-hour period. The raw data collected from the long-term monitoring is available upon request.

Measurements were taken in general accordance with BS 7445-1:2003 The Description and Measurement of Environmental Noise: Guide to quantities and procedures. Weather conditions during the survey period were observed as being dry. Anemometer readings confirmed that wind speeds were less than 5 ms⁻¹ at all times during the survey.

Table 5: Noise Monitoring Locations

Ref	Description
LT1	Found North-East of the Site Boundary adjacent to Tunnel Road Way.
LT2	Found South-West of the Site Boundary north of Bath Road.

Figure 4: Noise Monitoring Locations



Full details of the measurement results can be found in Section 4 of the originally submitted noise impact assessment report (doc. ref; '784-B070271 Infinium Heathrow Tt Noise Impact Assessment 19Feb25').

Using the data collected during the baseline survey, representative background noise levels have been derived for all receptor locations presented in **Figure 3** . .

Table 6 presents the representative background noise levels considered appropriate for the existing sensitive receptors within the area.

Table 6: Representative Background Noise Levels (All Receptors)

Receptors	Monitoring Location	Time Period	Representative Background Noise Level ($L_{A90,T}$ dB)*
R01 – R03	LT2	Daytime (07:00 – 23:00)	53.0
		Night-time (23:00 – 07:00)	45.0
R04 – R08	LT1	Daytime (07:00 – 23:00)	64.0
		Night-time (23:00 – 07:00)	50.0

Receptors	Monitoring Location	Time Period	Representative Background Noise Level ($L_{A90,T}$ dB)*
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*Lowest $L_{A90,T}$ value selected from either Weekday or Weekend.

The representative noise levels presented in **Table 6** have been used to inform the assessment.

1.9 OPERATIONAL PHASE

1.9.1 BS 4142:2014 Assessment

This assessment compares the predicted rating levels from the proposed plant items (battery containers, inverter and DNO substation) to the existing background noise levels.

BS 4142:2014 states that corrections should be applied to account for certain acoustic features which have the potential to increase the level of effect at nearby properties. As such, a correction of +2 dB has been applied to create the noise rating levels ($L_{Ar,T}$) to account for any “just perceptible” tonal characteristics of the noise associated with the proposed plant items.

The results of the BS 4142:2014 assessment is presented within **Table 7**.

Table 7: BS 4142:2014 Assessment

Location	Existing Measured Background L_{A90}		Noise Rating Level from Plant		BS 4142 Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R01	53	45	36	37	-17	-8
R02	53	45	39	40	-15	-5
R03	53	45	36	38	-17	-7
R04	64	50	34	35	-30	-15
R05	64	50	30	31	-34	-19
R06	64	50	24	27	-40	-23
R07	64	50	28	31	-36	-20
R08	64	50	31	32	-33	-18

All values are sound pressure levels in dBA re: 2×10^{-5} Pa.

All calculations used to derive the above table (including averaging of background noise levels and predicted source noise levels) have been undertaken to 1 decimal place to avoid perpetuation of rounding errors. However, in accordance with BS4142 para 8.6 the levels are expressed as integers (with 0.5 dB being rounded up). This may mean that the arithmetic in the above table may appear to be up to 1 dB incorrect due to this rounding.

As demonstrated within **Table 7**, the results of the assessment show that the rating levels are at least 5 dB below the existing background noise levels during the daytime and night-time respectively.

A noise intrusion assessment of the cumulative noise associated with the proposed development have been undertaken to further assess the impact of the development on the sensitive receptors.

1.9.2 Noise Intrusion Assessment

Internal noise levels at sensitive receptor locations, from the proposed development (inclusive of all car parking noise and plant noise), have been assessed both with windows open, where a reduction from a partially open window of 15 dB has been used, and with windows closed where an assumption of double glazing with a sound reduction of 30 dB R_w has been used.

Results of the noise intrusion assessments for average daytime and night-time noise levels are presented within **Table 8** and **Table 9** respectively, with night-time maximum noise levels presented within **Table 10**.

Table 8: Daytime Noise Intrusion Levels $L_{Aeq,1hour}$

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	Criteria L_{Aeq}
R01	43.8	28.8	13.8	35.0
R02	43.8	28.8	13.8	35.0
R03	43.9	28.9	13.9	35.0
R04	43.1	28.1	13.1	35.0
R05	38.8	23.8	8.8	35.0
R06	28.8	13.8	0.0	35.0
R07	31.6	16.6	1.6	35.0
R08	33.7	18.7	3.7	35.0

All values are sound pressure levels in dBA re: 2×10^{-5} Pa.

Table 9: Night-time Noise Intrusion Levels $L_{Aeq,15minutes}$

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	Criteria L_{Aeq}
R01	44.2	29.2	14.2	30.0
R02	44.3	29.3	14.3	30.0
R03	44.5	29.5	14.5	30.0
R04	43.6	28.6	13.6	30.0
R05	39.4	24.4	9.4	30.0
R06	32.1	17.1	2.1	30.0
R07	34.4	19.4	4.4	30.0
R08	35.6	20.6	5.6	30.0

All values are sound pressure levels in dBA re: 2×10^{-5} Pa.

Table 10: Night-time Noise Intrusion Levels L_{Amax}

Location	External L_{Amax}	Internal L_{Amax} with windows open	Internal L_{Amax} with windows closed	Criteria L_{Amax}
R01	37.6	22.6	7.6	45.0
R02	33.8	18.8	3.8	45.0
R03	31.8	16.8	1.8	45.0
R04	29.6	14.6	0.0	45.0
R05	26.6	11.6	0.0	45.0
R06	21.3	6.3	0.0	45.0
R07	24.8	9.8	0.0	45.0
R08	26.4	11.4	0.0	45.0

All values are sound pressure levels in dBA re: 2×10^{-5} Pa.

Predicted daytime and night-time noise levels are below the internal noise level criteria, both with windows opened and windows closed at all receptors.

1.9.3 Change in Noise Level Assessment

This assessment has been undertaken to compare worst-case representative noise levels from the 'existing ambient noise levels' (L_{Aeq}) to predicted ambient noise levels inclusive of the proposed car parking and plant items at existing sensitive receptors. The differences between the 'existing' and the 'proposed' development scenarios, during the daytime and night-time are presented in **Table 11**.

Table 11: Change in Noise Level Assessment

Ref	Existing L_{Aeq} (Monitored)		Proposed L_{Aeq} (Modelled)		Combined L_{Aeq}		Contribution from Proposed Scheme	
	Daytime	Night- Time	Daytime	Night- Time	Daytime	Night- Time	Daytime	Night- Time
R01	58.8	54.2	43.8	44.2	58.9	54.6	0.1	0.4
R02	58.8	54.2	43.8	44.3	58.9	54.6	0.1	0.4
R03	58.8	54.2	43.9	44.5	58.9	54.6	0.1	0.4
R04	67.5	62.8	43.1	43.6	67.5	62.9	0.0	0.1
R05	67.5	62.8	38.8	39.4	67.5	62.8	0.0	0.0
R06	67.5	62.8	28.8	32.1	67.5	62.8	0.0	0.0
R07	67.5	62.8	31.6	34.4	67.5	62.8	0.0	0.0
R08	67.5	62.8	33.7	35.6	67.5	62.8	0.0	0.0

All values are sound pressure levels in dBA re: 2×10^{-5} Pa.

As demonstrated in **Table 11**, the absolute noise level at the closest receptors is predicted to increase in $L_{Aeq,T}$ ambient noise levels by <1 dB due to the contribution from proposed development during the daytime and

night-time periods, indicative of a negligible short-term impact as defined by the IEMA 2014 Guidelines for Environmental Noise Impact Assessment.

As such, noise impact due to the operation of the proposed development is predicted to fall within the No Observed Adverse Effect Level (NOAEL) and therefore no further mitigation is required.

1.10 CONCLUSION

A noise assessment has been undertaken in support of a full planning application for an electric unit area comprising a Battery Energy Storage System (BESS) and associated infrastructure.

This Technical Note has been produced to determine the noise implications to the minor changes to the proposed development, detailed further in Section 1.2 of this note.

A BS 4142:2014 assessment was undertaken and showed that the rating levels associated with the proposed plant items are at least 15 dB and 5 dB below the measured background noise levels during the daytime and night-time periods respectively at all nearby existing receptors.

A noise intrusion assessment was undertaken and showed that the predicted daytime and night-time noise levels are within the BS 8233:2014 criteria with windows opened and windows closed at all receptors.

The change in ambient noise level assessment predicts that noise from the proposed site will increase the existing ambient noise level by no more than 0.1 dB and 0.4 dB during the daytime and night-time respectively at nearby existing receptors.

The NPPF provides test points against which the proposed development has been assessed. Considering these points, the following conclusions can be drawn:

NPPF paragraphs 198 and 201

Based upon the assessments presented, it is considered that the development does not adversely affect or put sensitive receptors at risk from noise pollution, and no significant adverse effects are predicted to occur.

NPPF paragraph 200

Considering the existing use of the site and wider development site, it is not considered that any existing businesses wanting to develop would be restricted by the proposals.

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It has been predicted that on-site operational noise effects associated with the Development will be within the Lowest Observed Adverse Effect Level (LOAEL), and therefore the development will have a low impact in relation to noise.

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