Heathrow Flightpath Car Park, Bath Road, Sipson, UB7 0DP

784-B070271

Noise Impact Assessment

LPH UK 1 Ltd

September 2025

TETRA TECH

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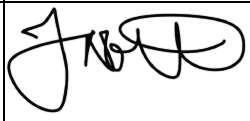
Date:	04/09/2025	**Checked by:**	Joe Nott Senior Environmental Consultant	
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Acronyms/Abbreviations

Acronyms/Abbreviations	Definition
CADNA	Computer Aided Noise Abatement
DMRB	Design Manual for Roads and Bridges
HGV	Heavy Goods Vehicle
PPG	Planning Practice Guidance
UDP	Unitary Development Plan
UKAS	United Kingdom Accreditation Service

Executive Summary

This report presents the findings of a noise assessment in support of a Hybrid application consisting of full planning permission for the creation of a mixed-use sustainable vehicle parking facility (Sui Generis) and food and beverage unit (Class E), alongside ancillary welfare and staff buildings, and other supporting infrastructure and site levelling, and outline planning permission for a future extension to the facility, with all associated matters reserved except for access. The site is located at Heathrow Flightpath Car Park, Bath Road, Sipson, UB7 0DU.

National and local planning policy and appropriate guidance documents including ‘BS 8233 – Guidance on Sound Insulation and Noise Reduction for Buildings’ (2014) and ‘BS 4142: 2014 Methods for Rating and Assessing Industrial and Commercial Sound’ have been used to set criteria in accordance with the NPPG Noise Exposure Hierarchy.

Baseline noise surveys were undertaken in December 2024 and the results used to verify predictions of the short-term and long-term effects of noise from the site.

CADNA noise modelling software has been used to model predicted noise emissions from the site using the ISO 9613-2 noise propagation methodology at the closest sensitive receptors.

A BS 4142:2014 assessment was undertaken and showed that the rating levels associated with the proposed plant items are at least 24 dB and 16 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 closed.

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 0.2 dB and 0.4 dB during the daytime and night-time respectively at nearby existing receptors.

Considering the above, 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.

1.0 Introduction

1.1 Purpose of this Report

This report presents the findings of a noise assessment in support of a Hybrid application consisting of full planning permission for the creation of a mixed-use sustainable vehicle parking facility (Sui Generis) and food and beverage unit (Class E), alongside ancillary welfare and staff buildings, and other supporting infrastructure and site levelling, and outline planning permission for a future extension to the facility, with all associated matters reserved except for access. The site is located at Heathrow Flightpath Car Park, Bath Road, Sipson, UB7 0DU.

A description of the existing noise environment in and around the site is provided. Noise surveys have been undertaken and the results used to verify predictions of the short-term and long-term effects of noise.

A list of acoustic terminology used in this report is provided in Appendix A. Report Conditions are available upon request.

1.2 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 1.1.

Table 1.1: PPG Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not present	No Effect	No Observed Effect	No Specific Measures Required
No Observed Adverse Effect Level (NOAEL)			
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).*

1.3 Local & Regional Policy Context

The London Borough of Hounslow Local Plan (2015) contains the following policies relating to Noise:

"**Hounslow Local Plan**

Policy EQ5 – Noise

Our approach

We will seek to reduce the impact of noise from aviation, transport and noise-generating uses, and require the location and design of new development to have considered the impact of noise, and mitigation of these impacts, on new users and surrounding uses according to their sensitivity.

We will achieve this by

(a) Assessing the potential noise impacts of development proposals where they are located near to noise-sensitive uses (such as housing) or existing sources of noise;

(b) Directing noise-sensitive development to locations outside those areas identified where noise exposure is likely to cause adverse effects in terms of public health and well-being and children's cognitive learning in schools;

(c) Ensuring noise-sensitive development is protected against existing and proposed sources of noise through careful design, layout and use of materials, adequate insulation of the building envelope (including both internal/external walls and ceilings), as well as protecting external amenity areas;

(d) Encouraging the uptake of measures to decrease noise nuisance in the built environment, including working with Heathrow Airport to improve conditions for households and other noise-sensitive uses exposed to high levels of noise, consistent with the Aviation Policy Framework; and

(e) Considering the designation of Quiet Areas and identifying and protecting areas of tranquillity which have remained relatively undisturbed by noise and are valued for their recreational and amenity value for this reason

We will expect development proposals to

(f) Carry out noise assessments where major schemes or a change of use to a more noise sensitive use are proposed, detailing on site noise levels both internally and in any external amenity space, and the potential impact of the development on surrounding uses;

(g) Minimise noise disturbance from adjoining uses by incorporating sound insulation or alternative forms of noise barrier, using appropriate materials and arranging and locating rooms appropriately (such as through stacking rooms of similar use above/adjacent to each other), including where conversions or change of use are proposed;

(h) Ensure that noise mitigation measures are implemented, to demonstrate compliance with British Standard BS8233: 2014 - Guidance on sound insulation and noise reduction for buildings, as appropriate;

(i) Demonstrate that new plant and machinery (including ventilation) do not harm the amenity of neighbouring properties and generate noise level that is at least 10dB below the background noise levels; and

(j) Be located outside of the 69 dB $L_{Aeq,16hrs}$ noise contour of Heathrow Airport where noise-sensitive uses (i.e. residential, nursing/care homes, schools/educational establishments, hospitals/healthcare facilities) are proposed, consistent with Section 2 of the International Civil Aviation Organisation (ICAO) Balanced Approach to Aircraft Noise Management which directs residential developments outside this contour."

1.4 Acoustic Consultants' Qualifications and Professional Memberships

This report was written by Ravi Godhania. The report has been checked by Alex Clark and verified by Matthew Smith. Relevant qualifications, membership and experience are summarised in Table 1.2.

Table 1.2: 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	A-Levels 2022	Jul 2024	-	-
Alex Clark	BEng 2016	Jan 2017	July 2016	March 2020
Matthew Smith	BSc 2017 IOA PgDip	Feb 2018	March 2021	-

2.0 Assessment Criteria

In order to enable the assessment of the proposed development in terms of LOAEL and SOAEL, Table 2.1 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 Hounslow Local Plan (2015)

A full bibliography of documents referenced within this report is provided within Appendix B.

Table 2.1: 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	**Justification for Effect Level:** Below low impact threshold in BS4142:2014 **Action Required:** None
Absolute internal noise criteria	Noise levels are below: Living Rooms: - 35 dB$L_{Aeq,16hours}$ Kitchens, Dining Rooms, and Studies: - 40 dB$L_{Aeq,16hours}$ Bedrooms: - 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)	**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 **Action Required:** None
Change in noise levels	Increase in ambient $L_{Aeq,T}$ due to contribution from proposed development of ≤1dB.	**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 **Action Required:** None

Noise Sources	Noise Level Criteria	Justification for Effect Level- Action Required
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.	**Justification for Effect Level:** Lower rating levels relative to measured background indicate it is less likely for adverse impacts to occur (depending on context). **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
Absolute internal noise criteria	Noise levels are between: Living Rooms: - 35-40 dB$L_{Aeq,16hours}$ Kitchens, Dining Rooms, and Studies: - 40-45 dB$L_{Aeq,16hours}$ Bedrooms: - 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)	**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 5dB to achieve reasonable internal conditions as defined by Note 7 to Table 1 in BS8233:2014 **Action Required:** Mitigate and reduce to a minimum the exceedance over the threshold
Change in noise levels	Increase in ambient $L_{Aeq,T}$ due to contribution from proposed development of 1.0-2.9dB.	**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 **Action Required:** Mitigate and reduce to a minimum the exceedance over the threshold
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.	**Justification for Effect Level:** Within adverse impact threshold in BS4142:2014. **Action Required** Additional mitigation required to achieve effect of LOAEL or less.
Absolute internal noise criteria	Noise levels are between: Living Rooms: - 40-45 dB$L_{Aeq,16hours}$ Kitchens, Dining Rooms, and Studies: - 45-50 dB$L_{Aeq,16hours}$ Bedrooms: - 40-45 dB$L_{Aeq,16hours}$ - 35-40dB $L_{Aeq,8hr}$	**Justification for Effect Level:** Exceeds BS8233:2014 $L_{Aeq,T}$ reasonable criteria by 5dB or exceeds $L_{AFmax,2min}$ (10th highest sample) **Action Required:** Additional mitigation required to achieve effect of LOAEL or less.

Noise Sources	Noise Level Criteria	Justification for Effect Level- Action Required
	- 45-55dB $L_{AFmax,2min}$ based on 10th highest $L_{AFmax,2min}$ sample)	
Change in noise levels	Increase in ambient $L_{Aeq,T}$ due to contribution from proposed development of 3.0-4.9dB.	**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 **Action Required:** Additional mitigation required to achieve effect of LOAEL or less.
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 level $L_{A90,T}$ dB is equal to or greater than 10dB	**Justification for Effect Level:** Within significant adverse impact threshold in BS4142:2014 **Action Required:** Additional mitigation required to achieve effect of LOAEL or less.
Absolute internal noise criteria	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)	**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.
Change in noise levels	Increase in ambient $L_{Aeq,T}$ due to contribution from proposed development of ≥5.0dB.	**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.

3.0 Assessment Methodology

3.1 Noise Modelling Methodology

Three-dimensional noise modelling has been undertaken based on the monitoring data to predict noise levels at a number of locations both horizontally and vertically. CADNA noise modelling software has been used. This model is based on ISO 9613-2 noise propagation methodology and allows for detailed prediction of noise levels to be undertaken for large numbers of receptor points and different noise emission scenarios both horizontally and vertically. The modelling software calculates noise levels based on the emission parameters and spatial settings that are entered. Input data and model settings as given in Table 3.1 below have been used.

Table 3.1: Modelling Parameters Sources and Input Data

Parameter	Source	Details
Horizontal distances – around site	Ordnance Survey	Ordnance Survey
Ground levels – around site	DEFRA	LIDAR 1m DTM
Building heights – around site	Tetra Tech Observations	• 4.0m height for one-storey properties • 8.0 m height for two storey properties • 3.0m per additional storey
Receptor positions*	Tetra Tech	• 1.5 m for ground floor properties • 4.0m height for first-floor properties
Modelling Parameters	Tetra Tech	• Ground Absorption: 0.5 • Order of Reflections: 3
Proposed Plans	Infinium Logistics	Drawing Title: 7935-SMR-00-ZZ-DR-A-8219-S3-P1.pdf Revision: P1 Dated: 18th July 2025
*All receptors modelled 0.05m from building façade unless otherwise stated.		

It is acknowledged that a number of the values of parameters chosen will affect the overall noise levels presented in this report. However, it should be noted that the values used, as identified above, are worst-case.

3.2 Model Input Data

Information regarding noise emissions from the proposed site has been determined using site survey data.

Data contained within Tables 3.2 presents noise information for the proposed car park.

Table 3.2: Summary of Noise Input Data (Sound Pressure Levels)

Noise Source	Type	Octave Band Sound Pressure Level (dB)								Sound Pressure Level (dB(A))	Distance (m)	Source
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz			
Car Door/Boot Slam Maximum Noise Event	Maximum	73.0	65.0	60.0	55.0	55.0	52.0	49.0	46.0	60.3	1.0	Tetra Tech Library
Car Park	Average	-	-	-	-	-	-	-	-	54.0	Level measured at centre of car park with microphone height of 1.5m	Tetra Tech Library

The proposed development also includes four batter containers and two inverters which are enclosed within the electric unit area. A further two enclosed DNO substations are located to the south of the electric unit area. The details regarding the model and sound level data for these plant items are not yet know. As such, sound level data from Tetra Tech's Library has been used to model these noise sources and these are presented in Table 3.3.

The noise breakout from the plant room has been modelled using area and vertical area sources with sound attenuation of 25 dB for walls and ceilings.

Table 3.3: Summary of Noise Input Data (Sound Power Levels)

Noise Source	Type	Octave Band Sound Power Level (dB)								Sound Power Level (dB(A))	Source
		63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz		
Inverter	Average	81.9	85.4	83.1	82.1	81	79.4	79.3	69.9	86.8	Tetra Tech Library
DNO Substation	Average	88.1	93.6	92.8	86.3	80.2	62.3	59.6	56.5	88.3	Tetra Tech Library
Battery Container (BESS)	Average	64.8	71.2	70.9	72.2	78.8	68.6	62.2	56.2	80.3	Tetra Tech Library

3.3 Sensitive Receptors

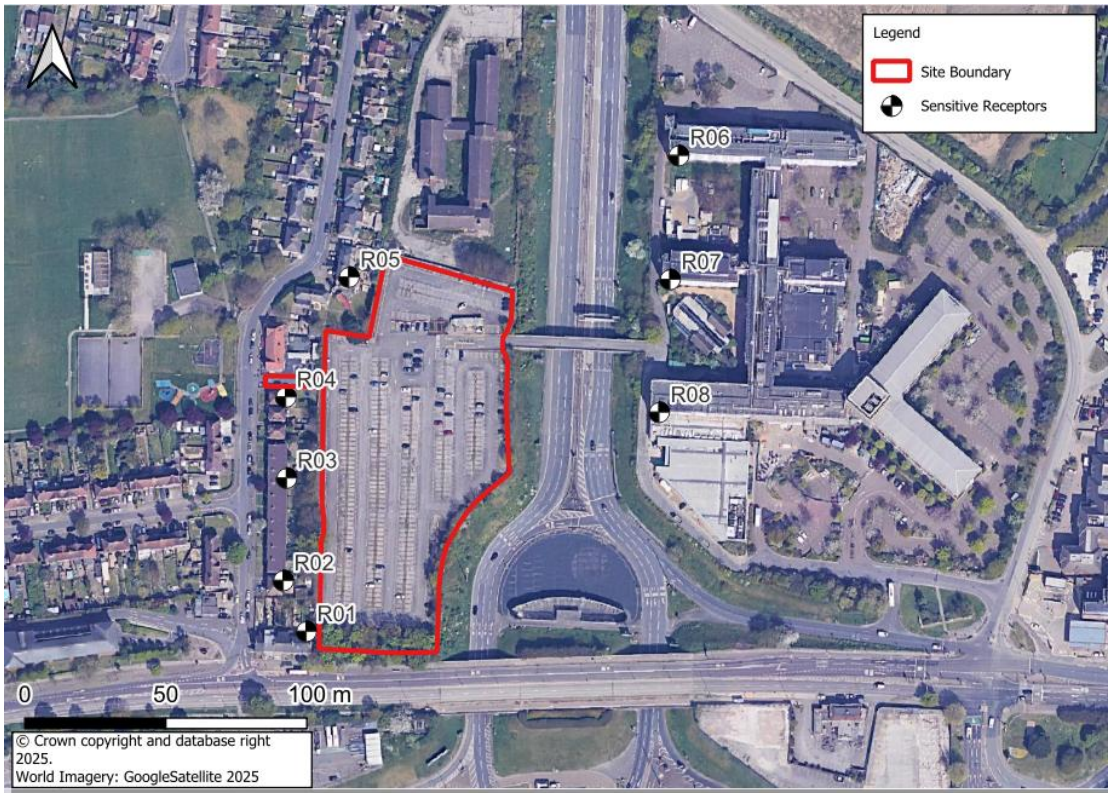
3.3.1 Existing Sensitive Receptor Locations

Table 3.4 below summarises receptor locations that have been selected to represent worst-case sensitive receptors with respect to direct noise from the site. Façades of the nearest noise sensitive properties to the development site have been represented. The locations of the receptors are presented within Figure 3.1.

Table 3.4: 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 3.1: Sensitive Receptor Locations



4.0 Noise Survey

4.1 Noise Survey Details

A monitoring survey was undertaken to characterise baseline ambient noise levels currently experienced on the site and to establish the relative local background and traffic noise levels. Equipment used during the survey included:

Rion NL-52	Environmental Noise Analyser	s/n	264488
Rion NL-52	Environmental Noise Analyser	s/n	1021257
Rion NC-75	Sound Calibrator	s/n	34580543

The measurement equipment was checked against the appropriate calibrator at the beginning and end of the measurements, in accordance with recommended practice. The accuracy of the calibrators can be traced to National Physical Laboratory Standards, calibration certificates for which are available on request.

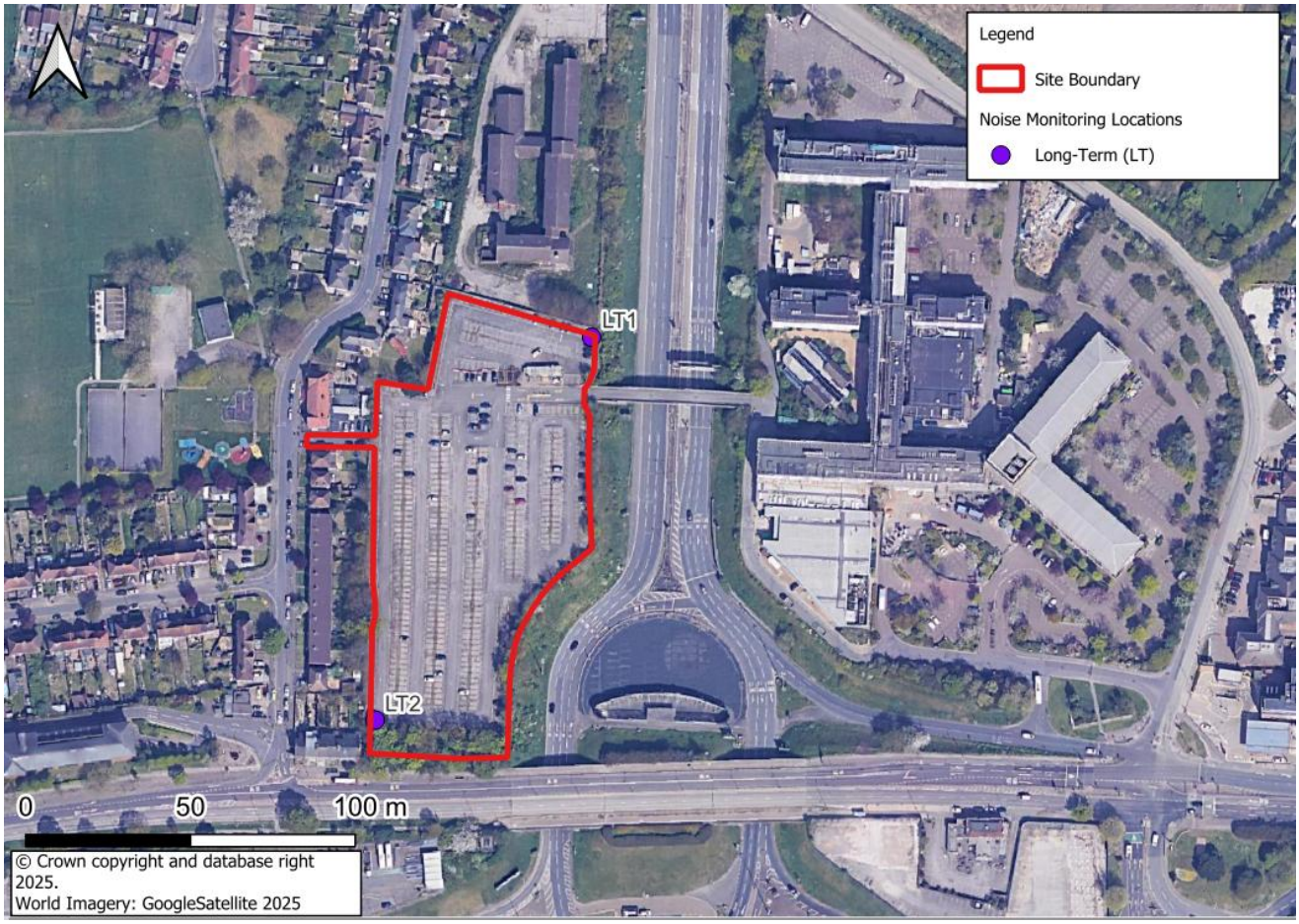
A baseline monitoring survey was undertaken at two locations (as specified in Table 4.1 and shown in Figure 4.1 below) from Wednesday 11th December 2024 to Tuesday 17th December 2024. Unattended Long-Term (LT) locations were measured over a 24-hour period. The raw data collected from the long-term monitoring 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 4.1: 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 4.1: Noise Monitoring Locations



4.2 Noise Survey Results

The dominant noise sources found in the area include frequent aircraft, road traffic noise from A4 Bath Road and the M4 Tunnel Roads. Other contributions to the ambient noise environment consist of birdsong and trees rustling in the wind.

Ambient and background noise levels are usually described using the L_{Aeq} index (a form of energy average) and the L_{A90} index (i.e. the level exceeded for 90% of the measurement period) respectively. Road traffic noise is generally described using the L_{A10} index (i.e. the level exceeded for 10% of the measurement period). For the long-term (LT) locations, the presented $L_{Aeq,T}$ and $L_{A10,T}$ are average noise levels whilst the L_{A90} is the modal noise level of each 5-minute measurement over the stated survey period.

Table 4.2: Meteorological Conditions During the Survey

Survey Location	Date	Temperature (ºC)	Wind Speed (m/s)	Wind Direction	Cloud Cover (Oktas)	Dominant Noise Source
LT1 & LT2	Wednesday 11/12/2024	7	3-4	S/W	6	Traffic noise from A4 Bath Road and the M4 Tunnel Roads
LT1 & LT2	Thursday 12/12/2024	7	2-3	S/W	5	Traffic noise from A4 Bath Road and the M4 Tunnel Roads
LT1 & LT2	Friday 13/12/2024	6	1-2	N	6	Traffic noise from A4 Bath Road and the M4 Tunnel Roads
LT1 & LT2	Saturday 14/12/2024	7	3-4	E	3	Traffic noise from A4 Bath Road and the M4 Tunnel Roads
LT1 & LT2	Sunday 15/12/2024	11	3-4	E	5	Traffic noise from A4 Bath Road and the M4 Tunnel Roads
LT1 & LT2	Monday 16/12/2024	10	3-4	E	6	Traffic noise from A4 Bath Road and the M4 Tunnel Roads
LT1 & LT2	Tuesday 17/12/2024	9	4-5	N	5	Traffic noise from A4 Bath Road and the M4 Tunnel Roads

The results of the statistical measurements and frequency measurements conducted during the survey are summarised in the following table. All values are sound pressure levels in dB (re: 2 x 10^{-5} Pa).

Table 4.3: Results of Baseline Noise Monitoring Survey

Period	Duration (T)	Monitoring Date and Times	Location	$L_{Aeq,T}$ (dB)	$L_{Amax,T}$ (dB)	$L_{Amin,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
Weekday Daytime 07:00 - 23:00	63 hours	11/12/2024 – 17/12/2024	LT1	68.1	91.6	50.4	69.9	64.0
Weekday Night-time 23:00 – 07:00	32 hours	11/12/2024 – 17/12/2024		63.6	88.7	45.0	65.3	50.0
Weekend Daytime 07:00 - 23:00	32 hours	11/12/2024 – 17/12/2024		67.5	91.4	51.9	69.4	64.0
Weekend Night-time 23:00 – 07:00	16 hours	11/12/2024 – 17/12/2024		62.8	87.0	44.6	63.7	50.0
Weekday Daytime 07:00 - 23:00	63 hours	11/12/2024 – 17/12/2024	LT2	60.0	88.5	45.9	60.8	54.0
Weekday Night-time 23:00 – 07:00	32 hours	11/12/2024 – 17/12/2024		55.7	93.0	38.5	56.1	50.0
Weekend Daytime 07:00 - 23:00	32 hours	11/12/2024 – 17/12/2024		58.8	88.7	46.3	59.9	53.0
Weekend Night-time 23:00 – 07:00	16 hours	11/12/2024 – 17/12/2024		54.2	81.7	39.1	56.1	45.0

4.3 Representative Background Noise Levels

Using the data collected during the baseline survey, representative background noise levels have been derived for all receptor locations presented in Figure 3.1. Table 4.4 presents the representative background noise levels considered appropriate for the existing sensitive receptors within the area.

Table 4.4: 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

*Lowest $L_{A90,T}$ value selected from either Weekday or Weekend.

The representative noise levels presented in Table 4.4 have been used to inform the assessment presented in Section 5.0.

5.0 Assessment of Effects

5.1 Operational Phase

5.1.1 BS 4142:2014 Assessment

This assessment compares the predicted rating levels from the proposed plant items (battery containers, inverter and DNO substation) as described within Table 3.3 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 ($L_{Ar,Tr}$) 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 5.1.

Table 5.1: BS 4142:2014 Assessment

Location	Existing Measured Background, dB $L_{A90,T}$		Noise Rating Level from Plant, dB $L_{Ar,Tr}$		BS 4142 Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R01	53	45	27	28	-26	-17
R02	53	45	29	29	-24	-16
R03	53	45	28	28	-25	-17
R04	64	50	26	26	-38	-24
R05	64	50	21	21	-43	-29
R06	64	50	16	18	-48	-32
R07	64	50	20	21	-44	-29
R08	64	50	21	22	-43	-28

All values are sound pressure levels in dBA re: 2 x 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 5.1, the results of the assessment show that the rating levels are at least 24 dB and 16 dB below the existing background noise levels during the daytime and night-time respectively. The daytime and night-time noise rating levels meet the criterion

for new plant or machinery outlined in policy EQ5 of the London Borough of Hounslow Local Plan (2015). These levels are also considered to be an indication of a low impact in accordance with BS 4142:2014.

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.

5.1.2 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 Tables 5.2 and 5.3 respectively, with night-time maximum noise levels presented within Table 5.4.

Table 5.2: 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	43.3	28.3	13.3	35.0
R02	44.0	29.0	14.0	35.0
R03	44.5	29.5	14.5	35.0
R04	43.8	28.8	13.8	35.0
R05	40.7	25.7	10.7	35.0
R06	31.2	16.2	1.2	35.0
R07	33.1	18.1	3.1	35.0
R08	35.1	20.1	5.1	35.0

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

Table 5.3: 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	43.1	28.1	13.1	30.0
R02	43.9	28.9	13.9	30.0
R03	44.2	29.2	14.2	30.0
R04	43.6	28.6	13.6	30.0
R05	40.8	25.8	10.8	30.0
R06	32.9	17.9	2.9	30.0
R07	34.9	19.9	4.9	30.0
R08	36.0	21.0	6.0	30.0
All values are sound pressure levels in dBA re: 2 x 10^{-5} Pa.				

Table 5.4 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	29.9	14.9	0.0	45.0
R02	30.4	15.4	0.4	45.0
R03	28.8	13.8	0.0	45.0
R04	29.3	14.3	0.0	45.0
R05	30.9	15.9	0.9	45.0
R06	16.8	1.8	0.0	45.0
R07	19.3	4.3	0.0	45.0
R08	29.3	14.3	0.0	45.0
All values are sound pressure levels in dBA re: 2 x 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.

5.1.3 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 5.5 below.

Table 5.5 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	43.3	43.1	58.9	54.5	0.1	0.3
R02	58.8	54.2	44.0	43.9	58.9	54.6	0.1	0.4
R03	58.8	54.2	44.5	44.2	59.0	54.6	0.2	0.4
R04	67.5	62.8	43.8	43.6	67.5	62.9	0.0	0.1
R05	67.5	62.8	40.7	40.8	67.5	62.8	0.0	0.0
R06	67.5	62.8	31.2	32.9	67.5	62.8	0.0	0.0
R07	67.5	62.8	33.1	34.9	67.5	62.8	0.0	0.0
R08	67.5	62.8	35.1	36.0	67.5	62.8	0.0	0.0

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

As demonstrated in Table 5.5, 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.

6.0 Conclusion

A noise assessment has been undertaken in support of a Hybrid application for full planning permission for a mixed use sustainable vehicle parking facility (Sui Generis) and food and beverage unit (Class E), alongside ancillary welfare and staff buildings, and other supporting infrastructure and site levelling, and outline planning permission for a future extension to the facility, with all associated matters reserved except for access. The site is located at Heathrow Flightpath Car Park, Bath Road, Sipson, UB7 0DU.

A BS 4142:2014 assessment was undertaken and showed that the rating levels associated with the proposed plant items are at least 24 dB and 16 dB 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 0.2 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.

Planning Practice Guidance: Noise

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.

Appendices

Appendix A – Acoustic Terminology

Acoustic Terminology

dB — Sound levels from any source can be measured in frequency bands in order to provide detailed information about the spectral content of the noise, i.e. whether it is high-pitched, low-pitched, or with no distinct tonal character. These measurements are usually undertaken in octave or third octave frequency bands. If these values are summed logarithmically, a single dB figure is obtained. This is usually not very helpful as it simply describes the total amount of acoustic energy measured and does not take any account of the ear's ability to hear certain frequencies more readily than others.

dB(A) — Instead, the dBA figure is used, as this is found to relate better to the loudness of the sound heard. The dBA figure is obtained by subtracting an appropriate correction, which represents the variation in the ear's ability to hear different frequencies, from the individual octave or third octave band values, before summing them logarithmically. As a result, the single dBA value provides a good representation of how loud a sound is.

L_{Aeq} — Since almost all sounds vary or fluctuate with time it is helpful, instead of having an instantaneous value to describe the noise event, to have an average of the total acoustic energy experienced over its duration. The $L_{Aeq,\ 07:00\ –\ 23:00}$ for example, describes the equivalent continuous noise level over the 16-hour period between 7 am and 11 pm. During this time period the L_{pA} at any particular time is likely to have been either greater or lower that the $L_{Aeq,\ 07:00\ –\ 23:00}$.

L_{Amin} — The L_{Amin} is the quietest instantaneous noise level. This is usually the quietest 125 milliseconds measured during any given period of time.

L_{Amax} — The L_{Amax} is the loudest instantaneous noise level. This is usually the loudest 125 milliseconds measured during any given period of time.

L_n — Another method of describing, with a single value, a noise level which varies over a given time period is, instead of considering the average amount of acoustic energy, to consider the length of time for which a particular noise level is exceeded. If a level of x dBA is exceeded for say. 6 minutes within one hour, then that level can be described as being exceeded for 10% of the total measurement period. This is denoted as the $L_{A10,\ 1\ hr}$ = x dB.

The L_{A10} index is often used in the description of road traffic noise, whilst the L_{A90}, the noise level exceeded for 90% of the measurement period, is the usual descriptor for underlying background noise. L_{A1} and L_{Amax} are common descriptors of construction noise.

R_w — The *weighted sound reduction index* determined using the above *measurement* procedure, but weighted in accordance with the procedures set down in BS EN ISO 717-1. Partitioning and building board manufacturers commonly use this index to describe the inherent sound insulation performance of their products.

Appendix B – References

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