Noise Assessment

Building 1071, Southampton Road, Heathrow

March 2026

www.phlorum.com

Noise Assessment

Building 1071, Southampton Road, Heathrow

March 2026

Tritax London Logistics Fund

72 Broadwick Street
London
W1F 9QZ

Document Control:

Project no.	Project
14353	Building 1071, Southampton Road, Heathrow

Report No.	Version	Written By:	Checked by:	Authorised by:	Date
14353 (NV)	V0 Draft	R. Peirce	J. Ferguson-Moore	J. Ferguson-Moore	26.01.26
	V1				23.03.26

Phlorum Limited

Southern Office: Unit 12, Hunns Mere Way, Woodingdean, Brighton, East Sussex, BN2 6AH

T: 01273 307 167 E: info@phlorum.com W: www.phlorum.com

Contents

Figures:

Appendices:

1. Introduction

1.1 Phlorum Limited has been commissioned by Avison Young on behalf of Tritax London Logistics Fund to undertake a noise assessment for Building 1071, Southampton Road, Heathrow ('Project Regis').

1.2 The project comprises the redevelopment of the existing site, providing a new industrial warehouse development totalling circa 11,500sqft GEA.

1.3 The noise impact of the proposal has been established by measuring and predicting the effects against national guidelines on noise. Where necessary, mitigation measures have been recommended so that a noise climate suitable for the nearest residential properties to the proposed development can be achieved.

1.4 Whilst reasonable efforts have been made to produce a report that is easy to understand, it is technical in nature. To assist the reader, an introduction to noise, and an explanation of the terminology used in this report are contained in Appendix A.

2. Site Description

Site Location

2.1 The project comprises the redevelopment of a former industrial building that has already been demolished.

2.2 The site is located directly to the south of Heathrow airport with industrial buildings and Southampton Road East in between the site and the airport runways. There is a multi-story car park directly to the east of the site and an existing cargo facility directly to the west. To the south of the site there is a 1.8m high boundary fence but this has gaps between the fence boards and provides no acoustic benefit. The Southern Perimeter Road is located directly to the south of the site, with Bedfont Road running parallel to the Southern Perimeter Road on the other side of two rivers. The nearest residential properties are located on the far side of Bedfont Road and on Long Lane, which is located off Bedfont Road.

2.3 The location plan is shown in Figure 1 along with the noise measurement and prediction locations.

3. Guidance

Local Authority

3.1 The application site is located in Hillingdon Borough Council but the nearest residential properties, which are located to the south of the development site are located in Spelthorne Borough Council (SBC). The SBC website provides the following noise advice for planning applications:

Consider noise at the planning stage

Excessive noise can have a serious impact on the health and wellbeing of local residents. Noise can lead to annoyance, irritability and/or sleep disturbance.

It is often more cost effective to "design-out" any potential noise problems before they arise. If properly considered, noise problems can be resolved at the planning stage.

Noise Impact Assessment

Application proposals that raise issues of disturbance or are considered to be in a noise sensitive area should be supported by a noise impact assessment prepared by a suitably qualified acoustician.

Planning will consider whether noise problems may arise from the development, and will consult with Environmental Health.

Typical consultations that Environmental Health are consulted on:

- *installation of noisy machinery eg air conditioning units*
- *other applications with potential for noise which will impact upon local residents*

Sources of guidance and help available

If noise is likely to be a factor in your planning application, you need to consider its likely impact on the local community, and if necessary, what controls will be put in place to ensure that the community will not be unduly impacted.

BS 4142: 1997 Method for rating industrial noise affecting mixed residential and industrial areas. This British Standard can be used to assess the likelihood of complaints arising from the installation of a new industrial noise source eg new air conditioning or refrigeration units.

BS8233: 1999 Sound insulation and noise reduction for buildings. This British Standard provides information on the design of internal acoustics for buildings. Environmental Health would normally recommend that noise reduction measures are put in place that

will achieve the "good" internal noise levels in bedrooms and living rooms set out in the standard.

World Health Organisation Community Noise Guidelines 2000. This guidance describes the impacts on health that may arise as a result of exposure to noise and recommends noise levels within residential properties.

National Planning Policy Framework

3.2 The Department for Communities and Local Government published the National Planning Policy Framework (NPPF) on 27th March 2012 and upon its publication, the majority of planning policy statements and guidance notes were withdrawn, including Planning Policy Guidance (PPG) 24 Planning and Noise, which until the emergence of the NPPF, set out the Government's position on how noise should be dealt with in the planning system.

3.3 The NPPF was revised on 24th July 2018, with the earlier 2012 version immediately withdrawn. The latest update was published in February 2025.

3.4 The general guiding principle in the NPPF is contained in Section 15 under the heading Conserving and enhancing the natural environment. Paragraph 187 states:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

(e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;"

3.5 The noise planning policy is contained in paragraph 198, which also appears in Section 15 of the NPPF:

"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;"

3.6 A footnote to paragraph 198 refers to the Explanatory Note of the Noise Policy Statement for England (Department for Environment, Food & Rural Affairs, 2010), which defines both "*significant adverse impacts on health and quality of life*" and "*adverse impacts on health and quality of life*".

Noise Policy Statement for England

3.7 The Department for Environment, Food and Rural Affairs published the Noise Policy Statement for England (NPSE) in March 2010. The explanatory note of the NPSE defines the terms used in the NPPF:

"2.20 There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation. They are:

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

2.21 Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed adverse effect level.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur."

3.8 The NPSE does not define the SOAEL numerically, stating at paragraph 2.22:

"2.22 It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available."

3.9 There is no local or national guidance on how the three terms should be defined numerically.

3.10 There are three aims in the NPSE, two of which expand upon the first bullet point in paragraph 180 of the NPPF:

"The first aim of the Noise Policy Statement for England

Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

2.23 The first aim of the NPSE states that significant adverse effects on health and quality of life should be avoided while also taking into account the guiding principles of sustainable development (paragraph 1.8).

The second aim of the Noise Policy Statement for England

Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

2.24 The second aim of the NPSE refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development (paragraph 1.8). This does not mean that such adverse effects cannot occur.

The third aim of the Noise Policy Statement for England

Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

2.25 This aim seeks, where possible, positively to improve health and quality of life through the pro-active management of noise while also taking into account the guiding principles of sustainable development (paragraph 1.8), recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society. The protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim."

Planning Practice Guidance

3.11 In March 2014, the Government released Planning Practice Guidance (PPG) on noise, entitled 'Noise'. This document sets out a number of principles in the form of questions and answers, and reinforces the guidance set out in the NPPF and the NPSE. The noise PPG was last updated in December 2014.

3.12 The noise PPG notes that:

"Noise needs to be considered when new development may create additional noise and when new developments would be sensitive to the prevailing acoustic environment."

3.13 It goes on to note that:

"Local planning authorities' plan-making and decision taking should take account of the acoustic environment and in doing so consider:

- *whether or not a significant adverse effect is occurring or likely to occur;*
- *whether or not an adverse effect is occurring or likely to occur; and*
- *whether or not a good standard of amenity can be achieved."*

3.14 The noise PPG broadly repeats the NPSE definitions of the NOEL, LOAEL and SOAEL and it provides a summary table to explain how the terms relate to each other and to typical human reactions to sound. The table is replicated below in Table 3.1.

Table 3.1: Planning Practice Guidance summary of noise exposure hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not noticeable	No effect	No observed effect	No specific measures required
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No observed adverse effect	No specific measures required
		Lowest observed adverse effect level	
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, 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 perceived change in the quality of life.	Observed adverse effect	Mitigate and reduce to a minimum
		Significant observed adverse effect level	
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep the windows closed most of the time because of the noise. Potential for sleep disturbance	Significant observed adverse effect	Avoid

Perception	Examples of Outcomes	Increasing Effect Level	Action
	resulting in difficulty in getting back to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.		
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable adverse effect	Prevent

3.15 It is noted that the text in paragraph 005 of the PPG for noise reiterates the point illustrated in Table 3.1, that there are degrees of adverse effect above the SOAEL. Table 3.1 defines two degrees of significant adverse effect: a significant observed adverse effect, which is deemed noticeable and disruptive, and an unacceptable adverse effect, which is deemed noticeable and very disruptive.

3.16 The distinction between these two degrees of significant adverse effect is expanded upon in the text in paragraph 005 of the PPG for noise:

"005 Increasing noise exposure will at some point cause the significant observed adverse effect level boundary to be crossed. Above this level the noise causes a material change in behaviour such as keeping windows closed for most of the time or avoiding certain activities during periods when the noise is present. If the exposure is above this level the planning process should be used to avoid this effect occurring, by use of appropriate mitigation such as by altering the design and layout. Such decisions must be made taking account of the economic and social benefit of the activity causing the noise, but it is undesirable for such exposure to be caused.

At the highest extreme, noise exposure would cause extensive and sustained changes in behaviour without an ability to mitigate the effect of noise. The impacts on health and quality of life are such that regardless of the benefits of the activity causing the noise, this situation should be prevented from occurring."

3.17 The PPG, which is the most recent manifestation of Government advice on how noise should be treated within the planning system, as opposed to a policy position as stated in the more recent NPPF, is clear that a significant adverse effect, which lies above the SOAEL but below an unacceptable adverse effect, can be addressed (or 'avoided' in the terms of the PPG) through the provision of mitigation, including noise insulation; it is not until an unacceptable adverse effect is reached that the cause of the effect should be prevented.

3.18 The noise PPG provides advice on how to mitigate the effects of noise, noting that there are options to reduce noise at source, to optimise site layouts, to use planning conditions, and provide insulation within affected properties.

3.19 The noise PPG also notes that:

The noise impact may be partially offset if the residents of those dwellings have access to:

a relatively quiet façade (containing windows to habitable rooms) as part of their dwelling, and/or

- *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 with increasing noise exposure and could be such that significant adverse effects occur, and/or*
- *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 publically 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 minutes walking distance)."*

BS8233:2014

3.20 The scope of British Standard (BS) 8233: 2014 Guidance on sound insulation and noise reduction for buildings is the provision of recommendations for the control of noise in and around buildings. It suggests appropriate criteria and limits for different situations, which are primarily intended to guide the design of new or refurbished buildings undergoing a change of use rather than to assess the effect of changes in the external noise climate.

3.21 Table 4 of BS8233: 2014 suggests suitable internal noise levels within different types of building, including residential dwellings, as shown in Table 3.2.

Table 3.2: BS8233 recommended internal noise levels, dB

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35dB $L_{Aeq,16hour}$	-
Dining	Dining room/area	40dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	35dB $L_{Aeq,16hour}$	30dB $L_{Aeq,8hour}$

3.22 BS8233 contains the following relevant guidance in footnotes to the above information:

"Note 4: Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or LAmax,F, depending on the character and number of events per night. Sporadic noise events could require separate values.

Note 5: If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the façade insulation or the resulting noise level.

Note 7: Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved."

3.23 Although Note 4 above refers to setting a guideline value for maximum noise levels, BS8233: 2014 does not provide any guidance on a suitable criterion.

3.24 Placing the BS8233: 2014 guidance into the context required by the NPPF and the NPSE, it is considered that where the internal noise levels meet the guideline values set out in Table 3.2, there is considered to be no observed effect.

3.25 Since BS8233: 2014 allows for a 5dB relaxation in the guideline values in Table 3.2 (Note 7 above), it is considered that internal noise levels up to 5dB above the guideline values in Table 3.2 may still be acceptable.

3.26 Section 7.7.3.2 of BS8233, titled Design criteria for external noise states:

"For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50dB LAeq,T, with an upper guideline value of 55dB LAeq,T which would be acceptable in noisier environments."

3.27 BS8233: 2014 goes on to note that the upper guideline value may be exceeded in certain circumstances:

"However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited."

3.28 Achieving the lowest practicable noise levels in gardens is deemed acceptable in BS8233: 2014 in circumstances where development is needed in areas where the upper 55dB limit cannot be achieved.

3.29 As BS8233: 2014 states that it is desirable that garden noise levels do not exceed 50dB LAeq,T, this implies some adverse effect above this level. Therefore, an external daytime noise level of 50dB LAeq,16hrs can be defined as the LOAEL.

3.30 However, it would not be appropriate to equate the 55dB criterion with the SOAEL, since it is clear from BS8233: 2014 that 55dB is not a threshold that should never be exceeded. Equating the 55dB criterion to the SOAEL would mean that, in national policy terms, exceeding this threshold should be avoided, which is not what the standard requires.

World Health Organisation

3.31 The World Health Organisation (WHO) Guidelines for Community Noise (1999) also sets out guidance on suitable internal and external noise levels in and around residential properties. The guidance on internal and external noise levels is the same as set out in BS8233: 2014 in terms of LAeq values, but the WHO guidelines also provide guidance on night-time maximum noise levels, stating:

"For a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45 dB LAFmax more than 10-15 times per night."

3.32 The WHO guidelines suggest the possibility of sleep disturbance if continuous noise in bedrooms exceeds 30dB LAeq.8hrs during the night-time, and therefore internal noise levels above this value can be considered to be above the LOAEL. This internal value can be translated to an external value by the addition of 10dB, to account for the typical reduction through an open window. Therefore, external night-time noise levels of 40dB LAeq,8hrs can be defined as the LOAEL.

3.33 The WHO published their Night Noise Guidelines for Europe in 2009. This document sets an external 'night noise guideline' (NNG) of 40dB. This is consistent with the LOAEL value determined above. The NNG also sets an interim target of 55dB in situations where the 40dB value cannot be met. Above 55dB the NNG notes that the situation is considered increasingly dangerous for public health. On the basis of the above, a free-field external value of 55dB LAeq,8hrs is considered to be the night-time SOAEL.

Industrial & Commercial Noise

3.34 BS4142:2014+A1:2019 provides a methodology that determines the significance of adverse impact at dwellings potentially affected by noise of an industrial nature. BS 4142 refers specifically to sound from fixed installations which comprise mechanical and electrical plant and equipment; sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.

3.35 The basis of the standard requires a comparison to be made between the 'background noise level' of the assessment area and the 'specific noise level' of the noise source under consideration. There are five key definitions relating to this relationship;

- Background Noise Level - LA90,T - this is defined in the Standard as 'the 'A' weighted sound pressure level of the residual noise at the assessment position which is exceeded for 90 % of the given time interval, T, measured using time weighting F and quoted to the nearest number of whole decibels.
- Specific Noise Level - LAeq,T - this is the equivalent continuous 'A' weighted sound pressure level over a given time interval.
- Residual Noise - this is defined as the ambient noise remaining in a given situation when the specific noise source is suppressed to a degree such that it does not contribute to the ambient noise.
- Ambient Noise - totally encompassing sound in a given situation at a given time usually composed of sound from many sources near and far.
- Rating Level - LAeq,T - the specific noise level plus any adjustment made for the characteristic features of the noise.

3.36 The background level, wherever possible should be determined at the location where the assessment is to be made. Situations will arise where, due to circumstances which influence this level unduly, for example the specific noise level is operating continuously and thus the residual noise cannot be measured at this point, the background level may be determined in other ways. This may be, for example, by measuring at a different location or at a different time which are nevertheless representative of the assessment position.

3.37 A further acoustic correction to the specific noise level is made if the sound has tonal or impulsive characteristics.

3.38 Once all necessary adjustments have been made, the background and the specific noise levels are compared. The standard states that the greater this difference is, the greater is the magnitude of the impact.

- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

3.39 The assessment should consider the level of uncertainty in the data and associated calculations. Where the level of uncertainty could affect the conclusion, reasonable practicable steps should be taken to reduce the level of uncertainty.

Traffic Noise, DMRB

3.40 The impact of changes in road traffic noise levels has been considered against the principles and guidance presented within Design Manual for Roads and Bridges (DMRB) LA 111, Noise and Vibration, May 2020 published by Highways England. DMRB presents an impact significance matrix for assessing the magnitude of changes in noise level for the short and long term and can be used as criteria for assessing the impact of any changes in road traffic noise levels.

Table 3.3: Magnitude of Change – Short Term (Table 3.54a in DMRB)

Short Term Magnitude	Short Term Noise Change (dB $L_{A10,18\ hr}$ or L_{night})
Major	Greater than or equal to 5.0
Moderate	3.0 to 4.9
Minor	1.0 to 2.9
Negligible	Less than 1.0

Table 3.4: Magnitude of Change – Long Term (Table 3.54a in DMRB)

Short Term Magnitude	Short Term Noise Change (dB $L_{A10,18\ hr}$ or L_{night})
Major	Greater than or equal to 10.0
Moderate	5.0 to 9.9
Minor	3.0 to 4.9
Negligible	Less than 3.0

4. Noise Survey

Noise

4.1 A noise survey was undertaken to establish typical sound levels at the site. The measurements were taken over a three day period starting at 12:30 hours on Monday 10th November 2025 to provide day and night-time noise levels at the site.

4.2 The survey methods and results are set out below.

Sound Survey Method

4.3 The equipment used during the survey is summarised in Appendix B. The sound level meters were field-calibrated immediately before and after the measurements using the listed acoustic calibrator. No significant calibration drifts were found to have occurred.

4.4 The sound level meters have been laboratory-calibrated to a traceable standard within the two years preceding the survey. The acoustic calibrator had been laboratory-calibrated to a traceable standard within the year preceding the survey.

4.5 Noise measurements were carried out at two long term measurement locations. The measurement locations are shown in Figure 1 and are described as follows:

- Position 1: The microphone was located in a free-field position on the development site. The mic was 1.5m above the ground.
- Position 2: The microphone was located in a free-field position approx. 15m from Bedfont Road, to represent the nearest residential properties to the site. The mic was at 1.5m above the ground.

Sound Survey Results

4.6 The weather during the survey was suitable for noise measurement, it being predominantly dry with wind speeds of less than 5m/s.

4.7 The dominant sound sources were from road traffic on the surrounding road network including the Southern Perimeter Road and Bedfont Road and aircraft noise, both from ground movements and aircraft take-offs and landings.

4.8 The sound survey results are summarised in Table 4.1, aggregated across the daytime and night-time periods. Full survey results are set out graphically in Appendix C.

Table 4.1 Summary of measured free-field noise levels, dB

Measurement Location	Date	Period	Duration, T	$L_{Aeq,T}$	L_{AFmax}	$L_{A10,T}$	$L_{A90,T}$
1	10 Nov 25	Day	10 hrs, 30 min	60.1	71.0	62.0	56.4
	10/11 Nov 25	Night	8 hours	55.2	64.9	57.2	50.2
	11 Nov 25	Day	16 hours	59.8	69.6	61.8	56.0
	11/12 Nov 25	Night	8 hours	56.1	66.4	58.8	49.9
	12 Nov 25	Day	16 hours	58.6	68.7	60.5	55.1
	12/13 Nov 25	Night	8 hours	55.5	63.8	57.9	49.7
	13 Nov 25	Day	5 hours	58.1	65.6	60.1	54.6
2	10 Nov 25	Day	9 hrs, 45 min	63.8	76.0	67.1	56.8
	10/11 Nov 25	Night	8 hours	61.2	74.7	64.1	51.9
	11 Nov 25	Day	16 hours	63.4	75.2	66.7	56.4
	11/12 Nov 25	Night	8 hours	59.8	73.8	62.2	49.2
	12 Nov 25	Day	16 hours	63.8	76.3	67.0	56.7
	12/13 Nov 25	Night	8 hours	59.8	73.6	62.5	49.6
	13 Nov 25	Day	5 hrs,15 min	63.2	75.9	66.8	55.6

Note: (1) – The $L_{A90,T}$,L_{AFmax} and $L_{A10,T}$ values are the arithmetic means of the $L_{A90,T}$, L_{AFmax} and $L_{A10,T}$ measurements for each period.

5. Noise Assessment

Assumptions for Noise Predictions

Noise Sensitive Receptors

5.1 Further to the site visit to undertake the baseline noise survey, it was observed that the nearest residential properties to the development site, as shown on Figure 1, are as follows:

- Receptor 1 – A stand-alone bungalow in commercial use but may also be used as residential accommodation.
- Receptor 2 – 3 storey residential accommodation.
- Receptor 3 – 3 storey residential accommodation.

HGV Movements

5.2 The project's transport consultants, Mott MacDonald, have stated that the development is proposed to generate 299 heavy goods vehicles (HGVs) per 16 hour day (07:00-23:00 hours) and 93 HGVs at night (23:00-07:00 hours). For the purposes of the BS4142 assessment this equates to an average of 19 HGVs in an hourly period in the daytime and 3 HGVs in a 15 minute period at night.

5.3 In an hourly daytime period (used for BS4142 assessment) it has therefore been assumed that there will be 19 HGVs reversing, 19 HGVs loading and 19 HGVs starting up and pulling away;

5.4 In a 15 minute night-time period (used for BS4142 assessment) it has therefore been assumed that there will be 3 HGVs reversing, 3 HGVs loading and 3 HGVs starting up and pulling away;

Technical Information to enable Noise Predictions

5.5 The following assumptions have been used for the noise predictions:

- The distribution of development traffic on each side of the development building has been assumed to correlate with the number of HGV bays on each side;
- Hard ground cover and site topography is based on site observations; and
- The site will operate for 24 hours a day, 7 days a week.

5.6 Typical time periods for each activity in the yard area, based on observations at similar development units are:

- 60 seconds for a HGV reversing with reverse 'squark' bleeper;
- 60 seconds for a HGV to start up and pull away;
- 30 minutes for HGV loading/unloading activities.

5.7 The following source terms have been used in the noise assessment, based on noise measurements at similar development units, and are reproduced below:

Table 5.1: HGV Source Terms Used for the Noise Predictions

Activity	Sound Power Levels L_w (dB) in each octave band (Hz)								dB(A)
	63	125	250	500	1K	2K	4K	8K	
HGV Reverse	101	94	94	91	94	95	84	79	99
HGV Start-up & Pull Away	107	101	98	97	97	94	87	78	101
HGV Load/Unload	90	89	90	89	86	83	79	73	91

Industrial & Commercial Noise

5.8 The noise levels for HGV Loading/Unloading, HGV Start Up and Pull Away and HGV Reversing in the yards located to the east and west of the building in the day and night-time periods have been predicted at the nearest residential properties and are shown in Table 5.2, below. The location of these properties is shown in Figure 1.

Table 5.2: Predicted Noise from HGV Loading/Unloading, Start Up and Pull Away and Reverse in Yards

Receptor Location	Predicted Noise Level, dB	
	Day ($L_{Aeq,1hour}$)	Night ($L_{Aeq,15\ min}$)
1 (ground floor)	46	46
2 (all floors)	46	46
3 (all floors)	43	44

5.9 The assessment of noise HGV Loading/Unloading, HGV Start Up and Pull Away and HGV Reversing from the proposed development has been considered against the measured background noise levels in the day and night-time periods using the methodology provided in BS4142:2014+A1:2019.

5.10 The measured background noise levels at Position 2 are considered to be representative of the noise at the nearest residential properties on Bedfont Road and Long Lane. The background noise levels in the day and night-time periods have been analysed and the results are shown in Table 5.3, below.

Table 5.3: Summary of Background Noise Levels at Position 2

Period	Mode $L_{A90,T}$ dB	Average $L_{A90,T}$ dB	Lowest $L_{A90,15\ min}$ dB
2 Days	56	57	52
3 Nights	47	50	43

5.11 In relation to the 'background sound level', BS4142 states that:

'it is important to ensure that values are reliable and suitably represent both the particular circumstances and periods of interest. For this purpose, the objective is not simply to ascertain a lowest background sound level, but rather to quantify what is typical during particular time periods'.

5.12 Based on an analysis of the measured background noise levels, it is considered that the 'Mode' background sound levels provide typical levels for the BS4142 assessment.

5.13 BS4142 indicates that an acoustic correction should be applied if the noise is tonal, impulsive or intermittent. It is considered that the loading/unloading activities and HGV movements will provide impulsivity that may be just perceptible at the nearest receptors and a 3 dB correction has been added to both the day and night-time assessment.

5.14 The day and night-time BS4142 assessment for the proposed development when considered at the nearest residential properties is shown in Table 5.4 below.

Table 5.4: BS4142 Noise Assessment

BS4142 Assessment	Day	Night
Receptor 1 (Ground floor bungalow)		
Specific Noise Level	$L_{Aeq,T}$ 46 dB	$L_{Aeq,T}$ 46 dB
Background Sound Level (mode)	$L_{A90,T}$ 56 dB	$L_{A90,T}$ 47 dB
Acoustic Correction	+3 dB	+3 dB
Rating Level	(46+3) = 49 dB	(46+3) = 49 dB
Excess of rating over background level	(49-56) = -7 dB	(49-47) = +2 dB
Receptor 2 (all floors)		
Specific Noise Level	$L_{Aeq,T}$ 46 dB	$L_{Aeq,T}$ 46 dB
Background Sound Level (mode)	$L_{A90,T}$ 56 dB	$L_{A90,T}$ 47 dB
Acoustic Correction	+3 dB	+3 dB
Rating Level	(46+3) = 49 dB	(46+3) = 49 dB
Excess of rating over background level	(49-56) = -7 dB	(49-47) = +2 dB
Receptor 3 (all floors)		
Specific Noise Level	$L_{Aeq,T}$ 43 dB	$L_{Aeq,T}$ 44 dB
Background Sound Level (mode)	$L_{A90,T}$ 56 dB	$L_{A90,T}$ 47 dB
Acoustic Correction	+3 dB	+3 dB
Rating Level	(43+3) = 46 dB	(44+3) = 47 dB
Excess of rating over background level	(46-56) = -10 dB	(47-47) = 0 dB

5.15 The BS4142 noise assessment provides an excess of rating over background level of between -7 to -10 dB in the daytime at the nearest residential properties. At night the BS4142 noise assessment provides an excess of rating over background level of between 0 to +2 dB at the nearest residential properties.

5.16 BS4142 states that a difference of around +5 dB is likely to be an indication of an adverse impact and the lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

5.17 The context is provided by the existing traffic noise levels at the existing properties. The measured traffic noise levels without the development at Position 2 are $L_{Aeq,16\ hr}$ 64 dB in the daytime and $L_{Aeq,16\ hr}$ 60 dB at night. This indicates that at the nearest noise sensitive receptor to the site (Receptor 1) the noise from activities at the development is predicted to be 18 dB lower in the daytime and 14 dB lower at night than the existing traffic noise.

5.18 BS4142 requires that the uncertainty of the assessment is considered and this is provided in Appendix E.

HGVs Circulating in Yard

5.19 The noise from HGV movements entering and leaving the development site and circulating the development building have been calculated separately from the noise from activities in the yard area (loading activities and HGV manoeuvres). This is because the noise from loading activities and HGVs manoeuvres is within the remit of BS4142:2014+A1:2019 whereas the noise from HGV traffic flows entering and leaving the development site and circulating the development building does not fall within the scope of the standard.

5.20 The predicted noise from HGV movements entering and leaving the development site and circulating the development have used the prediction methodology provided in BS5228-1:2009 +A1:2014 for mobile plant using a regular well defined route (F.2.5 of the British Standard). This methodology has been adopted as the HGV flows are too low to enable the Calculation of Road Traffic Noise, CRTN 1988 methodology to be used.

5.21 The predicted day and night-time noise from HGV movements entering and leaving the development site and circulating the development building are shown in Table 5.5.

Table 5.5: Predicted Noise from HGV movements entering and leaving the development site and circulating the development building.

Receptor Location	Predicted Noise Level, dB	
	Day ($L_{Aeq,16\ hr}$)	Night ($L_{Aeq,8\ hour}$)
1 (ground floor)	36	34
2 (all floors)	34	32
3 (all floors)	32	30

5.22 The measured traffic noise levels without the development at Position 2 are $L_{Aeq,16\ hr}$ 64 dB in the daytime and $L_{Aeq,16\ hr}$ 60 dB at night. This indicates that at the nearest noise sensitive receptor to the site (Receptor 1) the noise from HGV movements entering and leaving the development site and circulating the development building is predicted to be 28 dB lower in the daytime and 26 dB lower at night than the existing noise climate. The predicted noise levels from these HGV movements are significantly below the existing ambient noise levels at the nearest residential properties and the noise impact is considered to be negligible.

Maximum Noise Levels

5.23 Maximum noise levels that may occur from activities at the development site have been calculated in the night-time period at the nearest receptor locations, taking the intervening buildings and the receptor heights into consideration. The noise predictions are based on a maximum noise level of $L_{Amax,f}$ 85 dB at 10m from a reversing HGV.

5.24 The highest predicted maximum noise level is at receptor 1 with a level of $L_{Amax,f}$ 63 dB. The existing maximum noise levels at night over the three nights of the survey ranged from $L_{Amax,f}$ 70 to 80 dB as shown in Appendix C. This indicates that the maximum noise levels from night-time activities at the development site will be significantly below the existing maximum noise levels at the nearest receptors.

5.25 The internal noise target for maximum noise levels, based on the WHO Community Noise Guidelines 1999 is that '*indoor sound pressure levels should not exceed approximately 45 dB L_{Amax} more that 10 to 15 times per night*'. Clearly, due to the existing noise climate, windows at the nearest receptors will be closed to provide reasonable internal noise levels. A closed window will provide at least 25 dB sound attenuation and on this basis the predicted internal noise level of $L_{Amax,f}$ 41 dB, when taking a 3 dB façade correction into account, is well below the noise target for maximum noise levels and it is considered that there will be no adverse effect due to maximum noise levels from the development site.

Plant & Internal Unit Noise

5.26 A noise assessment against the guidelines provided by BS4142:2014+A1:2019 will be undertaken when details of internal noise from within the unit and the location and source noise levels from any external mechanical plant noise are available. On completion of the noise assessment, appropriate noise mitigation measures will be implemented, if necessary, to meet the BS4142 noise targets at the nearest receptor locations. This can be secured via an appropriate planning condition.

Traffic Noise

5.27 The noise climate at the nearest residential properties to the development site is dominated by road traffic noise from Bedfont Road and the Southern Perimeter Road in both the day and night-time periods. The traffic generated by the proposed development including 299 HGVs in the daytime and 93 HGVs at night plus cars associated with the workforce at the site are similar to the previous industrial/commercial use and well below the existing traffic flows on both Bedfont Road and the Southern Perimeter Road. On this basis, the change in noise level due to the development traffic on the existing highways is considered to be below 1 dB in both the day and night-time periods.

5.28 DMRB considers an increase in traffic noise of less than 1 dB to be a negligible increase in the both the short and long term.

6. Noise Mitigation

6.1 The BS4142 noise assessment for activities within the external yard of the development site provides '*an indication of the specific sound source having a low impact*' in the daytime. At night, the BS4142 assessment is below the level where the noise '*is likely to be an indication of an adverse impact*' when taking the context of the predicted development noise being 18 dB lower in the daytime and 14 dB lower at night than the existing ambient noise levels due to road traffic.

6.2 In our professional opinion, as the operational noise is well below the existing ambient at the nearest residential properties it is considered that no further noise mitigation is required.

6.3 A noise assessment against the guidelines provided by BS4142:2014+A1:2019 will be undertaken when details of internal noise from within the unit and the location and source noise levels from any external mechanical plant noise are available. On completion of the noise assessment, appropriate noise mitigation measures will be implemented, if necessary, to meet the BS4142 noise targets at the nearest receptor locations. This can be secured via an appropriate planning condition.

6.4 The change in noise level due to the development traffic on the existing highways is predicted to be below 1 dB in both the day and night-time periods. DMRB considers that an increase in traffic noise of less than 1 dB to be a negligible increase in the both the short and long term.

7. Conclusion

7.1 Phlorum Limited has been commissioned by Avison Young on behalf of Tritax London Logistics Fund to undertake a noise assessment for Building 1071, Southampton Road, Heathrow ('Project Regis'). The project comprises the redevelopment of the existing site, providing a new industrial warehouse development totalling circa 11,500sqft GEA.

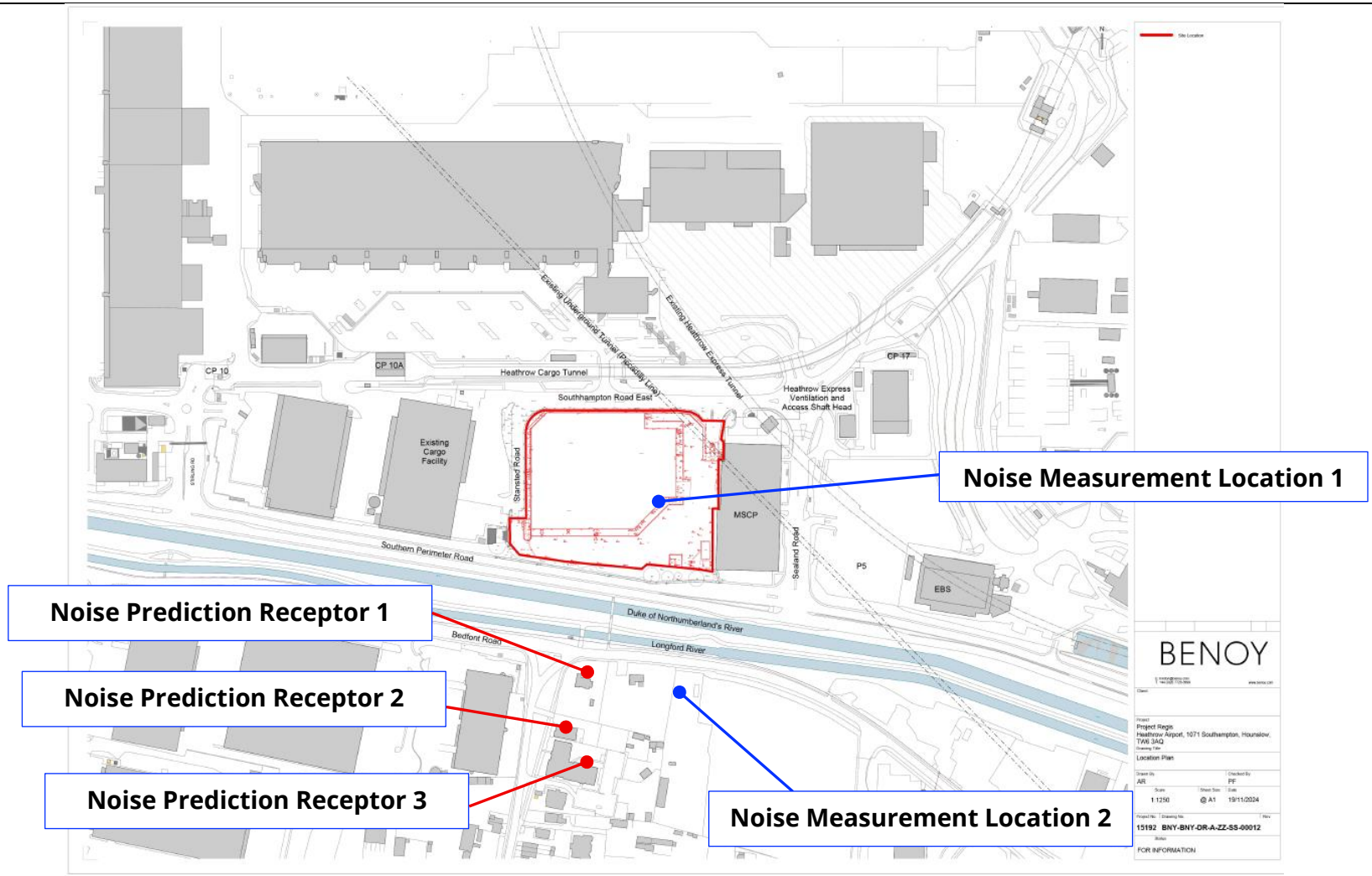
7.2 The BS4142 noise assessment for activities within the external yard of the development site provides '*an indication of the specific sound source having a low impact*' in the daytime. At night, the BS4142 assessment is below the level where the noise *'is likely to be an indication of an adverse impact'* when taking the context of the predicted development noise being 18 dB lower in the daytime and 14 dB lower at night than the existing ambient noise levels due to road traffic.

7.3 A noise assessment against the guidelines provided by BS4142:2014+A1:2019 will be undertaken when details of internal noise from within the unit and the location and source noise levels from any external mechanical plant noise are available. On completion of the noise assessment, appropriate noise mitigation measures will be implemented, if necessary, to meet the BS4142 noise targets at the nearest receptor locations. This can be secured via an appropriate planning condition.

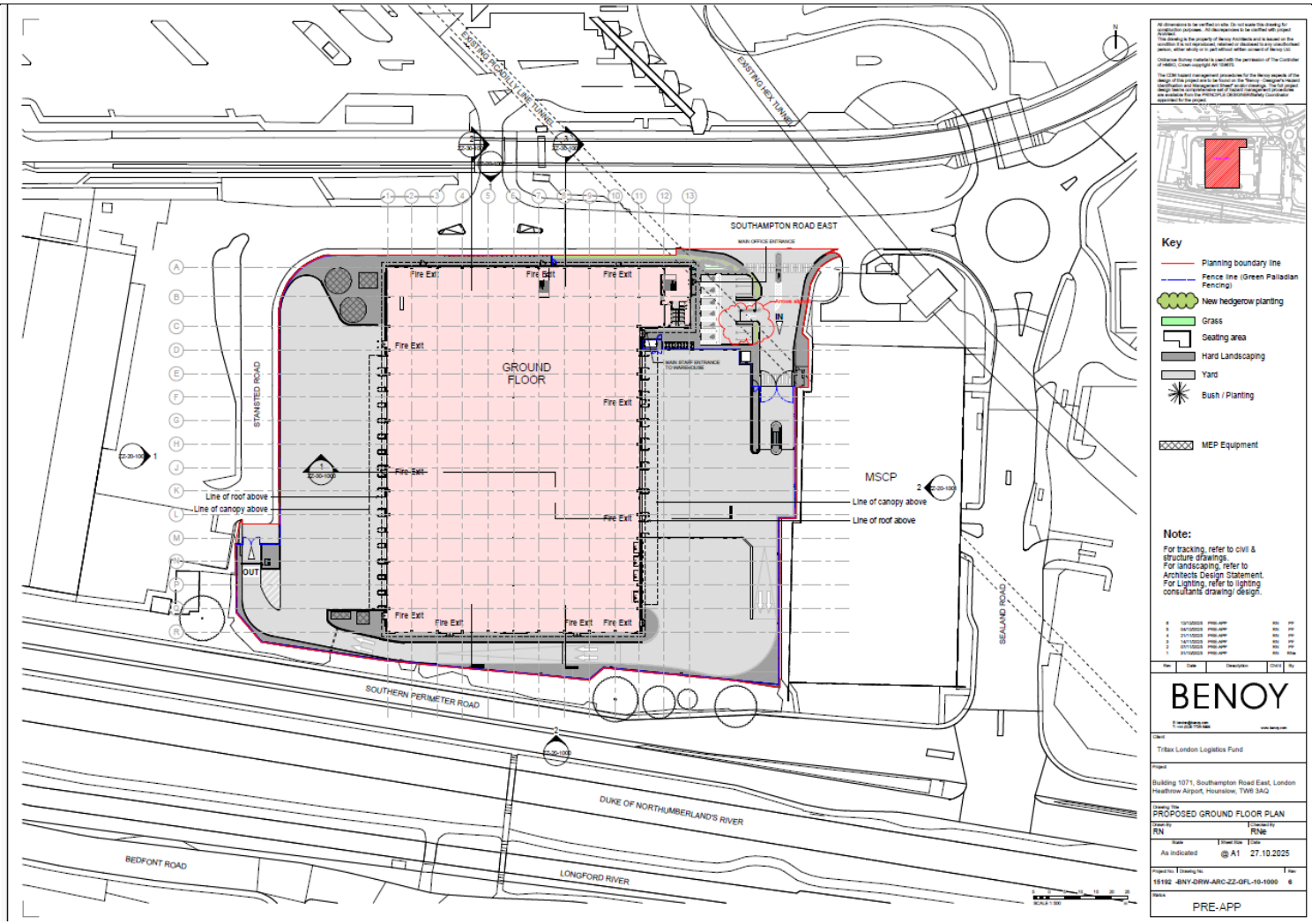
7.4 The change in noise level due to the development traffic on the existing highways is less than 1 dB in both the day and night-time periods. DMRB considers that an increase in traffic noise of less than 1 dB to be a negligible increase in both the short and long term.

7.5 On the basis of this assessment, it is considered that noise from the proposed development will be within acceptable levels at the nearest noise sensitive properties.

Figures & Appendices



phlorum	**Location Plan showing Noise Measurement and Prediction Locations**	**Job No. 14353** **Figure No. 1**



phlorum	**Proposed Ground Floor Plan of Development**	**Job No. 14353** **Figure No. 2**

Appendix A: Introduction to Noise and Glossary of Terminology

Appendix A: Introduction to Noise and Glossary of Terminology

Noise is defined as unwanted sound. The human ear is able to respond to sound in the frequency range 18Hz (deep bass) to 18,000Hz (high treble) and over the audible range of 0dB (the threshold of perception) to 140dB (the onset of pain). The ear does not respond equally to different frequencies of the same magnitude, but is more responsive to mid-frequencies than to lower or higher frequencies. To quantify noise in a manner that approximates the response of the human ear, a weighting (filtering) mechanism is used. This reduces the importance of lower and higher frequencies, approximating the response of the human ear.

Furthermore, the perception of noise may be determined by a number of other factors, which may not necessarily be acoustic. Noise can be perceived to be louder or more noticeable if the source of the noise is observed; e.g. roads, trains, factories, building sites etc. In general, the impact of noise depends upon its level, the margin by which it exceeds the background level, its character and its variation over a given period of time. In some cases, the time of day and other acoustic features such as tonality may be important, as may the disposition of the affected individual. Any assessment of noise should give due consideration to all of these factors when assessing the significance of a noise source. Various noise indices have been derived to describe the fluctuation of noise levels that vary over time. Usually, these noise indices relate to specific types of noise, and as such different noise indices are used to describe road traffic noise, background noise, construction noise, etc.

The weighting mechanism that best corresponds to the response of the human ear is the 'A'-weighting scale. This is widely used for environmental noise measurement and the levels are denoted as dB(A) or L_{Aeq}, L_{A10}, etc, according to the parameter being measured.

Noise is measured on the decibel scale, which is logarithmic rather than linear. As a result of this, a 3dB increase in sound level represents a doubling of the sound energy present. Judgement of sound is subjective, but as a general guide a 10dB(A) increase can be taken to represent a doubling of loudness, whilst an increase in the order of 3dB(A) is generally regarded as the minimum difference needed to perceive a change. Table A.1 sets out examples of noise levels typically experienced during everyday activities. Table A.2 sets out an explanation of the terminology used in this report.

Table A.1: Typical sound levels found in the environment

Sound Level	Location
0 to 10dB(A)	Threshold of hearing
10 to 20dB(A)	Broadcasting studio
20 to 30dB(A)	Quiet bedroom at night
30 to 40dB(A)	Living room during the day
40 to 50dB(A)	Typical office
50 to 60dB(A)	Inside a car

Sound Level	Location
60 to 70dB(A)	Typical high street
70 to 90dB(A)	Inside a factory or noisy pub
100 to 110dB(A)	Burglar Alarm at 1m
110 to 130dB(A)	Pneumatic drill at 1m away
140dB(A)	Threshold of Pain

Table A.2: Terminology relating to noise

Term	Description
Sound Pressure	Sound, or sound pressure, is a fluctuation in air pressure over the static ambient pressure.
Sound Pressure Level (Sound Level)	The sound level is the sound pressure relative to a standard reference pressure of 20μPa ($20x10^{-6}$ Pascals) on a decibel scale.
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s_1 and s_2 is given by $20 \log_{10} (s_1/s_2)$. The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20μPa.
A-weighting, dB(A)	The unit of sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at some frequencies.
Noise Level Indices	Noise levels usually fluctuate over time, so it is often necessary to consider an average or statistical noise level. This can be done in several ways, so a number of different noise indices have been defined, according to how the averaging or statistics are carried out.
$L_{Aeq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level during the period T. L_{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{90,T}$ or Background Noise Level	A noise level index. The noise level exceeded for 90% of the time over the period T. L_{90} can be considered to be the "average minimum" noise level and is often used to describe the background noise.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over the period T. L_{10} can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise.
Free-field	Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5 metres

Term	Description
Façade	At a distance of 1 metre in front of a large sound reflecting object such as a building façade.
Fast Time Weighting	An averaging time used in sound level meters. Defined in BS EN 61672.

Appendix B: Noise Monitoring Equipment

Table B1: Noise monitoring equipment

Position	Equipment	Serial Number	Calibration Date
1	LD820 Sound Meter	A1144	22/10/2025
	Mic	31825	
	Preamp	2054	
2	LD820 Sound Meter	1350	
	Mic	37024	
	Preamp	1568	
All positions	LD CAL200 Calibrator	3723	

Appendix C: Noise Measurement Results

Figure C1: Free-Field Noise Levels at Position 1

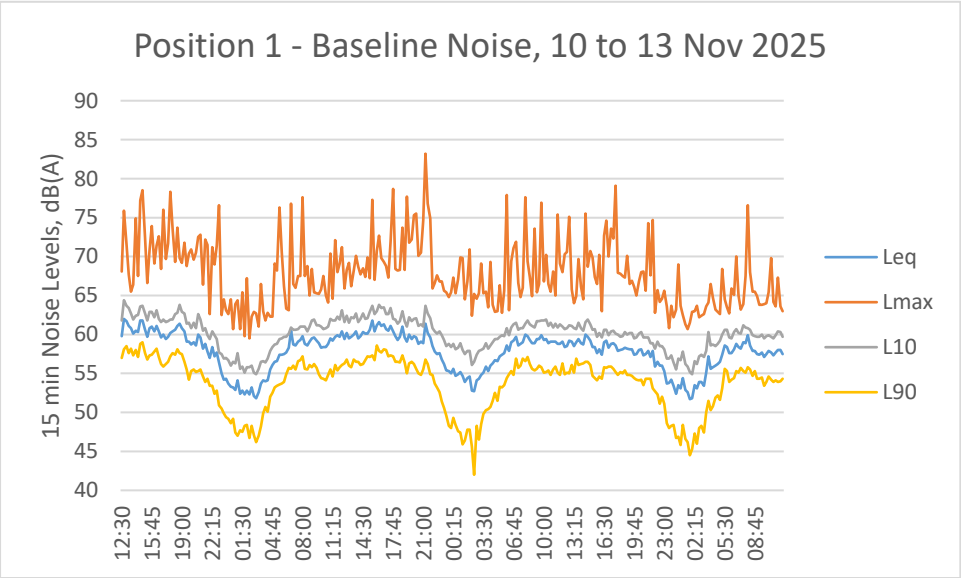
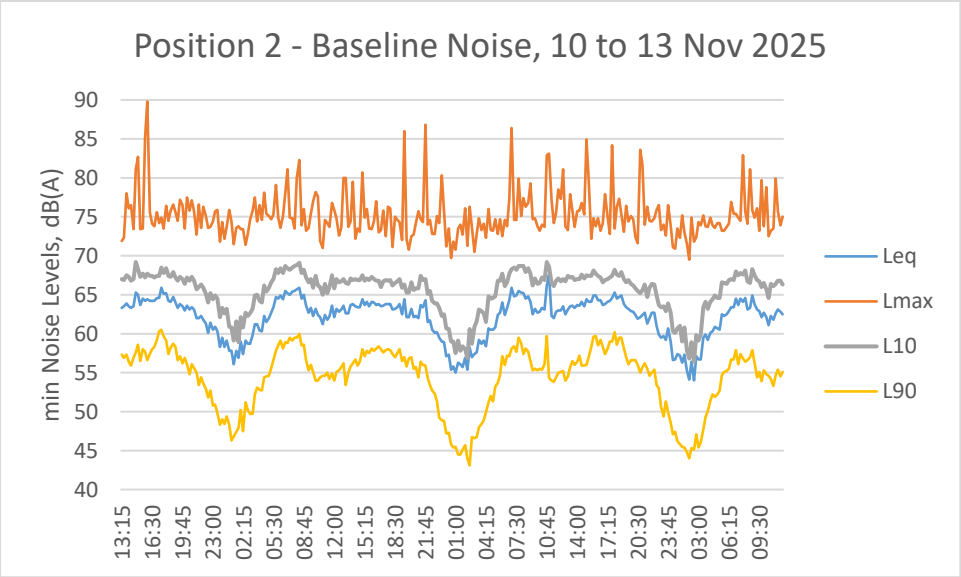


Figure C2: Free-Field Noise Levels at Position 2



Appendix D: Uncertainty Assessment for BS4142

Uncertainty Assessment for BS4142

BS4142 requires that the level of uncertainty in the measured data and associated calculations is considered in the assessment. The Standard recommends that steps should be taken to reduce the level of uncertainty. BS 4142 states that measurement uncertainty depends on a number of factors, including the following, which may be applicable to the Proposed Development and, therefore, need to be considered:

- 1. the complexity and level of variability of the residual acoustic environment;
- 2. the location(s) selected for taking the measurements;
- 3. the measurement time intervals;
- 4. the range of times when the measurements have been taken;
- 5. the range of suitable weather conditions during which measurements have been taken;
- 6. the level of rounding of each measurement recorded; and
- 7. the instrumentation used.

Each of the measurement uncertainty factors outlined above have been considered and are discussed in Table D.1.

Table D.1: Measurement Uncertainty Factors

Measurement Uncertainty Factor Reference	Level of Uncertainty	Discussion
1	0 dB	Residual acoustic environment is relatively constant and dominated by existing traffic and airport noise, hence no correction for a complex residual acoustic environment.
2	0 dB	Measuring at locations that are representative of the closest affected receptors to the site has enabled the determination of robust background sound levels.
3	0 dB	Measurement time intervals were set in accordance with BS 4142, hence no further correction needs to be made.
4	0 dB	Measurements were undertaken over a continuous diurnal time period.
5	0 dB	No periods of significant wind or precipitation were noted.
6	0 dB	Measured values were rounded to 0.1 dB, therefore rounding would not have had a significant impact on the overall typical background sound levels.
7	0 dB	The acoustic measurement equipment accorded with Type 1 specification of British Standard 61672 and were deployed with appropriate wind shields.

In summary, a correction of 0 dB has been included in the assessment, to account for measurement uncertainty.

Phlorum Limited

Head Office & Registered Office:
Unit 12
Hunns Mere Way
Woodingdean
Brighton
East Sussex
BN2 6AH
T: 01273 307 167

info@phlorum.com
www.phlorum.com

Registered in England & Wales. Reg No. 4967256