
OPM DEVELOPMENTS LIMITED

NOISE IMPACT ASSESSMENT REPORT

SOUTH LODGE, BELLE VUE LANE, EAST BOLDON
NE36 0AN

Client: OPM Developments Limited

Report Ref: P9738 NA1-V1

Issue Date: 21st May 2026

Document Status: Version 1



DATE ISSUED: 21st MAY 2026

REPORT REFERENCE: P9738-NA1-V1

OPM DEVELOPMENTS LIMITED

**SOUTH LODGE, BELLE VUE LANE,
EAST BOLDON NE36 0AN.**

REPORT VERSION CONTROL:

Document Reference	Date	Report Prepared by	Report Checked / Authorised by
P9738-NA1-V1	21/05/2026	M. MAY, BSc (Hons), AMIOA	J. McLelland Ba (Hons), PGDip, MIOA

This report has been prepared by NoiseAir Limited with all reasonable skill, care and diligence, within the terms of the contract with the client. The report is confidential to the Client and NoiseAir Limited accept no responsibility of whatever nature to third parties to whom this report may be made known.

No part of this document may be reproduced without the prior written approval of NoiseAir Limited.

CONTENTS

1	INTRODUCTION	1
2	ASSESSMENT METHODOLOGY AND SCOPE OF WORKS	5
3	ACOUSTIC SURVEY	11
4	3D SOUND MODEL	15
5	NOISE IMPACT ASSESSMENT	18
6	RECOMMENDATIONS	21
7	CONCLUSIONS	22

APPENDICES

APPENDIX A - REPORT LIMITATIONS

APPENDIX B - GLOSSARY

1 INTRODUCTION

1.1 Overview

- 1.1.1 By instruction from OPM Developments Limited ('the client'), NoiseAir was commissioned to undertake a noise impact assessment (NIA) to accompany a planning application in relation to a proposed change of use at: South Lodge, Belle Vue Lane, East Boldon NE36 0AN, herein referred to as the 'Development Site'.
- 1.1.2 General limitations of this report are outlined in **Appendix A**.

1.2 Site Description

- 1.2.1 The development site is an existing outbuilding (occupying approx. 126sqm) and is situated at approximate National Grid Reference (NGR): 436478, 560683. This is within the applicants wider 2.5-hectare landholding (encompassing the main house, associated structures, and landscaped grounds of South Lodge and South Lodge Cottage) and lays within the jurisdiction of South Tyneside Council, herein referred to as 'The Local Authority' (LA).
- 1.2.2 The development site is situated within a small rural hamlet surrounded by open agricultural land and is in proximity of Belle Vue Lane to the west and Mundles Lane to the east.
- 1.2.3 Other than incidental living accommodation (under the ownership of the applicant), the nearest noise sensitive receptor is identified as residential dwelling located opposite Belle Vue Lane, approximately 20 m west of the application boundary.
- 1.2.4 Distant traffic noise attributed to the local road network is considered the underlying noise source in the locality of the development site, with secondary influence from natural environmental sounds such as birdsong.
- 1.2.5 **Figure 1** shows an aerial photograph of the development site with respect to the local area and its context.

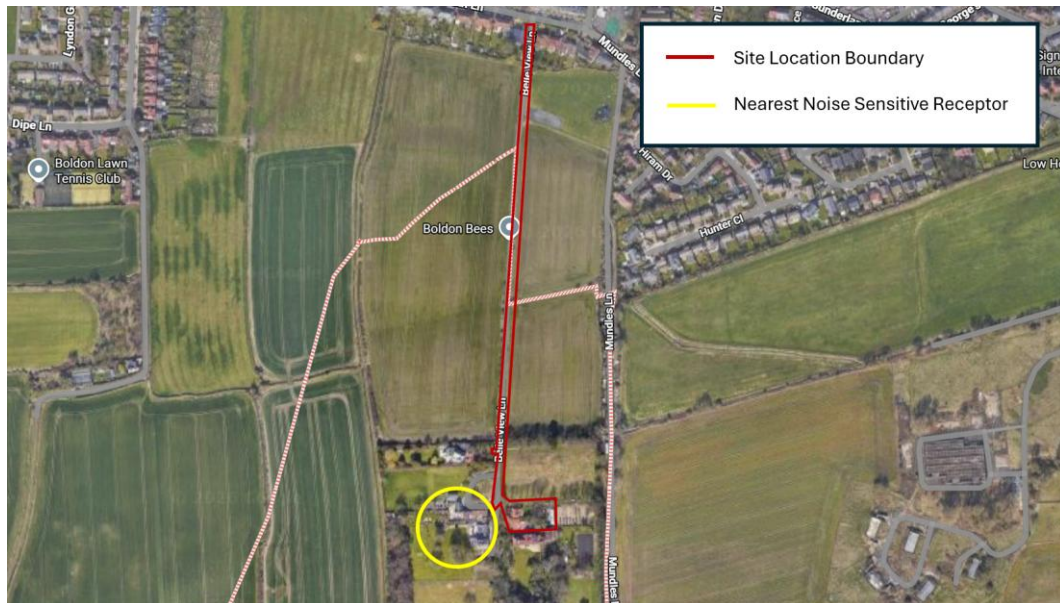


Figure 1: Site aerial photograph.

1.3 Development Proposals

- 1.3.1 At the time of writing, proposals provided to NoiseAir detail the conversion/change of use of an existing stable/storage building, into a multi-functional teaching and production space under planning use 'Class B2'.
- 1.3.2 It is proposed that the building will facilitate:
- A teaching area for approx. 25 students, focused on beekeeping education;
 - A microbrewery;
 - A Cheesery; and
 - Ancillary facilities including kitchenette, disabled access WC and bathroom.
- 1.3.3 The client has advised that production within both the microbrewery and cheesery are to be small-scale, adopting traditional methods without the use of automation. Turning in the cheesery and bottling in the microbrewery are to be done by hand, and the processes of kegging and pressurised line cleaning will not form part of operational requirements. This is not only due to the operating ethos of the proposal but also due to physical limitations attributed to space requirements necessary for large scale production.
- 1.3.4 Where cleaning of equipment is required, (particularly in respect of the microbrewery) this will be done by turning water at low speed within the brewing chamber directly.
- 1.3.5 Hours of operation are yet to be confirmed; however, the client has indicated that these are most likely to be within the period:
- 09:00 – 17:00 Monday – Friday.

-
- 1.3.6 It is understood that doors and windows will be closed during times of production.
- 1.3.7 Proposals at the time of writing do not demonstrate the intention to employ external plant equipment around the premises; however, it has been relayed that domestic style filter fans may feature in the final design as a precautionary measure for odour and general ventilation.
- 1.3.8 The client's agent (Building Design Northern) has advised however; assessment of the aforementioned is outside the scope of Noiseair's current engagement and is for consideration at a later, more detailed design stage (should assessment be required).
- 1.3.9 For reference, the proposed floor plan is detailed within **Figure 2**.



2 ASSESSMENT METHODOLOGY AND SCOPE OF WORKS

2.1 Planning Guidance and Noise

- 2.1.1 This acoustic report has been prepared as accompanying documentation for a planning application and, therefore, it is considered that reference should be made to the appropriate planning guidance documentation, specifically:

National Planning Policy Framework (NPPF), 2024;
Noise Policy Statement for England (NPSE), 2010;
Planning Practice Guidance – Noise, 2021;

- 2.1.2 A summary of the relevant planning documentation and its relevance with respect to noise is provided below.

2.2 National Planning Policy Framework [NPPF 2024]

- 2.2.1 The NPPF was published in March 2012 with the most recent version updated in December 2024. The NPPF sets out the Governments planning policies for England and how these are expected to be applied across a number of areas.

- 2.2.2 With respect to noise specifically, Section 15, Paragraph 187(e) of the NPPF 2024 states:

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

- 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;’*

- 2.2.3 The NPPF 2024 continues to state in Paragraph 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:

- *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;*
- *identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and;*

2.3 Noise Policy Statement for England [NPSE 2010]

2.3.1 The Noise Policy Statement for England (NPSE), published in March 2010, states the long-term vision of Government noise policy is to “*promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development*”.

2.3.2 This long-term vision is supported by the following aims; through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

Avoid significant adverse impacts on health and quality of life;

Mitigate and minimise adverse impacts on health and quality of life;

Where possible, contribute to the improvement of health and quality of life.

2.3.3 The NPSE also introduces the below categories with respect to ‘adverse impacts’.

‘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.

SOAEL – Significant Observed Adverse Effect Level

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

2.3.4 The first aim of the NPSE states that significant adverse effects on health and quality of life should be avoided. The second aim refers to the situation where the impact lies somewhere

between LOAEL and SOAEL, and it requires that all reasonable steps be taken to mitigate and minimise the adverse effects of noise. However, the requirement to mitigate and minimise the adverse effects of noise does not mean that such adverse effects cannot occur.

2.4 Planning Practice Guidance - Noise [PPG 2021]

2.4.1 The National Planning Practice Guidance (PPG) is a web-based resource, launched by the Department for Communities and Local Government (DCLG) in March 2014 to support the NPPF¹.

2.4.2 The PPG advises on how planning can manage potential noise impacts in new development. The guidance is regularly reviewed and updated, and noise is listed as a specific category, the noise category was most recently updated on 24th June 2021.

2.4.3 The PPG provides further detail about how the effect levels can be recognised. Above the NOEL noise becomes noticeable, however it has no adverse effect as it does not cause any change in behaviour or attitude. Once noise crosses the LOAEL threshold it begins to have an adverse effect and consideration needs to be given to mitigating and minimising those effects, taking account of the economic and social benefits being derived from the activity causing the noise.

2.4.4 Increasing noise exposure further might cause the SOAEL threshold to be crossed. If the exposure is above this level the planning process should be used to avoid the 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.

2.4.5 At the highest extreme the situation should be prevented from occurring regardless of the benefits which might arise.

2.4.6 **Table 1** summarises the noise exposure hierarchy outlined within the PPG.

Table 1: National Planning Practice Guidance 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

¹ <https://www.gov.uk/guidance/noise--2>

Table 1: National Planning Practice Guidance noise exposure hierarchy			
Perception	Examples of Outcomes	Increasing Effect Level	Action
Lowest Observed 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 non-awakening 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 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 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
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

2.5 Scope of Works

2.5.1 Potential noise impact along with the general principles regarding assessment have been reviewed by NoiseAir.

2.5.2 It is considered that an NIA should be undertaken (primarily) to assess the potential for adverse impact of noise from:

- Internal Noise Breakout in relation to nearby residential receptors.

2.5.3 Given the site-specific proposals detailed within section 1.3, it is considered that operational noise breakout is likely to be minimal-moderate and generally lower than that of similar operations at alternative locations.

2.5.4 The above being said, the application is for a change of planning class to 'B2', and it is therefore reasoned that subsequent noise impact assessment be conducted (adopting a worst-case approach) accounting for noise levels typical of the proposed class use. This will

safeguard against potential future expansion and/or change in occupancy which may see rise to operational noise levels.

- 2.5.5 The scope of the assessment includes consideration of noise emissions at nearby noise sensitive receptors (NSRs) and extends to the immediate vicinity surrounding the development site.

2.6 Assessment Criteria

- 2.6.1 In order to achieve noise levels which are considered to be in alignment with the planning approaches and policies discussed in Section 2.1, it is considered that all efforts are made to ensure that existing occupants are unlikely to be exposed to noise levels which might breach the LOEL criteria.
- 2.6.2 It should be noted however that planning guidance does not preclude development where the LOEL is likely to be breached in certain circumstances as long as reasonable efforts are made to mitigate and reduce such an effect.
- 2.6.3 Given the presence of residential accommodation in the vicinity of the a commercial development site, an assessment in accordance with BS 4142:2014+A1:2019 has been undertaken.
- 2.6.4 A summary of all the aforementioned relevant assessment standard is presented below.

2.7 BS4142:2014+A1:2019 – Methods for Rating and Assessing Industrial and Commercial Sound [BS414:2014]

- 2.7.1 British Standard 4142:2014 - Methods for rating and assessing industrial and commercial sound, sets the methodology for rating and assessing sound of an industrial and commercial nature, which includes sound from fixed installations such as mechanical and electrical plant and equipment.
- 2.7.2 In BS 4142:2014, a noise rating is determined and compared with the existing local background sound level based on several more cumulative acoustic feature corrections to apply where appropriate. For example, if the noise includes a distinguishable tone, impulse, intermittency or other readily distinguishable sound characteristic, then additional cumulative penalties individually ranging from 0 to 9 dB may be applied depending on the type of noise.

-
- 2.7.3 BS 4142:2014 seeks to determine a “representative” background sound level, stating that “...the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods”.
- 2.7.4 The assessment of the impact depends upon the margin by which the rating level of the specific sound source exceeds the background sound level but also promotes a consideration of the context in which the sound occurs when making an assessment. BS 4142:2014 states that an initial estimate of the impact of the specific sound is made by subtracting the measured background sound level from the rating level, while considering the following points:
- Typically, the greater this difference, the greater 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; 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.
- 2.7.5 Therefore, a BS 4142:2014 assessment may deduce a low impact where the specific sound level is below the background sound level.

3 ACOUSTIC SURVEY

3.1 Acoustic Survey Details

- 3.1.1 To conduct the assessment, NoiseAir carried out a base line acoustic survey of current environmental noise conditions between the dates 16th -17th April 2026.
- 3.1.2 Environmental Noise monitoring was conducted at one location (ML1).
- 3.1.3 The approximate siting location of ML1 is demonstrated within **Figure 3** and detailed within **Table 2**.



Figure 3: Approximate siting location of ML1.

Table 2: Summary of Noise Monitoring Location				
Monitor Location Number	Location Description	Time Period Monitored		Attended or Unattended Monitoring
		Start	End	
ML1	Positioned c. 1.5 m from ground level. The microphone was in free field conditions.	15:13 16/04/26	17:31 17/04/26	Unattended

- 3.1.4 ML1 was positioned to be representative of background sound levels at the nearest noise sensitive receptor (NSR). As such, data obtained at ML1 will be adopted within subsequent noise impact assessment.
- 3.1.5 All noise measurements were made using Class 1, integrating sound level meters (SLM's).
- 3.1.6 The acoustic equipment was calibrated to comply with Section 4.2 of BS7445-1:2003² before and after the noise monitoring periods.
- 3.1.7 Details of the SLM used and associated field calibration can be found in **Table 3** below;

Table 3: Summary of SLM Used for Survey and Associated Field Calibration				
SLM (Serial Number)	Preamp (Serial Number)	Microphone (Serial Number)	Calibrator (Serial Number)	Calibration Drift
LD SoundExpert 821 (40879)	PRM821 (002487)	377B02 (367265)	SVAN- SV30A (10818)	< 0.5

- 3.1.8 The weather conditions were noted to be as outlined in **Table 4** during the site visits at the start and end of the monitoring periods.

Table 4: Summary of weather conditions noted at the start and end of the monitoring duration.		
	18 th April 2026	17 th April 2026
Roads (Wet / Dry)	Dry	Dry
Temperature (°C)	14	14
Wind speed (ms ⁻¹)	Typically < 5	Typically < 5
Cloud Cover (Approx. %)	60	80
Humidity (%)	56	62

- 3.1.9 A-weighted L₉₀³ noise levels were measured to comply with the requirements of BS 4142:2014. A-weighted⁴ L_{eq}⁵ and L_{AMax}⁶ noise levels were also measured for context.
- 3.1.10 Attending the development provided opportunity for observations and notes to be made of the significant noise sources which contribute to each of the measured levels.

² BS7445-2003 "Description and measurement of environmental noise – Part 1: Guide to quantities and procedures.

³ The noise level which is exceeded for 90% of the measurement period.

⁴ An electronic filter in a sound level meter which mimics the human ear's response to sounds at different frequencies under defined conditions.

⁵ Equivalent continuous noise level; the steady sound pressure which contains an equivalent quantity of sound energy as the time-varying sound pressure levels.

⁶ The instantaneous maximum noise level recorded for a measurement period.

3.2 Noise Climate

3.2.1 Distant traffic noise from the local road network was considered the main underlying noise source with secondary influence from natural environment sounds such as birdsong.

3.2.2 Data is shown in **Figure 4** detailing a level vs. time graph of the recorded L_{Amax} , $L_{Aeq,T}$ and L_{A90} sound level over 15-minute time periods at ML1.

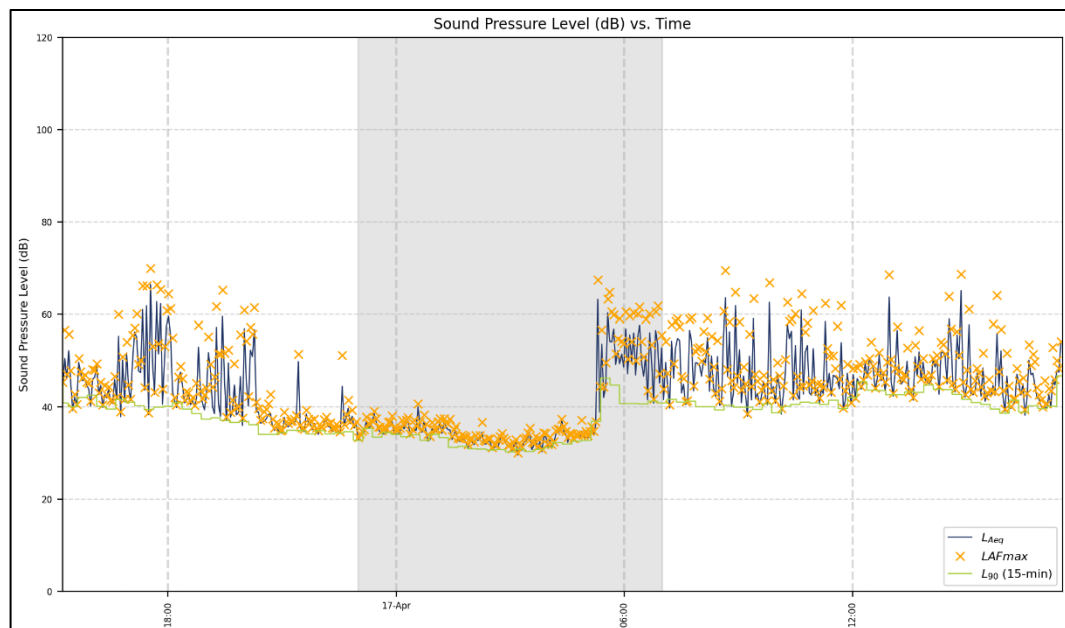


Figure 4: Level vs. time graph showing L_{Amax} , L_{Aeq} and L_{A90} sound levels –

3.2.3 The results for the ML1 during respective daytime and night-time period are presented in **Table 5**.

Table 5: Average Measured Daytime and Night-time Noise Levels			
Monitoring Location	Period	Measured Noise Level	
		dB $L_{Aeq,16hr}$ / dB $L_{Aeq,8hr}$	dB $L_{A90,15min}$
ML1	07:00 - 23:00	51.9 – 52.3	33 – 46
	23:00 - 07:00	50.5	30 - 45

3.3 Measured Background Sound Levels

3.3.1 Further analysis has been conducted regarding the distribution of measured dB $L_{A90,15min}$ sound levels and is presented in the form of a histogram within **Figure 5**.

3.3.2 It should be noted that the data set has been restricted to periods 09:00 – 17:00 to reflect the likely proposed operating hours as reasoned within section 1.3.

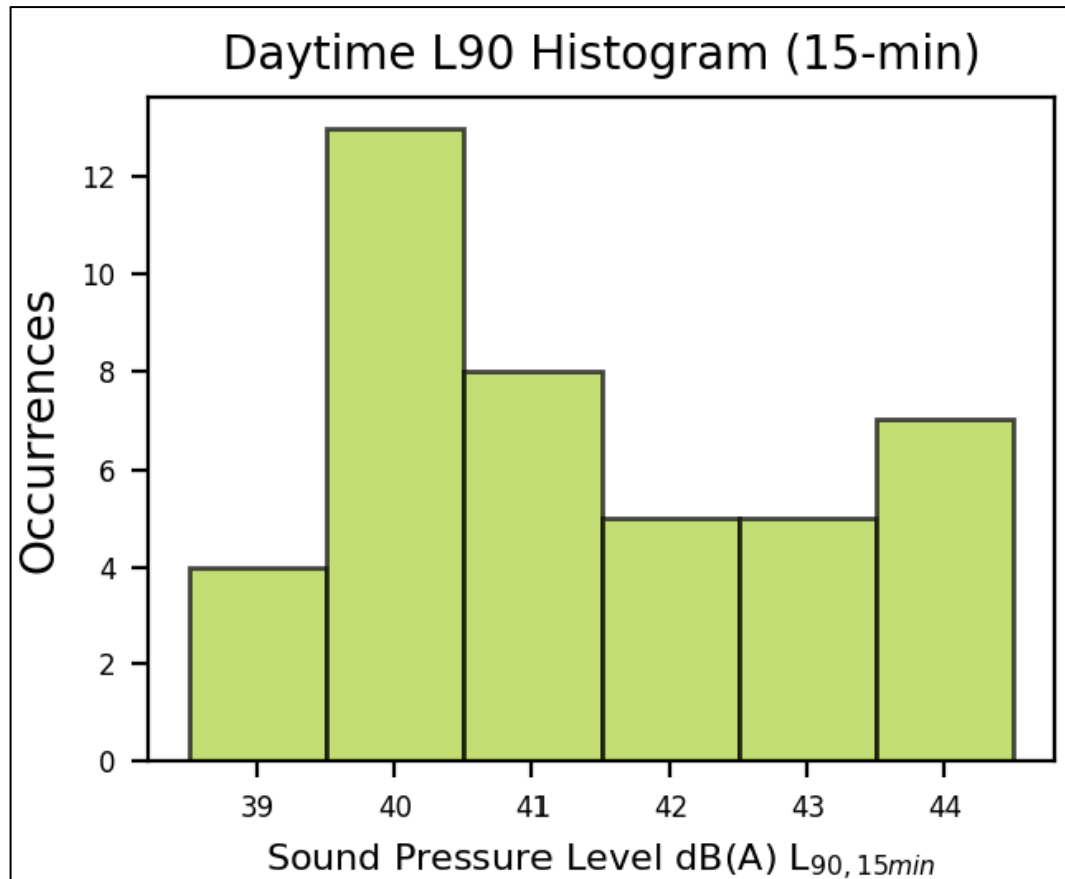


Figure 5: Histogram showing frequency distribution of $L_{A90,15min}$ noise readings at ML1

- 3.3.3 **Figure 5** demonstrates that measured background sound levels ranged from c. 39 dB to 44 dB $L_{A90,15min}$, with the most typical levels considered to range between 40 and 40 dB $L_{A90,15min}$.
- 3.3.4 As a conservative measure, it is reasoned that a background sound level of 40 dB $L_{A90,15min}$ be adopted within subsequent noise impact assessment.

4 3D SOUND MODEL

- 4.1.1 A 3D sound model has been constructed in SoundPLAN™ to calculate the approximate sound pressure levels at selected receptor locations. The model uses the calculation method from ISO 9613-2:1996⁷ to account for the distance between the source and receiver and any screening or reflections provided by the surrounding buildings.
- 4.1.2 To reflect the local ground cover, ground absorption was set to 0.5 (representing mixture of hard and soft coverage) and local topographical data has been included.
- 4.1.3 The 3D sound model calculates the noise level that would be generated downwind from the source in question (wind direction within an angle of +/- 45 degrees of the direction connecting the source and receiver, with wind blowing from the source).

- 4.1.4 3D noise modelling specifically includes the following noise sources:

- **Internal Noise Breakout** – As the development is currently proposed and not yet established, internal operational sound levels have been assumed adopting a worst-case approach (as reasoned with section 2.5) adopting a nominal reverberant sound pressure levels of 80 dB (A), and modelled as an area source throughout the building and is considered conservative.

Façade areas have been assumed capable of achieving a minimum generic sound reduction of:

- Walls – 49 dB Rw
- Roof – 35 dB Rw
- Glazed areas – 29 dB Rw

Doors have been modelled in the closed position, in line with that stated within section 1.3.6.

- 4.1.5 A noise contour plot illustrating the propagation of the along with receptor locations is given in **Figure 6**.

⁷ ISO9613-2:1996 "Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation"

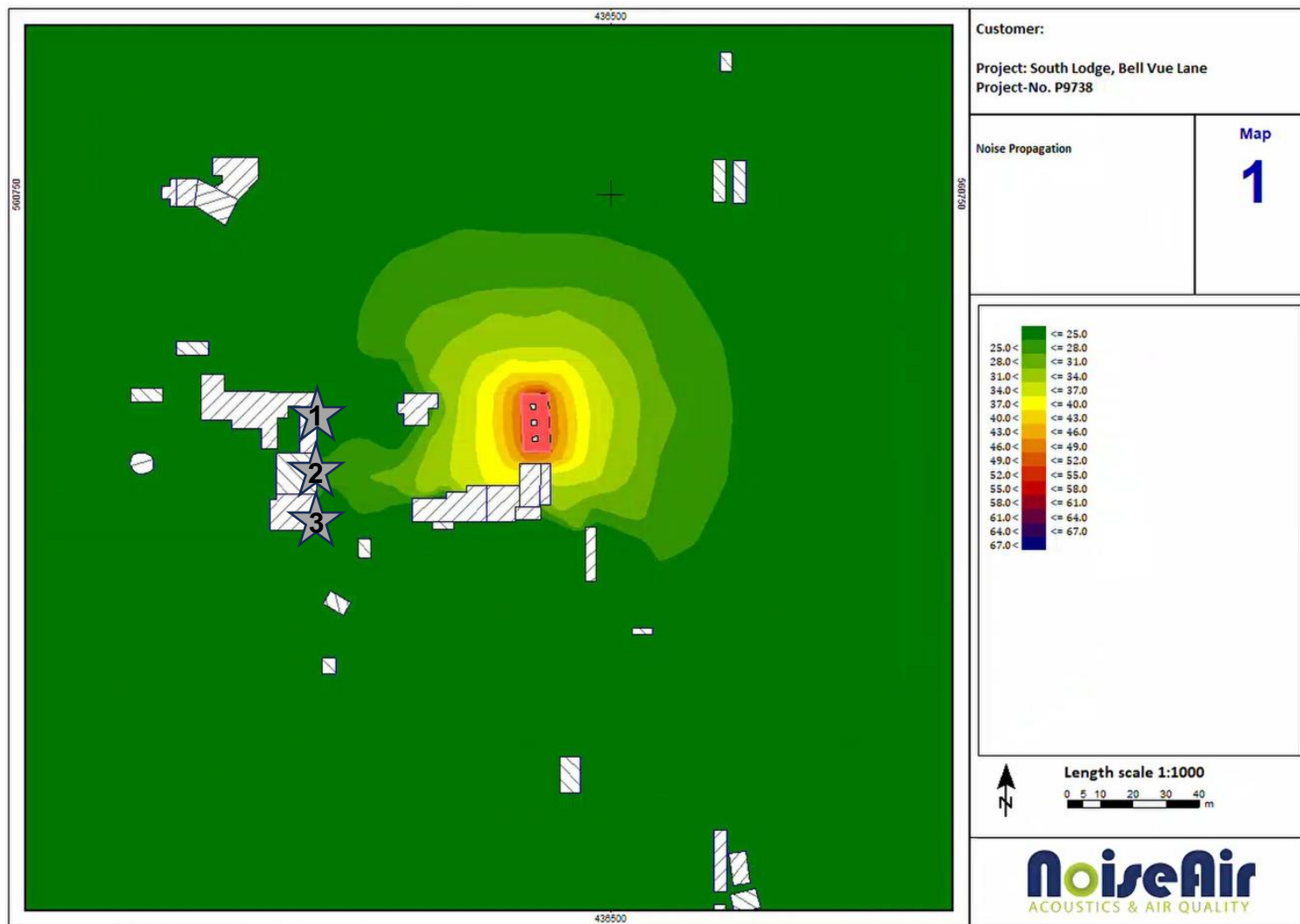


Figure 6: Noise contour plot illustration of the calculated propagation of sound – L_{Aeq,T}.

4.1.6 **Table 6** below details the worst-case calculated noise levels across all nominated receptor locations.

Table 6: Calculated Receptor Noise Levels – Extraction Noise	
Receptor Number	dB L _{Aeq,T}
1	21.2
2	24.8
3	24.7

5 NOISE IMPACT ASSESSMENT

5.1 BS 4142:2014 Assessment

5.2 Introduction

5.2.1 A BS 4142:2014 assessment has been undertaken considering noise breakout from the proposal, specifically with regards to the NSR location.

5.3 Specific Sound Level

5.3.1 For the purpose of assessment, a 3D sound model has been constructed adopting the reverberant operational sound level of 80 dB (A) (as discussed within section 4.1.4) and demonstrates the calculated specific sound level at nominated receptor locations.

5.3.2 For the purpose of assessment, the specific sound level has been taken as the worst-case calculated level at Receptors 2 and 3 (c. 25 dB $L_{Aeq,T}$).

Background Sound Level

5.3.3 Background sound levels have been measured and are presented within Section 3.3 of this report.

5.3.4 Section 3.3 reasons a background $L_{A90,T}$ sound level of 40 dB.

Character Corrections

5.3.5 The following character corrections have been applied subjectively based on experience of likely distinguishable contributions:

- **Tonality** – Given the calculated noise level, it is considered that modest tones may be just perceptible when operational. As such a character correction of +2 dB (A) been applied.
- **Impulsivity** – Impulsivity is associated with the sudden onset of sound such as bangs or crashes. It is not considered appropriate to apply a character correction for impulsivity in this case.
- **Intermittency** – Given the nature of the proposal, it is considered that operational activity may demonstrate Intermittent characteristics and therefore + 3 dB (A) has been therefore been applied.

BS 4142:2014 Assessment

- 5.3.6 The BS 4142:2014 initial assessment based on the worst-affected receptor is presented in **Table 7** below.

Table 7: BS 4142:2014 Initial Assessment – Internal Noise Breakout	
Condition	Level, dB (A)
Background Sound Level	40
Specific Sound Level	25
Character Correction	+5
Rating Level	30
Excess of the Rating over the Background level	-10

BS 4142:2014 Assessment Context

- 5.3.7 This BS 4142:2014 assessment calculates a potential rating over the background sound of -10 dB (A).
- 5.3.8 It is generally considered that a rating level at or above 5 dB(A) over the background sound level is indicative of potential Adverse Impact with increasing likelihood and magnitude as the rating level and background level difference becomes larger. Where the rating level is calculated at or above 10 dB(A) over the background sound level, this is indicative of Significant Adverse impact.
- 5.3.9 In this instance, initial assessment demonstrates the potential level of excess of the rating level above the background sound to be indicative of Low Impact.
- 5.3.10 The above being said further recommendation is provided in the form noise management protocol which is discussed within section 6.
- 5.3.11 By implementing the proposed recommendations, it is reasoned that potential noise intrusion can be minimised and a Low Impact maintained.

5.4 Uncertainty

- 5.4.1 Uncertainty of measurements can have a significant effect on the outcome and findings of an assessment and therefore such constraints are documented and discussed below.

-
- 5.4.2 The SLM uses used was a Class 1 SLM, and it is generally recognised that Class 1 SLM's offer an uncertainty of ± 1.0 dB. The instrumentation used for the survey has been calibrated by UKAS approved laboratories
- 5.4.3 Wind speeds during the survey visits were typically less than 5 ms⁻¹ and the effect of wind generated noise is not considered to have a significant impact on this assessment.
- 5.4.4 It is therefore considered that in this instance the uncertainty of the calculations may have minimal influence on the outcome of the assessment.

6 RECOMMENDATIONS

- 6.1.1 Results of BS 4142:2014 assessment indicate a potential Low Impact from noise breakout associated with the proposal building.
- 6.1.2 As part of good practice measures, it is recommended that a comprehensive noise management plan is composed by the applicant to accompany this noise impact assessment.
 - 1.1.1 This should be submitted to the LA for written approval.
 - 1.1.2 Any suitable noise management plan should, (as a minimum) provide local residents with a 24-hour complaints procedure whereby complaints can be handled in a positive and time effective manner, (should they arise).
- 6.1.3 It is also recommended that signage be clearly displayed throughout the premises (particularly at site access and parking), advising the importance of keeping noise to a minimum with regard to protecting residential amenity.
- 6.1.4 Recommendations are provided based on the estimated risk factor for the average person or receptor within the scope of a BS 4142:2014 assessment to support a planning application prior to operation. While efforts have been made to reduce uncertainty inherent in assessments of this type, it should be recognised that the likelihood of complaints and subsequent noise nuisance is influenced by specific factors unique to each NSR, which fall outside the scope of a BS 4142:2014 assessment and generally cannot be evaluated before the assessed noise source becomes operational.
- 6.1.5 It is the view of NoiseAir; however, that by implementing the recommendations detailed within this report potential noise intrusion can be minimised and a Low Impact maintained.

7 CONCLUSIONS

- 7.1.1 By instruction from OPM Developments Limited ('the client'), NoiseAir was commissioned to undertake a noise impact assessment (NIA) to accompany a planning application in relation to a proposed change of use at: South Lodge, Belle Vue Lane, East Boldon NE36 0AN, herein referred to as the 'Development Site'.
- 7.1.2 At the time of writing, proposals provided to NoiseAir detail the conversion/change of use of an existing stable/storage building, into a multi-functional teaching and production space under planning use 'Class B2'.
- 7.1.3 It is proposed that the building will facilitate:
- A teaching area for approx. 25 students, focused on beekeeping education;
 - A microbrewery;
 - A Cheesery; and
 - Ancillary facilities including kitchenette, disabled access WC and bathroom.
- 7.1.4 A BS 4142:2014 assessment has been undertaken with respect to potential levels of noise breakout associated with the proposal building in relation to neighbouring residential properties, with results demonstrating a potential rating over the background sound level -10 dB (A).
- 7.1.5 In this instance, assessment results are indicative of Low Impact.
- 7.1.6 The above being said, further recommendation (specifically the implementation of noise management) has been provided and discussed within section 6 of this report.
- 7.1.7 By implementing the proposed recommendations, it is reasoned that potential noise intrusion can be minimised and a Low Impact maintained.

APPENDIX A - REPORT LIMITATIONS

This report is presented to OPM Developments Limited and may not be used or relied on by any other person or by the client in relation to any other matters not covered specifically by the scope of this report.

Notwithstanding anything to the contrary contained in the report, NoiseAir Limited is obliged to exercise reasonable skill, care and diligence in the performance of the services required by OPM Developments Limited and NoiseAir shall not be liable except to the extent that it has failed to exercise reasonable skill, care and diligence, and this report shall be read and construed accordingly.

This report has been prepared by NoiseAir Limited. No individual is personally liable in connection with the preparation of this report. By receiving this report and acting on it, the client or any other person accepts that no individual is personally liable whether in contract, tort, for breach of statutory duty or otherwise.

The conclusions and recommendations contained in this report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from who it has been requested and that such information is accurate. Information obtained by NoiseAir Limited has not been independently verified by NoiseAir Limited unless otherwise stated in the report and should be treated accordingly.

Where assessments of works or costs identified in this report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

Where / if estimates and projects are made within this report, are made based on reasonable assumptions as of the date of this report, such statements however by their very nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. NoiseAir Limited specifically does not guarantee or warrant any estimates or projects contained in this report.

DISCLAIMER- This report was prepared by NoiseAir Limited. The material in it contains NoiseAir Limited best judgment in light of the information available at the time of preparation of this report. Any use which a third party makes of this report, or any reliance on, or decisions based on it are the responsibility of such third parties. NoiseAir Limited accept no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

APPENDIX B - GLOSSARY

A-weighted sound pressure, p_A	Value of overall sound pressure, measured in pascals (Pa), after the electrical signal derived from a microphone has been passed through an A-weighting network. <i>NOTE: The A-weighting network modifies the electrical response of a sound level meter with frequency in approximately the same way as the sensitivity of the human hearing system.</i>
A-weighted sound pressure level, L_{pA}	Quantity of A-weighted sound pressure in decibels (dBA).
Acoustic environment	Sound from all sound sources as modified by the environment [BS ISO 12913-1:2013].
Ambient sound	Totally encompassing sound in a given situation at a given time, usually composed of sound from many sources near and far. <i>NOTE: The ambient sound comprises the residual sound and the specific sound when present.</i>
Ambient sound level, $L_a = L_{Aeq,T}$ (BS4142:2014)	Equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually from many sources near and far, at the assessment location over a given time interval, T <i>NOTE: The ambient sound level is a measure of the residual sound and the specific sound when present.</i>
Background sound	Underlying level of sound over a period, T, which might in part be an indication of relative quietness at a given location.
Background sound level, $L_{A90,T}$ (BS4142:2014)	A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels.
Break-in	Noise transmission into a structure from outside.
Break-out	Noise transmission from inside a structure to the outside.
Cross-talk	Noise transmission between one room and another room or space via a duct or other path.
C_{tr}	Correction term applied against the sound insulation single-number values (R_w , D_w , and $D_{nT,w}$) to provide a weighting against low frequency performance. <i>NOTE: The reference values used within the C_{tr} calculation are based on urban traffic noise.</i>
Equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$	Value of the A-weighted sound pressure level in decibels (dB) of a continuous, steady sound that, within a specified time interval, T, has the same mean-squared sound pressure as the sound under consideration that varies with time.
Equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$ (BS4142:2014)	Value of the A-weighted sound pressure level in decibels of continuous steady sound that, within a specified time interval, $T = t_2 - t_1$, has the same mean-squared sound pressure as a sound that varies with time.
Equivalent sound absorption area of a room, A	Hypothetical area of a totally absorbing surface without diffraction effects, expressed in square metres (m ²), which, if it were the only absorbing element in the room, would give the same reverberation time as the room under consideration
Facade level	Sound pressure level 1 m in front of the façade. <i>NOTE: Facade level measurements of L_{pA} are typically 1 dB to 2 dB higher than corresponding free-field measurements because of the reflection from the facade.</i>
Free-field level	Sound pressure level away from reflecting surfaces. <i>NOTE: Measurements made 1.2 m to 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as free-field. To minimize the effect of reflections the measuring position has to be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source). Estimates of noise from aircraft overhead usually include a correction of 2 dB to allow for reflections from the ground.</i>

Impact sound pressure level, L_i	Average sound pressure level in a specific frequency band in a room below a floor when it is excited by a standard tapping machine or equivalent.
Indoor ambient noise	Noise in a given situation at a given time, usually composed of noise from many sources, inside and outside the building, but excluding noise from activities of the occupants. <i>NOTE: The location(s) within the room at which the ambient indoor noise is to be measured or calculated ought to be considered.</i>
Measurement time interval, T_m (BS4142:2014)	Total time over which measurements are taken. <i>NOTE: This may consist of the sum of a number of non-contiguous, short-term measurement time intervals.</i>
Noise criteria	Numerical indices used to define design goals in a given space.
Noise rating, NR	Graphical method for rating a noise by comparing the noise spectrum with a family of noise rating curves.
Normalised impact sound pressure level, L_n	Impact sound pressure level normalized for a standard absorption area in the receiving room. <i>NOTE: Normalised impact sound pressure level is usually used to characterize the insulation of a floor in a laboratory against impact sound in a stated frequency band.</i>
Octave band	Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.
Percentile level, $L_{AN,T}$	A-weighted sound pressure level obtained using time-weighting "F", which is exceeded for $N\%$ of a specified time interval.
Reference time interval, T_r (BS4142:2014)	Specified interval over which the specific sound level is determined. <i>NOTE: This is 1 h during the day from 07:00 h to 23:00 h and a shorter period of 15 min at night from 23:00 h to 07:00 h.</i>
Residual sound (BS4142:2014)	Ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound.
Residual sound level, $L_r = L_{Aeq,T}$ (BS4142:2014)	Equivalent continuous A-weighted sound pressure level of the residual sound at the assessment location over a given time interval, T .
Rating level, L_{Ar,T_r}	Equivalent continuous A-weighted sound pressure level of the noise, plus any adjustment for the characteristic features of the noise. <i>NOTE: This is used in BS 7445 and BS 4142 for rating industrial noise, where the noise is the specific noise from the source under investigation.</i>
Reverberation time, T	Time that would be required for the sound pressure level to decrease by 60 dB after the sound source has stopped.
Sound exposure level, L_{AE}	Level of a sound, of 1 s duration, that has the same sound energy as the actual noise event considered.
Sound level difference, D	Difference between the sound pressure level in the source room and the sound pressure level in the receiving room.
Sound pressure, p	Root-mean-square value of the variation in air pressure, measured in pascals (Pa) above and below atmospheric pressure, caused by the sound.
Sound pressure level, L_p	Quantity of sound pressure, in decibels (dB).
Sound reduction index, R	Laboratory measure of the sound insulating properties of a material or building element in a stated frequency band.

Specific sound level, $L_s = L_{Aeq,T_r}$ (BS4142:2014)	Equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T_r .
Specific sound source (BS4142:2014)	Sound source being assessed.
Standardised impact sound pressure level, L'_{nT}	Impact sound pressure level normalized to a reverberation time in the receiving room of 0.5 s.
Standardised level difference, D_{nT}	Difference in sound level between a pair of rooms, in a stated frequency band, normalized to a reference reverberation time of 0.5 s for dwellings.
Groundborne noise	Audible noise caused by the vibration of elements of a structure, for which the vibration propagation path from the source is partially or wholly through the ground. <i>NOTE Common sources of ground-borne noise include railways and heavy construction work on adjacent construction sites.</i>
Structure-borne noise	Audible noise caused by the vibration of elements of a structure, the source of which is within a building or structure with common elements. <i>NOTE Common sources of structure-borne noise include building services plant, manufacturing machinery and construction or demolition of the structure.</i>
Third octave band	Band of frequencies in which the upper limit of the band is 2% times the frequency of the lower limit.
Weighted level difference, D_w	Single-number quantity that characterizes airborne sound insulation between rooms, but which is not adjusted to reference conditions. <i>NOTE Weighted level difference is used to characterize the insulation between rooms in a building as they are. Values cannot normally be compared with measurements made under other conditions (see BS EN ISO 717-1).</i>
Weighted normalised impact sound pressure level, $L'_{n,w}$	Single-number quantity used to characterize the impact sound insulation of floors over a range of frequencies.
Weighted sound reduction index, R_w	Single-number quantity which characterizes the airborne sound insulating properties of a material or
Weighted standardised impact sound pressure level $L'_{nT,w}$	Single-number quantity used to characterize the impact sound insulation of floors over a range of frequencies.
Weighted standardised level difference, $D_{nT,w}$	Single-number quantity that characterizes the airborne sound insulation between rooms.

Symbols

D_w	Weighted level difference (dB)
D_{nT}	Standardized level difference (dB)
$D_{nT,w}$	Weighted standardized level difference (dB)
L_{Amax}	Maximum noise level (dB)
L_{Ar,T_r}	Rating level (dB)
L_n	Normalised impact sound pressure level (dB)
L'_{nT}	Standardised impact sound pressure level (dB)
$L'_{nT,w}$	Weighted standardised impact sound pressure level (dB)
$L'_{n,w}$	Weighted normalised impact sound pressure level (dB)
L_p	Sound pressure level (dB)
L_{pA}	A-weighted sound pressure level (dB)
$L_{AN,T}$	Percentile level (dB)
L_{AE}	Sound exposure level (dB)
$L_{Aeq,T}$	Equivalent continuous A-weighted sound pressure level (dB)
p	Sound pressure (Pa)
p_A	A-weighted sound pressure (dB)
$p_{A(t)}$	Instantaneous A-weighted sound pressure (Pa)

R	Sound reduction index (dB)
R_w	Weighted sound reduction index (dB)
T	Time interval (also used for reverberation time) (s)
t_0	Reference time interval (s)

NoiseAir Limited

Specialist acoustic and air quality engineers providing a fast, professional, cost-effective service for all types of Acoustic Consultancy services across the UK.

Over 25 years of experience in the field.

Contact us now for a free, no obligation quote or to discuss your requirements.

NOISEAIR LIMITED, THE COUNTING HOUSE, HIGH STREET,
LUTTERWORTH. LE17 4AY

TEL. 0116 272 5908

EMAIL. INFO@NOISEAIR.CO.UK

WWW.NOISEAIR.CO.UK

