NoiseAir
ACOUSTICS & AIR QUALITY

Tel: 0116 272 5908
Email: info@noiseair.co.uk
Web: www.noiseair.co.uk

ZAVIZ INTERNATIONAL LIMITED

NOISE MANAGEMENT PLAN

BURLTON MANOR WEDDINGS, BURLTON MANOR, BURLTON, SHREWSBURY SY4 5TD

Client: Zaviz International Limited

Report Ref: 5174-R1-V2

Issue Date: 15th December 2021

Document Status: Version 2

Unit 14, Chapel Court, Wervin, Chester, Cheshire, CH2 4BT
The Counting House, High Street, Lutterworth, Leicestershire, LE17 4AY

DATE ISSUED: **15th DECEMBER 2021**

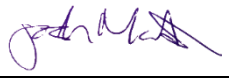
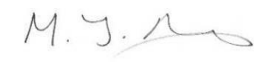
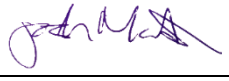
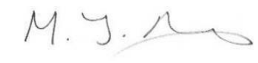
REPORT REFERENCE **P5174-R1-V2**

ZAVIZ INTERNATIONAL LIMITED

NOISE MANAGAMENT PLAN

BURLTON MANOR WEDDINGS, BURLTON MANOR, BURLTON, SHREWSBURY SY4 5TD

REPORT VERSION CONTROL:

Document Reference	Date	Report Prepared by	Report Checked and Authorised by
P5174-R1-V1	15/12/2021	J. McLelland Ba(Hons), PGDip, AMIOA	M. J. Malone, MIOA
			
P5174-R1-V2	15/12/2021	J. McLelland Ba(Hons), PGDip, AMIOA	M. J. Malone, 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

APPENDICES

1 INTRODUCTION

1.1.1 By instruction from Zaviz International Limited ('the client'), NoiseAir was commissioned to produce a noise management plan (NMP) for a proposed events venue, located at Burlton Manor, Burlton, Shrewsbury SY4 5TD, herein referred to as the 'site'.

1.1.2 A noise impact assessment as part of a NMP has been requested by the council to ascertain existing background noise levels and to assess the potential noise impact of future events held at the venue.

1.1.3 This NMP details the noise management procedures and controls that will be implemented in order to minimise the effects of noise from the various events.

1.2 Site Description

1.2.1 At the time of writing, planning permission (*planning reference: 21/02302/FUL*) is being sought for a site that is currently undergoing a change of use from a disused barn to a wedding venue. The site occupies an area of c. 0.28 hectares in a rural setting.

1.2.2 Surrounding land use is predominantly agricultural. To the south east, at a distance of c. 288 m is a residential dwelling located on the A528. The dwelling is a traditionally built two storey detached house with associated external amenity. This has been identified as the closest noise sensitive receptor.

1.2.3 At a distance of c. 27 m to the south west is Burlton Manor. A traditionally built two storey dwelling with associated external amenity. This has been identified as a noise sensitive receptor. However, as this dwelling is considered incidental to the site, it is unlikely to give rise to complaints due to adverse impacts from noise.

1.2.4 The A528 is a single carriage way through road that is located along the south western boundary of the site and is oriented in a south east to north west direction.

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 Proposals

1.3.1 It is understood that a planning application has been submitted proposing the change of use of an existing barn to a wedding venue.

1.3.2 At the time of writing the disused barn is undergoing renovations to a wedding/events venue that will be able to accommodate up to 200 guests. In addition to the venue there will be rooms for residential purposes on site.

1.3.3 On the north east façade is a decking area with associated courtyard where guests will be able to congregate during the events.

1.3.4 The site is constructed of brick, with a timber and slate roof and stands at a height of c. 6.8 m.

1.3.5 It is understood that the site intends to use a Bose L1TM model II Cylindrical Radiator Loudspeaker accompanied by a Bose Bass Module B2.

1.3.6 The weddings are to take place on the ground floor on the north eastern wing of the site.

1.3.7 Typical hours of operation are not clearly defined, however, typical hours of operation for the purposes of assessment have been restricted to 12:00 to 02:00 hours.

1.3.8 **Figure 2** below shows the proposed layout of the site.

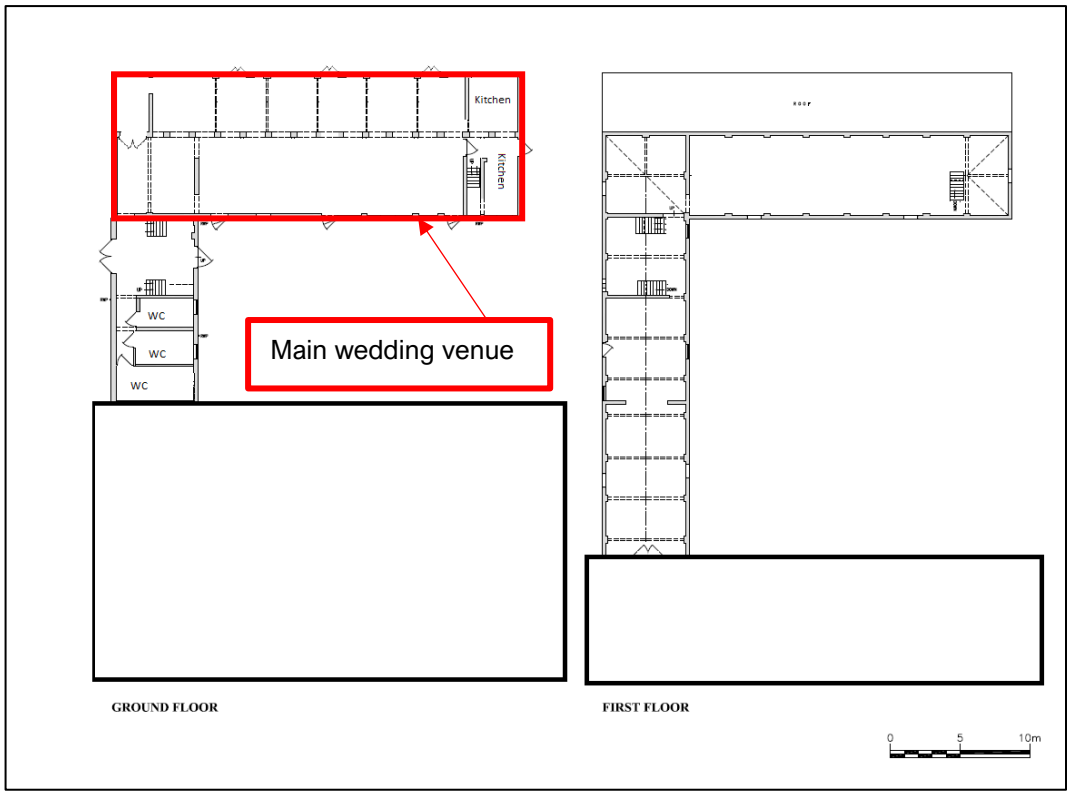


Figure 2: Image showing proposed floor plan

2 ASSESSMENT METHODOLOGY AND SCOPE OF WORKS

2.1 Consultation and Scope of Works

2.1.1 As part of the noise management plan, a noise impact assessment has been requested by the council in order to assess the acoustic environment at the site.

2.1.2 Comments received from the Local Planning Authority, specifically in relation to noise are presented below:

> *Prior to the first function being held that includes amplified music a noise management plan shall be submitted for approval in writing and shall include details of a noise assessment with noise monitoring results taken at the boundary of the nearest residential property when the sound system is being run at a representative volume for fixed speakers or at 95 dB if speakers are to be brought to the venue by sound system. Background noise levels for the Noise Impact Assessment be undertaken in accordance with BS 4142:2014+A1:2019 at the boundary of the nearest residential properties. Specific noise from the operation shall be measures using BS 4142:2014+A1:2019 and/or the most appropriate method in order to provide accurate and representative noise predictions. If L_{Aeq} of noise from music does not achieve 5 dB below background evening L_{90} (subjectively being barely audible), then details of additional noise insulation and/or sound limiting system and other measures as part of the management plan shall be submitted for approval prior to the first use of the building.*
>
> *Reason: To ensure that the amenity of the area is not significantly affected and to protect the health and wellbeing of nearby residents.*

2.2 Noise Survey

2.2.1 As part of this assessment, NoiseAir has carried out a primarily unattended noise survey to measure the existing sound levels at the site.

2.2.2 The primary noise sources assessed are:

- Noise egress from Burlton Manor events.

2.2.3 The above noise sources have been assessed in relation to the below identified receptors:

- Existing and future occupants of the nearest identified noise sensitive receptors

3 ACOUSTIC SURVEY

3.1 Acoustic Survey Details

3.1.1 NoiseAir carried out fixed position noise monitoring between 21st November 2021 and 23rd November 2021 at the site in addition to attended spot measurements at various locations at the site.

3.1.2 Unattended and attended noise monitoring was undertaken at three monitoring locations (ML1, Run001 and Run002). The noise monitoring locations are shown in **Figure 3** and described in **Table 1** below.

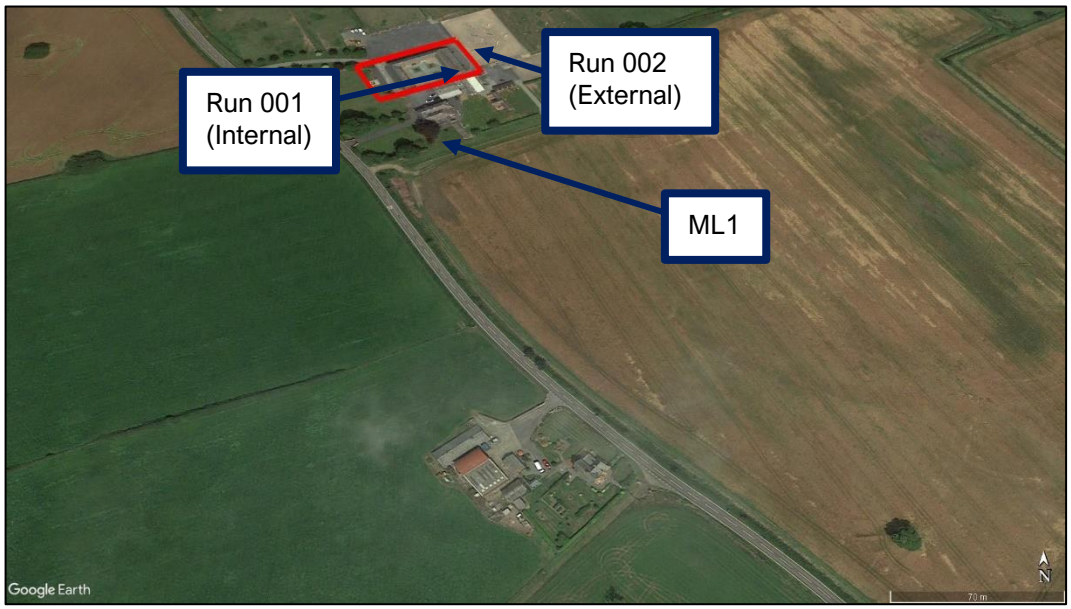


Figure 3: Site layout and noise monitoring locations.

Table 1: Summary of Noise Monitoring Locations

Monitor Location Number	Location Description	Time Period Monitored		Attended or Unattended Monitoring
		Start	End	
ML1	Tripod mounted microphone c. 1.5 above local ground level located to the south-eastern edge of the boundary.	11:30 20/11/21	09:00 23/11/21	Unattended
Run001	Tripod mounted microphone c 1.5 m above local ground level located in the main music/dance hall area.	10:00 23/11/2021	10:45 23/11/2021	Attended
Run002	Tripod mounted microphone c 1.5 m above local ground level located just outside the north-eastern wing of the site.	09:30 23/11/2021	10:50 23/11/2021	Attended

3.1.3 The noise measurements were made using Class 1, integrating sound level meters (SLMs).

3.1.4 All microphones at each monitoring position were mounted on a tripod, at an approximate height of 1.5 m above local ground level and were positioned in free field conditions.

3.1.5 The acoustic equipment was calibrated to comply with Section 4.2 of BS 7445-1:2003[1] before and after the noise monitoring periods.

3.1.6 Details of the SLMs and associated field calibrations are presented in **Table 2** below:

Table 2: Summary of SLM used for survey and associated field calibration

SLM (Serial Number)	Preamp (Serial Number	Microphone (Serial Number)	Calibrator (Serial Number)	Start Calibration	End Calibration	Drift
NOR140 (1405015)	NOR1209 (14517)	NOR1225 (42327)	BK4231 (2482550)	-26.2 dB	-26.2 dB	0.0 dB
NOR140 (1406528)	NOR1209 (15455)	NOR1225 (168289)	BK4231 (2482550)	-25.7 dB	-25.6 dB	-0.1 dB

3.1.7 Weather conditions were monitored during both install and collection of the survey and are outlined in **Table 3**.

Table 3: Summary of weather conditions noted at the start and end of the monitoring duration.

Condition	21st November 2021	23rd November 2021
Roads (Wet / Dry)	Dry	Dry
Temperature (˚C)	11	6
Wind speed (ms^{-1})*	<0.5	<0.4 ms^{-1}
Wind Direction	-	W
Cloud Cover (Approx. %)	60	90
Humidity (%)	70	100
*Recorded using anemometer		

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

3.1.8 A-weighted[2] L_{eq}[3] and L_{A90}[4] noise levels were measured to comply with the measurement requirements of BS 4142:20214. The measured noise levels are set out in full in **Appendix B**.

3.1.9 Attending the development site at the start and end of the survey monitoring period provided opportunity for observations and detailed notes to be made of the significant noise sources which contribute to each of the measured levels.

ML1 – Northern Boundary of the Development Site

Existing Noise Climate: Road traffic noise from A528 was the dominant source of noise at ML1. Traffic predominantly consisted of cars, vans, motorbikes, tractors and HGVs. Human voice and agricultural activity were also present at ML1.

Run001 – Internal Ambient Noise Levels Due to Speaker System

Noise Climate: Internal noise levels were measured when playing the in-house speaker system.

Run002 – External Ambient Noise Levels Due to Speaker System

Noise Climate: External noise levels were measured when playing the in-house speaker system.

3.2 Measured Sound Levels

3.2.1 The results for the monitoring locations during the daytime and night-time periods are presented in **Table 4**.

3.2.2 For Run001, the in house speaker system was set to produce noise levels of 90 dB(A), this was considered representative of typical wedding events.

[2] An electronic filter in a sound level meter which mimics the human ear's response to sounds at different frequencies under defined conditions.
[3] Equivalent continuous noise level; the steady sound pressure which contains an equivalent quantity of sound energy as the time-varying sound pressure levels.
[4] The noise level which is exceeded for 90% of the measurement period.

Table 4: Average Measured Daytime and Night-time Noise Levels			
Monitoring Location	**Period**	**Measured Noise Level**	
		dB $L_{Aeq,1hour}$ / dB $L_{Aeq,15mins}$	**dB $L_{A90,1hour}$ / dB $L_{A90\ 15mins}$**
ML1*	07:00-23:00	45.5 – 57.2	29.6 – 47.4
	23:00-07:00	30.4 – 51.6	18.8 – 39.7
Run001	10:00 – 11:00	87.5 – 90.6	-
Run002	09:30 – 10:50	47.3 – 66.4	-
A full list of measurement recorded throughout the survey period is provided within **Appendix B.**			

3.2.3 Data shown in **Figure 4** details a level vs. time graph of the recorded L_{Amax}, L_{Aeq} and L_{A90} sound level over 15-minute time periods for the entire measurement's duration at ML1.

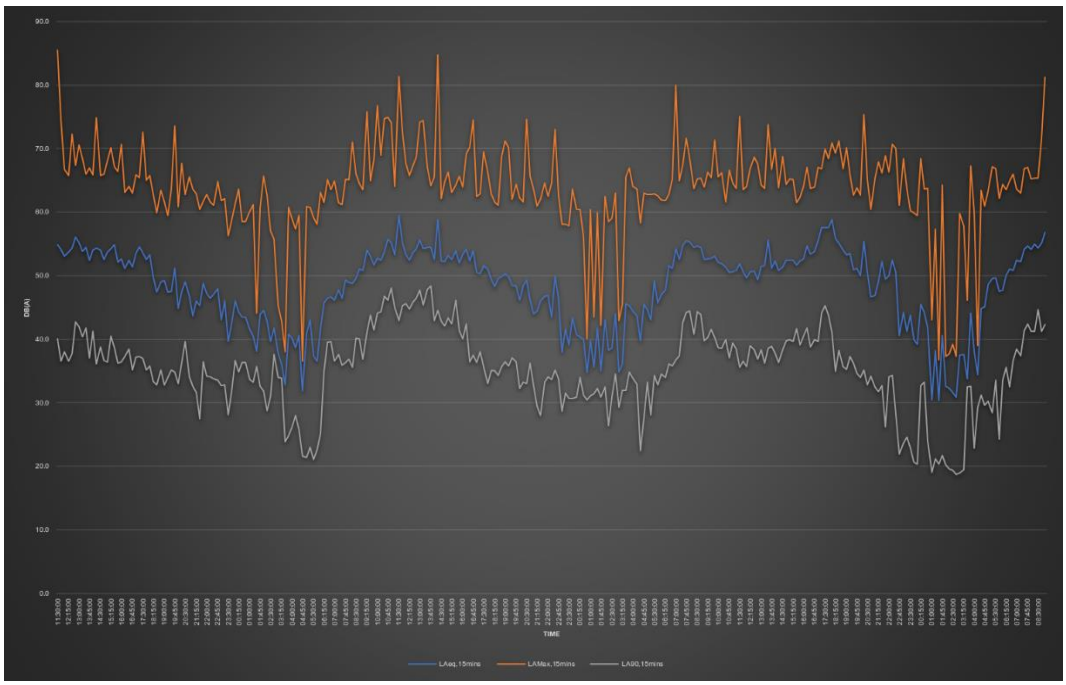


Figure 4: Level vs. time graph showing L_{Amax}, L_{Aeq} and L_{A90} sound levels – ML1

3.3 Background Sound Levels

3.3.1 **Figure 5** and **Figure 6** detail the results of the data analyses on the background sound levels in terms of the frequency of occurrence of each value at ML1 the during daytime (12:00 – 23:00 hours) and night-time (23:00-02:00) periods of operation as stated in Section 1 of this report.

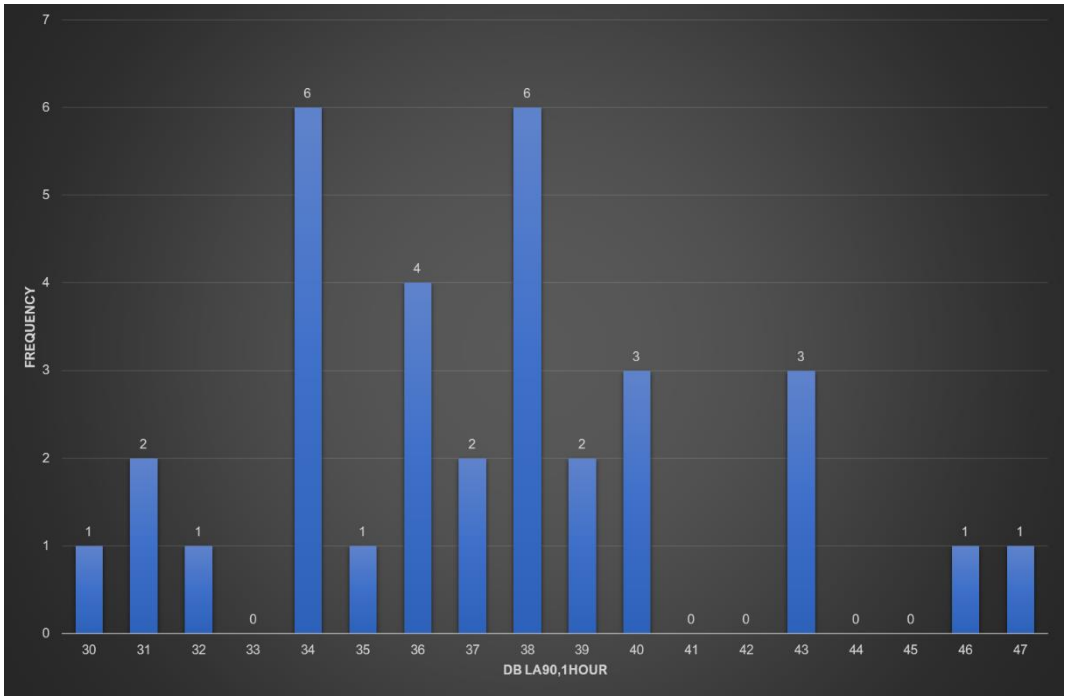


Figure 5: Data analysis of the daytime background ($L_{A90,1hour}$) sound level results - ML1

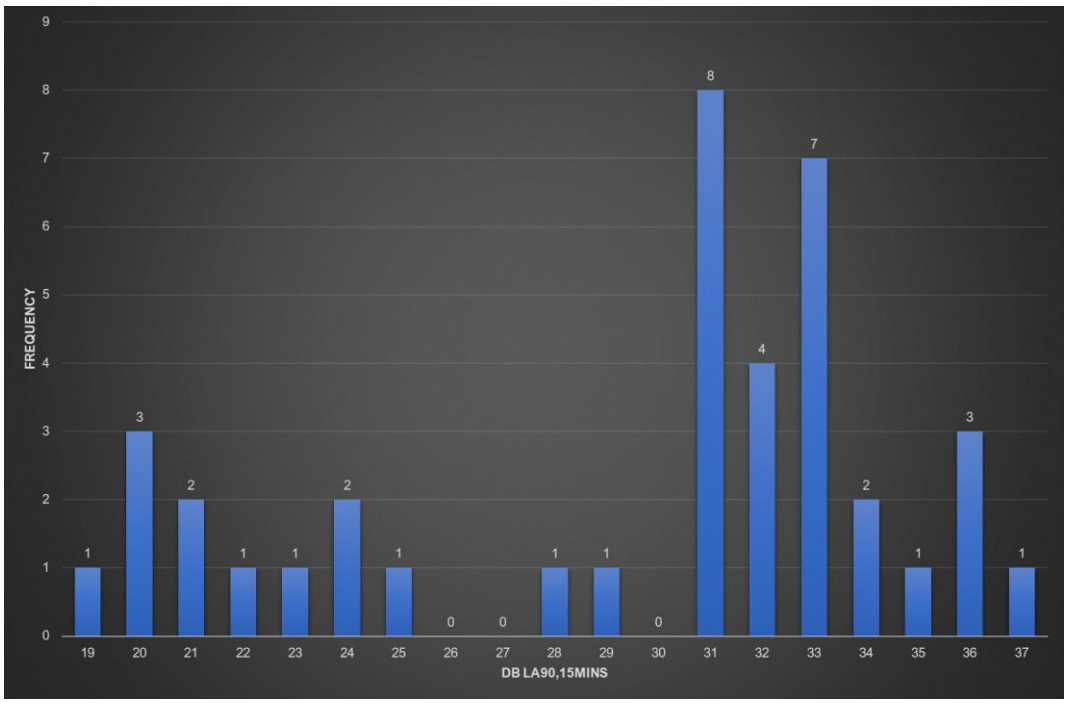


Figure 6: Data analysis of the daytime background ($L_{A90,15mins}$) sound level results - ML1

3.3.2 Based on the analysis, for ML1, 34 dB(A) $L_{A90,\ 1\ hour}$ and 31 dB(A) $L_{A90,\ 15min}$ have been selected as the representative background sound levels for the daytime and night-time period respectively.

3.3.3 **Figure 7** and **Figure 8** show frequency spectrums for the worst-case measurements taken at positions Run001 and Run002 respectively.

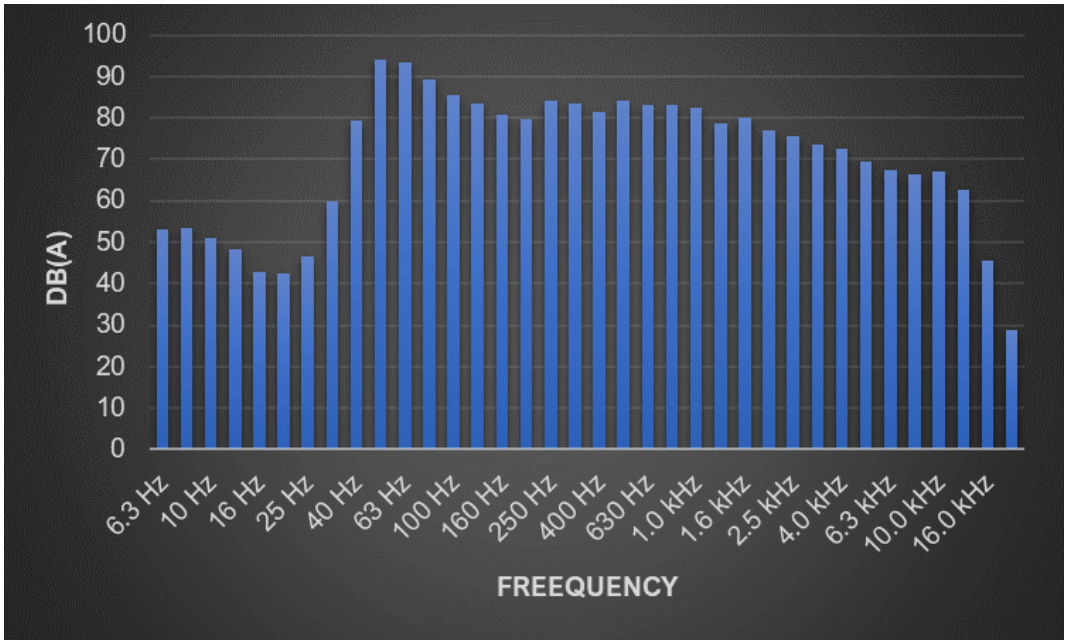


Figure 7: Run001 Frequency Spectrum for Worst Case Measurement of 90.6 dB(A)

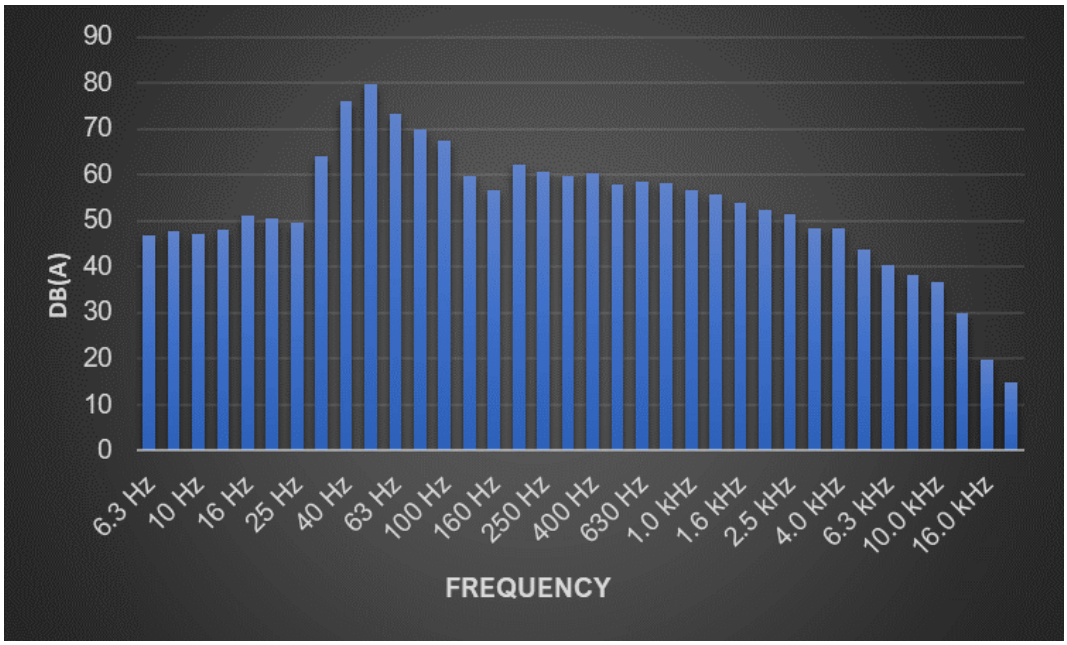


Figure 8: Run002 Frequency Spectrum for Worst Case Measurement of 66.4 dB(A)

4 SENSITIVE RECEPTORS AND ASSESSMENT CRITERIA

4.1 Identified Noise Sensitive Receptors

4.1.1 The following property has been identified as the nearest noise sensitive receptors to the site:

- **Residential premises located on A528** – Residential dwelling located at Wackley Farm as identified below in Figure 9:

Figure 9: Image showing identified receptors in relation to the site

4.2 Assessment Criteria

4.2.1 Based upon the requirements set out by the Local Planning Authority, the following assessment criteria has been applied.

4.2.2 The Local Planning Authority have requested that any potential noise breakout from the site be 5 dB(A) below the existing background sound levels. As such the calculated criteria is presented in **Table 5** below.

Table 5: Summary of Criteria for Daytime and Night-time

Period	Criteria dB $L_{Aeq, 1hour}$/dB $L_{Aeq, 15min}$
Day	29
Night	26

5 ENTERTAINMENT NOISE PREDICTIONS

5.1 3D Sound Model

5.1.1 In order to ascertain noise levels at the facades of nearby noise sensitive receptors a 3D sound model has been constructed in SoundPLAN™ to calculate the predicted sound pressure levels at selected potential receiver facades. The model uses the calculation method from ISO 9613-2:1996[5] to account for the distance between the source and receiver and any screening or reflections provided by the surrounding buildings.

5.1.2 The 3D noise model specifically includes the following noise sources and parameters:

- **Vertical area source due to noise breakout from wedding venues main hall with open doors to the north east** – area source calibrated to on-site measurements of noise breakout from dance hall with music playing through the in-house sound system. The noise levels were calibrated to the worst-case external sound levels at Run002 of 66.4 dB(A) as presented in **Table 4** and **Figure 8.**

5.1.3 A noise contour plot and façade calculations graphic illustrating the propagation of sound from source to receptor during the day and night-time periods ($L_{Aeq,T}$), is presented in **Figure 10** and **Figure 11** respectively**.**

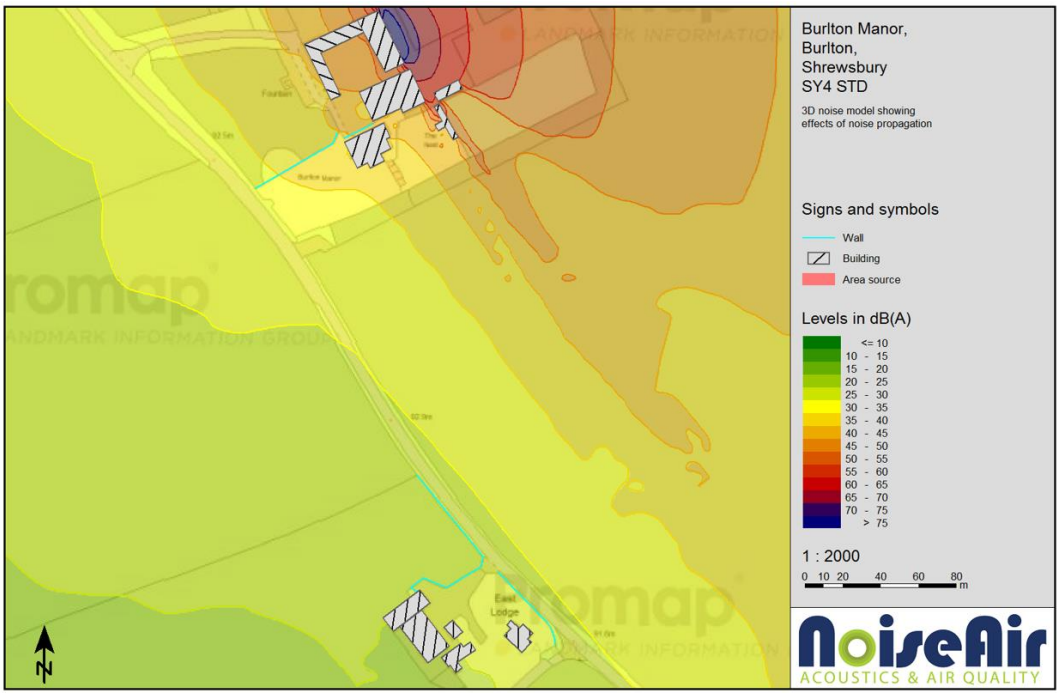


Figure 10: Noise contour plot illustration of the predicted propagation of sound to the nearest receptors – $L_{Aeq,T}$

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

Figure 11: Illustration of the 3D sound model receiver locations

5.1.4 Predicted façade readings are presented in **Table 6** below.

Table 6: Worst Case Predicted Façade Readings at Each Identified Noise Sensitive Receptor

Receptor Number	Receptor Type	Floor	Measured Noise Level
			dB $L_{Aeq,T}$
1	Residential Dwelling on A528	GF	28.8
		1.FL	28.3
2		GF	28.4
		1.FL	27.9
3		GF	24.1
		1.FL	23.8
4		GF	22.7
		1.FL	22.6

Noise impact Assessment

5.1.5 Based on the calculated sound levels presented in Section 5.1 and the 3D sound model, a noise impact assessment has been undertaken considering the potential noise sources at the development site with respect to the closest noise sensitive receptors. The ground floor

of receptor 1, as denoted in **Table 6** has been used as a worst-case scenario for this assessment.

5.1.6 Therefore, the source sound level adopted for the noise impact assessment is 29 dB(A) for both day and night-time periods.

Background Sound Level

5.1.7 The measured background sound levels are presented within Section 3.3 of this report.

5.1.8 Based on the analysis, for ML1, 34 dB(A) $L_{A90,\ 1\ hour}$ and 31 dB(A) $L_{A90,\ 15min}$ have been selected as the representative background sound levels for the daytime and night-time period respectively.

Initial Assessment

5.1.9 The initial assessment based on the calculated noise breakout levels for all noise sources is presented in **Table 7**.

Table 7: Assessment to Determine the Likelihood of Adverse Impacts on the Worst Affected Noise Sensitive Receptor

Quantity	Sound level dB(A)	
	Daytime	Night-time
Residual Sound Level dB $L_{Aeq,\ T}$	52	43
Source Sound Level Calculated by SoundPlan™	29	
Background Sound Level dB L_{A90}	34	31
Excess of Noise Source over Background Sound Level	-5	-2

Assessment and Contextual Discussion

5.1.10 The initial assessment indicates that during the daytime and night-time periods the excess of source sound level above the existing background sound level is -5 dB(A) and -2 dB(A) respectively, indicating that during both periods it is likely that there should be low impact at the nearest noise sensitive receptor.

5.1.11 It is noted that the local planning authority have recommended that the calculated music noise level breakout from events at the site should be no more than 5 dB below the prevailing background sound level.

5.1.12 The assessment undertaken and presented in **Table 7** is based on a worst-case scenario of the venue with doors onto the decking area to the north east façade open until the early morning hours.

5.1.13 Subsequently, our calculations indicate that the criteria set by the local planning authority is likely to be achieved during the daytime.

5.1.14 Our assessment indicates that during the later (night-time) period, while the background noise levels are unlikely to be exceeded by event noise breakout at the venue, the calculated noise levels are unlikely to be 5 dB below measured background sound levels as outlined by the local planning authority, albeit the 5 dB below background target is only marginally exceeded.

5.1.15 Recommendations are outlined in full in the noise management plan section of this report, however it is recommended that the venue doors are kept closed after 23:00 hours to ensure that the local planning authority target of 5 dB below background sound levels for the event noise is achieved.

5.1.16 Given the acoustic measurements, assessment undertaken and implementation of some basic noise management techniques (outlined in Section 6) **it is considered that noise breakout from the Bulton Manor events venue is likely to be a low impact on the nearest noise sensitive receptor and the criteria set by the local planning authority is likely to be achieved.**

6 NOISE MANAGEMENT PLAN

6.1 Pre-Event Information – Applicable to All Events

6.1.1 Before each event, it is recommended that the following steps should be undertaken:

- The client should ensure that any 3rd party event's organiser is aware of the noise constraints which relate to the site and details of this will also be contained within any contract documentation.
- A dedicated complaints number should be set up to allow affected members of the public a place to register comments or complaints with respect to noise. An example complaint form is presented in **Appendix C**.

6.2 Sound System Design

6.2.1 It is understood that the site intends to use a Bose L1™ model II Cylindrical Radiator Loudspeaker accompanied by a Bose Bass Module B2.

6.2.2 If a PA sound system is proposed for any event the system design should consider and/or incorporate the following:

6.2.3 Sound systems should be reflective of the type of event and size of the audience.

6.2.4 A working limit of no more than 90 dB (A) will be employed. Noise levels will be actively monitored by a member of the Burlton Manor team at regular intervals using a handheld sound level meter. Where there is exceedance of the target limit, feedback will be provided, and the noise level will be reduced.

6.2.5 All windows and doors will remain closed except for guest ingress and egress. This will reduce sound escaping via this avenue and will likely ensure that no adverse impact will be experienced by the nearest noise sensitive receptor during the night-time hours of operation.

6.2.6 Loudspeakers will be mounted on stands and focused away from the greatest point of egress, (identified as the windows). With loudspeakers mounted on stands, the effect of sound being reradiated via the building structure will be minimised.

6.2.7 Where equipment is provided by external suppliers, required parties will be well informed on the requirement keep noise under strict management. It will be advised that best practice methods utilising speakers with reduced rear projection and attention to establishing even sound distribution throughout the room should be employed. An even sound distribution will minimise the need to increase the overall volume in-order reach the back of the room.

7 CONCLUSIONS

7.1.1 By instruction from Zaviz International Limited ('the client'), NoiseAir was commissioned to produce a noise management plan (NMP) for a prosed events venue, located at Burlton Manor, Burlton, Shrewsbury SY4 5TD.

7.1.2 It is understood that a planning application has been submitted proposing the change of use of an existing barn to a wedding venue.

7.1.3 At the time of writing the disused barn is undergoing renovations to a wedding/events venue that will be able to accommodate up to 200 guests. In addition to the venue there will be rooms for residential purposes on site.

7.1.4 A noise impact assessment has been undertaken with respect to the site in order to quantify the potential for adverse impact when considering noise breakout.

7.1.5 The assessment undertaken is based on a worst-case scenario of the venue with doors onto the decking area to the north east façade open until the early morning hours.

7.1.6 The initial assessment indicates that during the daytime and night-time periods the excess of source sound level above the existing background sound level is -5 dB(A) and -2 dB(A) respectively.

7.1.7 Our calculations indicate that the criteria set by the local planning authority is likely to be achieved during the daytime.

7.1.8 It is recommended that the venue doors are kept closed after 23:00 hours to ensure that the local planning authority target of 5 dB below background sound levels for the event noise is achieved.

7.1.9 Given the acoustic measurements, assessment undertaken and implementation of some basic noise management techniques (outlined in Section 6) **it is considered that noise breakout from the Bulton Manor events venue is likely to be a low impact on the nearest noise sensitive receptor and the criteria set by the local planning authority is likely to be achieved.**

7.1.10 Recommendations are set out in full in Section 6.

APPENDIX A - REPORT LIMITATIONS

This Report is presented to Zaviz International 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 Zaviz International 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 – METER READINGS

ML1

Start Date	Start Time	Duration	L_{Aeq}	L_{AFMax}	L_{A90}
dd/mm/yyyy	hh:mm:ss	hh:mm:ss	dB	dB	dB
20/11/2021	11:30:00	00:12:30	54.9	85.5	40.1
20/11/2021	11:45:00	00:15:00	54.2	74.5	36.6
20/11/2021	12:00:00	00:15:00	53.1	66.7	38.0
20/11/2021	12:15:00	00:15:00	53.7	65.8	36.6
20/11/2021	12:30:00	00:15:00	54.4	72.3	37.7
20/11/2021	12:45:00	00:15:00	56.1	67.4	42.7
20/11/2021	13:00:00	00:15:00	55.2	70.6	42.0
20/11/2021	13:15:00	00:15:00	53.8	68.4	40.4
20/11/2021	13:30:00	00:15:00	54.5	66.0	41.8
20/11/2021	13:45:00	00:15:00	52.4	67.0	37.1
20/11/2021	14:00:00	00:15:00	54.0	65.9	41.3
20/11/2021	14:15:00	00:15:00	54.4	74.8	36.1
20/11/2021	14:30:00	00:15:00	54.1	65.8	38.8
20/11/2021	14:45:00	00:15:00	52.6	66.0	36.7
20/11/2021	15:00:00	00:15:00	53.7	68.1	36.5
20/11/2021	15:15:00	00:15:00	54.3	70.2	40.5
20/11/2021	15:30:00	00:15:00	54.9	67.2	38.7
20/11/2021	15:45:00	00:15:00	52.1	66.4	36.2
20/11/2021	16:00:00	00:15:00	52.7	70.7	36.5
20/11/2021	16:15:00	00:15:00	51.2	63.1	37.3
20/11/2021	16:30:00	00:15:00	52.4	64.1	38.5
20/11/2021	16:45:00	00:15:00	51.4	63.0	35.2
20/11/2021	17:00:00	00:15:00	53.5	65.9	37.2
20/11/2021	17:15:00	00:15:00	54.6	65.5	37.3
20/11/2021	17:30:00	00:15:00	53.6	72.6	37.0
20/11/2021	17:45:00	00:15:00	52.6	65.0	35.2
20/11/2021	18:00:00	00:15:00	53.3	65.8	35.8
20/11/2021	18:15:00	00:15:00	49.8	62.8	33.4
20/11/2021	18:30:00	00:15:00	47.4	59.9	32.8
20/11/2021	18:45:00	00:15:00	49.0	63.4	35.2
20/11/2021	19:00:00	00:15:00	49.2	61.6	32.8
20/11/2021	19:15:00	00:15:00	47.4	59.5	34.0
20/11/2021	19:30:00	00:15:00	47.5	63.7	35.2
20/11/2021	19:45:00	00:15:00	51.2	73.6	34.9
20/11/2021	20:00:00	00:15:00	44.9	60.9	33.0
20/11/2021	20:15:00	00:15:00	47.5	67.7	36.3
20/11/2021	20:30:00	00:15:00	49.0	62.8	39.7
20/11/2021	20:45:00	00:15:00	46.8	65.6	34.1
20/11/2021	21:00:00	00:15:00	43.7	63.7	32.6
20/11/2021	21:15:00	00:15:00	46.1	62.9	31.7
20/11/2021	21:30:00	00:15:00	45.3	60.5	27.5
20/11/2021	21:45:00	00:15:00	48.8	61.7	36.5
20/11/2021	22:00:00	00:15:00	47.2	62.8	34.2
20/11/2021	22:15:00	00:15:00	46.5	61.6	34.1
20/11/2021	22:30:00	00:15:00	47.1	61.1	33.8
20/11/2021	22:45:00	00:15:00	48.0	64.8	33.6
20/11/2021	23:00:00	00:15:00	43.1	61.8	32.7
20/11/2021	23:15:00	00:15:00	46.0	62.2	32.8
20/11/2021	23:30:00	00:15:00	39.7	56.3	28.1

Start Date	Start Time	Duration	L_{Aeq}	L_{AFMax}	L_{A90}
dd/mm/yyyy	hh:mm:ss	hh:mm:ss	dB	dB	dB
20/11/2021	23:45:00	00:15:00	42.5	58.7	31.9
21/11/2021	00:00:00	00:15:00	46.1	61.3	36.7
21/11/2021	00:15:00	00:15:00	44.3	63.7	34.8
21/11/2021	00:30:00	00:15:00	43.5	58.5	36.3
21/11/2021	00:45:00	00:15:00	43.5	58.5	36.3
21/11/2021	01:00:00	00:15:00	41.6	60.1	33.7
21/11/2021	01:15:00	00:15:00	40.5	61.2	33.2
21/11/2021	01:30:00	00:15:00	38.2	44.1	35.7
21/11/2021	01:45:00	00:15:00	43.9	60.7	32.6
21/11/2021	02:00:00	00:15:00	44.6	65.7	31.9
21/11/2021	02:15:00	00:15:00	42.8	62.7	28.8
21/11/2021	02:30:00	00:15:00	39.7	57.0	31.0
21/11/2021	02:45:00	00:15:00	41.8	55.8	37.6
21/11/2021	03:00:00	00:15:00	37.8	45.3	34.0
21/11/2021	03:15:00	00:15:00	36.0	42.9	33.9
21/11/2021	03:30:00	00:15:00	32.8	38.1	23.9
21/11/2021	03:45:00	00:15:00	40.8	60.8	24.8
21/11/2021	04:00:00	00:15:00	40.2	59.0	26.2
21/11/2021	04:15:00	00:15:00	38.7	57.4	28.0
21/11/2021	04:30:00	00:15:00	40.6	59.5	25.8
21/11/2021	04:45:00	00:15:00	31.9	36.6	21.6
21/11/2021	05:00:00	00:15:00	40.9	60.9	21.4
21/11/2021	05:15:00	00:15:00	43.1	60.8	23.0
21/11/2021	05:30:00	00:15:00	37.4	59.2	21.1
21/11/2021	05:45:00	00:15:00	36.6	58.1	22.6
21/11/2021	06:00:00	00:15:00	41.7	63.1	25.1
21/11/2021	06:15:00	00:15:00	45.7	61.5	34.9
21/11/2021	06:30:00	00:15:00	46.5	65.1	39.5
21/11/2021	06:45:00	00:15:00	46.7	63.5	39.7
21/11/2021	07:00:00	00:15:00	46.2	64.9	36.6
21/11/2021	07:15:00	00:15:00	47.8	61.5	37.6
21/11/2021	07:30:00	00:15:00	46.5	61.2	35.9
21/11/2021	07:45:00	00:15:00	49.4	65.1	36.3
21/11/2021	08:00:00	00:15:00	48.9	65.1	36.9
21/11/2021	08:15:00	00:15:00	48.8	71.0	35.6
21/11/2021	08:30:00	00:15:00	49.6	66.1	40.2
21/11/2021	08:45:00	00:15:00	51.1	64.5	40.1
21/11/2021	09:00:00	00:15:00	50.8	63.5	36.9
21/11/2021	09:15:00	00:15:00	54.1	75.8	41.1
21/11/2021	09:30:00	00:15:00	53.1	64.9	43.8
21/11/2021	09:45:00	00:15:00	51.7	68.3	41.5
21/11/2021	10:00:00	00:15:00	52.8	76.8	44.1
21/11/2021	10:15:00	00:15:00	52.5	69.0	44.3
21/11/2021	10:30:00	00:15:00	53.7	74.7	46.8
21/11/2021	10:45:00	00:15:00	55.8	75.0	46.2
21/11/2021	11:00:00	00:15:00	55.2	74.1	48.1
21/11/2021	11:15:00	00:15:00	53.3	64.1	45.0
21/11/2021	11:30:00	00:15:00	59.5	81.3	43.0
21/11/2021	11:45:00	00:15:00	55.2	72.7	45.3
21/11/2021	12:00:00	00:15:00	53.4	67.7	45.6

Start Date	Start Time	Duration	L_{Aeq}	L_{AFMax}	L_{A90}
dd/mm/yyyy	hh:mm:ss	hh:mm:ss	dB	dB	dB
21/11/2021	12:15:00	00:15:00	52.5	65.8	44.8
21/11/2021	12:30:00	00:15:00	53.6	67.3	45.8
21/11/2021	12:45:00	00:15:00	54.3	68.7	46.5
21/11/2021	13:00:00	00:15:00	55.7	74.2	47.8
21/11/2021	13:15:00	00:15:00	54.3	74.4	45.4
21/11/2021	13:30:00	00:15:00	54.5	67.1	47.9
21/11/2021	13:45:00	00:15:00	54.5	64.2	48.4
21/11/2021	14:00:00	00:15:00	52.6	65.6	43.0
21/11/2021	14:15:00	00:15:00	58.9	84.8	44.6
21/11/2021	14:30:00	00:15:00	52.3	62.2	42.8
21/11/2021	14:45:00	00:15:00	52.2	64.8	42.1
21/11/2021	15:00:00	00:15:00	53.2	66.3	43.4
21/11/2021	15:15:00	00:15:00	52.6	63.1	42.4
21/11/2021	15:30:00	00:15:00	53.9	64.3	46.2
21/11/2021	15:45:00	00:15:00	52.0	65.7	41.4
21/11/2021	16:00:00	00:15:00	53.4	64.0	40.1
21/11/2021	16:15:00	00:15:00	54.2	69.2	42.4
21/11/2021	16:30:00	00:15:00	52.3	70.3	36.5
21/11/2021	16:45:00	00:15:00	53.9	74.5	37.5
21/11/2021	17:00:00	00:15:00	50.5	62.5	36.3
21/11/2021	17:15:00	00:15:00	50.3	62.9	38.0
21/11/2021	17:30:00	00:15:00	51.6	69.5	35.7
21/11/2021	17:45:00	00:15:00	51.1	66.3	33.0
21/11/2021	18:00:00	00:15:00	49.5	62.9	35.1
21/11/2021	18:15:00	00:15:00	48.3	61.6	35.1
21/11/2021	18:30:00	00:15:00	49.6	61.1	34.3
21/11/2021	18:45:00	00:15:00	49.9	68.8	35.7
21/11/2021	19:00:00	00:15:00	50.3	71.2	36.4
21/11/2021	19:15:00	00:15:00	49.9	70.2	35.8
21/11/2021	19:30:00	00:15:00	48.5	62.0	37.1
21/11/2021	19:45:00	00:15:00	48.4	64.4	36.5
21/11/2021	20:00:00	00:15:00	46.2	62.3	32.3
21/11/2021	20:15:00	00:15:00	48.4	61.6	33.2
21/11/2021	20:30:00	00:15:00	49.4	74.6	33.0
21/11/2021	20:45:00	00:15:00	46.2	65.7	36.2
21/11/2021	21:00:00	00:15:00	44.0	63.7	32.7
21/11/2021	21:15:00	00:15:00	44.5	61.0	29.5
21/11/2021	21:30:00	00:15:00	46.1	62.0	28.0
21/11/2021	21:45:00	00:15:00	46.8	64.6	33.2
21/11/2021	22:00:00	00:15:00	46.9	62.5	34.1
21/11/2021	22:15:00	00:15:00	43.5	64.6	33.7
21/11/2021	22:30:00	00:15:00	50.0	73.0	35.2
21/11/2021	22:45:00	00:15:00	46.4	62.7	33.8
21/11/2021	23:00:00	00:15:00	37.9	58.1	28.7
21/11/2021	23:15:00	00:15:00	41.7	58.1	31.5
21/11/2021	23:30:00	00:15:00	39.1	57.9	30.7
21/11/2021	23:45:00	00:15:00	43.4	63.7	30.7
22/11/2021	00:00:00	00:15:00	40.7	60.5	30.9
22/11/2021	00:15:00	00:15:00	40.4	60.4	34.0
22/11/2021	00:30:00	00:15:00	40.0	56.1	31.2

Start Date	Start Time	Duration	L_{Aeq}	L_{AFMax}	L_{A90}
dd/mm/yyyy	hh:mm:ss	hh:mm:ss	dB	dB	dB
22/11/2021	00:45:00	00:15:00	34.7	40.1	30.5
22/11/2021	01:00:00	00:15:00	39.8	60.5	31.1
22/11/2021	01:15:00	00:15:00	35.6	43.5	31.4
22/11/2021	01:30:00	00:15:00	41.8	59.9	32.3
22/11/2021	01:45:00	00:15:00	35.1	42.2	30.9
22/11/2021	02:00:00	00:15:00	43.1	62.5	32.5
22/11/2021	02:15:00	00:15:00	38.3	58.5	26.4
22/11/2021	02:30:00	00:15:00	38.7	59.1	31.0
22/11/2021	02:45:00	00:15:00	44.0	63.0	34.5
22/11/2021	03:00:00	00:15:00	34.9	43.0	29.3
22/11/2021	03:15:00	00:15:00	36.1	45.5	32.0
22/11/2021	03:30:00	00:15:00	45.6	65.6	32.0
22/11/2021	03:45:00	00:15:00	45.3	67.0	34.9
22/11/2021	04:00:00	00:15:00	44.4	64.1	33.9
22/11/2021	04:15:00	00:15:00	43.7	63.6	32.9
22/11/2021	04:30:00	00:15:00	39.8	58.3	22.5
22/11/2021	04:45:00	00:15:00	45.5	63.0	27.6
22/11/2021	05:00:00	00:15:00	44.7	62.8	33.2
22/11/2021	05:15:00	00:15:00	43.1	62.8	28.1
22/11/2021	05:30:00	00:15:00	49.3	62.9	34.3
22/11/2021	05:45:00	00:15:00	45.7	62.6	32.8
22/11/2021	06:00:00	00:15:00	47.0	61.9	34.5
22/11/2021	06:15:00	00:15:00	47.8	61.8	34.0
22/11/2021	06:30:00	00:15:00	51.6	62.8	36.1
22/11/2021	06:45:00	00:15:00	51.2	65.3	35.8
22/11/2021	07:00:00	00:15:00	54.3	80.0	36.8
22/11/2021	07:15:00	00:15:00	52.6	64.9	37.4
22/11/2021	07:30:00	00:15:00	54.8	67.5	42.6
22/11/2021	07:45:00	00:15:00	55.5	71.7	44.2
22/11/2021	08:00:00	00:15:00	55.3	68.5	44.5
22/11/2021	08:15:00	00:15:00	54.5	63.8	40.8
22/11/2021	08:30:00	00:15:00	54.7	65.2	44.3
22/11/2021	08:45:00	00:15:00	54.5	65.4	43.9
22/11/2021	09:00:00	00:15:00	52.6	64.0	39.8
22/11/2021	09:15:00	00:15:00	52.7	66.3	40.3
22/11/2021	09:30:00	00:15:00	52.8	65.5	41.6
22/11/2021	09:45:00	00:15:00	53.1	71.3	40.3
22/11/2021	10:00:00	00:15:00	52.1	65.6	38.7
22/11/2021	10:15:00	00:15:00	51.9	66.2	38.6
22/11/2021	10:30:00	00:15:00	51.4	61.6	40.0
22/11/2021	10:45:00	00:15:00	50.5	66.6	37.1
22/11/2021	11:00:00	00:15:00	50.6	64.6	39.4
22/11/2021	11:15:00	00:15:00	50.9	63.8	38.5
22/11/2021	11:30:00	00:15:00	51.9	75.1	35.6
22/11/2021	11:45:00	00:15:00	50.6	63.5	36.6
22/11/2021	12:00:00	00:15:00	49.7	64.1	35.7
22/11/2021	12:15:00	00:15:00	50.6	66.8	39.0
22/11/2021	12:30:00	00:15:00	50.7	68.7	38.4
22/11/2021	12:45:00	00:15:00	49.4	67.6	36.9
22/11/2021	13:00:00	00:15:00	51.5	64.3	38.4

Start Date	Start Time	Duration	L_{Aeq}	L_{AFMax}	L_{A90}
dd/mm/yyyy	hh:mm:ss	hh:mm:ss	dB	dB	dB
22/11/2021	13:15:00	00:15:00	51.6	63.8	36.2
22/11/2021	13:30:00	00:15:00	55.7	73.8	38.6
22/11/2021	13:45:00	00:15:00	51.2	66.7	38.9
22/11/2021	14:00:00	00:15:00	52.3	70.1	37.8
22/11/2021	14:15:00	00:15:00	50.8	63.9	36.3
22/11/2021	14:30:00	00:15:00	51.4	68.8	38.4
22/11/2021	14:45:00	00:15:00	52.4	64.4	39.8
22/11/2021	15:00:00	00:15:00	52.4	65.3	40.0
22/11/2021	15:15:00	00:15:00	52.4	65.1	39.6
22/11/2021	15:30:00	00:15:00	51.7	61.5	41.7
22/11/2021	15:45:00	00:15:00	52.3	62.4	39.1
22/11/2021	16:00:00	00:15:00	52.7	64.1	40.5
22/11/2021	16:15:00	00:15:00	54.7	67.1	41.8
22/11/2021	16:30:00	00:15:00	53.4	63.8	38.8
22/11/2021	16:45:00	00:15:00	53.8	64.0	40.0
22/11/2021	17:00:00	00:15:00	55.5	67.1	39.6
22/11/2021	17:15:00	00:15:00	57.6	66.8	44.1
22/11/2021	17:30:00	00:15:00	57.6	69.9	45.3
22/11/2021	17:45:00	00:15:00	57.6	68.4	43.8
22/11/2021	18:00:00	00:15:00	58.8	70.9	41.0
22/11/2021	18:15:00	00:15:00	55.9	69.3	35.0
22/11/2021	18:30:00	00:15:00	55.1	71.2	38.3
22/11/2021	18:45:00	00:15:00	54.1	66.9	35.7
22/11/2021	19:00:00	00:15:00	53.3	70.2	35.3
22/11/2021	19:15:00	00:15:00	53.5	65.9	37.3
22/11/2021	19:30:00	00:15:00	51.0	62.7	36.2
22/11/2021	19:45:00	00:15:00	51.2	63.9	34.6
22/11/2021	20:00:00	00:15:00	50.0	62.7	34.0
22/11/2021	20:15:00	00:15:00	55.4	75.4	35.2
22/11/2021	20:30:00	00:15:00	50.5	65.1	32.8
22/11/2021	20:45:00	00:15:00	46.7	60.4	34.2
22/11/2021	21:00:00	00:15:00	46.9	65.4	32.5
22/11/2021	21:15:00	00:15:00	49.1	67.9	31.8
22/11/2021	21:30:00	00:15:00	52.2	66.2	32.7
22/11/2021	21:45:00	00:15:00	49.5	68.9	26.2
22/11/2021	22:00:00	00:15:00	50.0	66.3	34.1
22/11/2021	22:15:00	00:15:00	52.5	70.7	34.3
22/11/2021	22:30:00	00:15:00	50.5	70.1	28.2
22/11/2021	22:45:00	00:15:00	40.6	61.1	21.9
22/11/2021	23:00:00	00:15:00	44.2	68.4	23.6
22/11/2021	23:15:00	00:15:00	41.2	63.7	24.6
22/11/2021	23:30:00	00:15:00	43.8	60.2	22.9
22/11/2021	23:45:00	00:15:00	40.0	59.9	20.7
23/11/2021	00:00:00	00:15:00	39.2	59.5	20.3
23/11/2021	00:15:00	00:15:00	45.5	68.4	32.7
23/11/2021	00:30:00	00:15:00	44.2	63.7	33.3
23/11/2021	00:45:00	00:15:00	41.8	63.8	24.0
23/11/2021	01:00:00	00:15:00	30.5	43.1	19.1
23/11/2021	01:15:00	00:15:00	38.3	57.4	21.2
23/11/2021	01:30:00	00:15:00	30.4	36.8	20.3

Start Date	Start Time	Duration	L_{Aeq}	L_{AFMax}	L_{A90}
dd/mm/yyyy	hh:mm:ss	hh:mm:ss	dB	dB	dB
23/11/2021	01:45:00	00:15:00	40.6	64.3	21.7
23/11/2021	02:00:00	00:15:00	32.6	37.3	20.2
23/11/2021	02:15:00	00:15:00	32.3	37.7	19.6
23/11/2021	02:30:00	00:15:00	31.7	39.2	19.4
23/11/2021	02:45:00	00:15:00	30.9	37.3	18.8
23/11/2021	03:00:00	00:15:00	37.5	59.8	19.0
23/11/2021	03:15:00	00:15:00	37.6	57.8	19.5
23/11/2021	03:30:00	00:15:00	33.8	46.2	32.5
23/11/2021	03:45:00	00:15:00	44.1	67.3	32.6
23/11/2021	04:00:00	00:15:00	38.1	59.9	22.9
23/11/2021	04:15:00	00:15:00	34.4	39.0	29.3
23/11/2021	04:30:00	00:15:00	44.9	63.4	31.2
23/11/2021	04:45:00	00:15:00	45.1	61.0	29.6
23/11/2021	05:00:00	00:15:00	48.6	63.3	30.3
23/11/2021	05:15:00	00:15:00	49.6	67.2	28.5
23/11/2021	05:30:00	00:15:00	49.7	66.8	33.6
23/11/2021	05:45:00	00:15:00	47.5	62.2	24.3
23/11/2021	06:00:00	00:15:00	47.8	64.4	33.6
23/11/2021	06:15:00	00:15:00	50.1	63.5	35.6
23/11/2021	06:30:00	00:15:00	51.1	64.9	32.5
23/11/2021	06:45:00	00:15:00	50.9	66.0	36.7
23/11/2021	07:00:00	00:15:00	52.5	63.6	38.5
23/11/2021	07:15:00	00:15:00	52.2	63.0	37.4
23/11/2021	07:30:00	00:15:00	54.2	66.9	41.4
23/11/2021	07:45:00	00:15:00	54.7	67.1	42.4
23/11/2021	08:00:00	00:15:00	54.2	65.3	41.2
23/11/2021	08:15:00	00:15:00	55.0	65.4	41.3
23/11/2021	08:30:00	00:15:00	54.4	65.4	44.7
23/11/2021	08:45:00	00:15:00	55.1	71.6	41.3
23/11/2021	09:00:00	00:12:30	56.8	81.2	42.3

Run001

Start Date	Start Time	Duration	L_{Aeq}	L_{AFMax}	L_{A90}
dd/mm/yyyy	hh:mm	hh:mm:ss	dB	dB	dB
23/11/2021	09:59	00:10:00	90.6	103.9	84.9
23/11/2021	10:16	00:10:00	87.5	96.7	75.4
23/11/2021	10:26	00:10:00	89.4	96.5	79.7
23/11/2021	10:43	00:10:00	90.6	103.3	83.1

Run002

Start Date	Start Time	Duration	L_{Aeq}	L_{AFMax}	L_{A90}
dd/mm/yyyy	hh:mm	hh:mm:ss	dB	dB	dB
23/11/2021	09:33	00:10:00	52.5	86.2	36.1
23/11/2021	09:57	00:10:00	47.3	70.9	42.1
23/11/2021	10:15	00:10:00	64.4	76	51.7
23/11/2021	10:25	00:10:00	66.4	73.5	57.7

Start Date	Start Time	Duration	L_{Aeq}	L_{AFMax}	L_{A90}
dd/mm/yyyy	hh:mm	hh:mm:ss	dB	dB	dB
23/11/2021	10:42	00:10:00	62.5	77.1	33.6
23/11/2021	10:53	00:10:00	63.4	79.6	35.9

APPENDIX C – COMMENT / COMPLAINT FORM (EXAMPLE)

	Noise Complaint / Comment
Date and time complaint received	
Name of complainant	
Address of complainant	
Telephone number and email of complainant	
Location of noise disturbance (address)	
Time disturbance noted	
Nature of complaint (vocal, bass, music in general, inside or outside)	
Additional comment	
Visit requested	
Action takan	

APPENDIX D - 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. *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.*
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. *NOTE: The ambient sound comprises the residual sound and the specific sound when present.*
Ambient sound level, $L_a = L_{Aeq,T}$ (BS 4142:2014)	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 *NOTE: The ambient sound level is a measure of the residual sound and the specific sound when present.*
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, $L_{A90,T}$ (BS 4142:2014)	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. *NOTE: The reference values used within the C_{tr} calculation are based on urban traffic noise.*
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, $L_{Aeq,T}$ (BS 4142:2014)	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 (m2), 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. *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.*
Free-field level	Sound pressure level away from reflecting surfaces. *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.*

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. *NOTE: The location(s) within the room at which the ambient indoor noise is to be measured or calculated ought to be considered.*
Measurement time interval, T_m (BS 4142:2014)	Total time over which measurements are taken. *NOTE: This may consist of the sum of a number of non-contiguous, short-term measurement time intervals.*
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. *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.*
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 (BS 4142:2014)	Specified interval over which the specific sound level is determined. *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.*
Residual sound (BS 4142:2014)	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, $L_r = L_{Aeq,T}$ (BS 4142:2014)	Equivalent continuous A-weighted sound pressure level of the residual sound at the assessment location over a given time interval, T.
Rating level, $L_{Ar,Tr}$	Equivalent continuous A-weighted sound pressure level of the noise, plus any adjustment for the characteristic features of the noise. *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.*
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, $L_s = L_{Aeq,Tr}$ (BS 4142:2014)	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 (BS 4142:2014)	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. *NOTE Common sources of ground-borne noise include railways and heavy construction work on adjacent construction sites.*
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. *NOTE Common sources of structure-borne noise include building services plant, manufacturing machinery and construction or demolition of the structure.*
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. *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).*
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)
$L_{Ar,Tr}$	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)
$LAeq,T$	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 acoustics and air quality consultants providing a fast, professional, cost-effective service across the UK.

Over 35 years of experience in the field.

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

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

UNIT 14, CHAPEL COURT, WERVIN, CHESTER. CH2 4BT

TEL. 0116 272 5908

EMAIL. INFO@NOISEAIR.CO.UK

WWW.NOISEAIR.CO.UK

NoiseAir
ACOUSTICS & AIR QUALITY