REPORT REFERENCE:

SA – 8150/Rev1

ENVIRONMENTAL NOISE IMPACT ASSESSMENT

Incorporating

Building Bulletin 93 February 2015

British Standard 8233: 2014

British Standard 4142: 2014+A1:2019

CLIENT:

ACG Architects

SITE:

Whitley Park Primary & Nursery School

Brixham Road

Reading

Berkshire

RG2 7RB

SURVEY DATES:

5th - 8th September 2025

Report By
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1 EXECUTIVE SUMMARY

1.1 Instruction

Sound Advice Acoustics Ltd have been instructed by ACG Architects to undertake a background noise survey to British Standard 8233: 2014 to determine the impact of existing noise sources on the proposed education scheme at Whitley Park Primary & Nursery School, Brixham Road, Reading, Berkshire, RG2 7RB and set maximum design noise criteria for any proposed plant that could be installed on the site. This assessment has been carried out to satisfy the minimum requirements of Building Bulletin 93 February 2015.

1.2 Scope of Report

The measurements will be undertaken in accordance with ISO 1996 – Part 2: 2017 to determine the existing background noise levels and British Standard 8233: 2014 will be used to determine the impact of existing traffic on the internal noise environment within the proposed new build school extension. This report aims to establish the following:

- Existing background noise levels within the area;
- Assess the potential internal noise levels on the proposed rooms;
- Provide specifications for the ventilation and window glazing with the proposed rooms.
- Set a Plant criteria

1.3 Summary of Results

1.3.1 Measured Background Noise Levels

Continuous background noise measurements were undertaken between the 5th – 8th September 2025 at Assessment Position 1. The maximum day time levels were found to be $L_{Aeq,\ 10\ hour}$ 58.6 dB. The modal 1-hour day time background noise levels between 08:00 and 18:00 was found to be $L_{A90\ 1\ hour}$ 48.0 dB at the assessment position.

Assessment Position	Date Start	Date Finish	Daytime LAeq
Position 1 Front	05/09/2025	08/09/2025	58.6

Assessment Position	Date Start	Date Finish	Daytime LA90
Position 1 Front	05/09/2025	08/09/2025	48.0

1.4 Proposed Plant Criteria

Calculations and assessments are to be made within this report to generate a maximum noise level criteria to which all plant should be selected to. The maximum noise level calculated is to be achieved at 1.0m & 10m from the units in situ with all units operating under normal load.

The following calculations have been based on the recorded LA90 background noise level over a typical 24 hour period at the measurement position 1.

The above calculations have demonstrated that in order to meet the criteria of +/- 0dB below the recorded background noise level, the following external noise level plant criteria should be achieved at 1.0m and 10m from all units operating at the same time under normal load.

DAYTIME 08:00 – 18:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
68.9	65.6	63.4	62.5	64.1	60.7	55.3	49.7	45.4	**68**	Calculated Noise Source Level @ 1.0m
48.9	45.6	43.4	42.5	44.1	40.7	35.3	29.7	25.4	**48**	Calculated Noise Source Level @ 10.0m
Sound Pressure Level at 1.0m from plant (ref 2 x 10-5 Pa)										

The above calculations have been made on the worst-case scenario with the plant being positioned no closer than 34.0m (linear) to the nearest affected window.

1.5 Assessment

1.5.1 Daytime (08:00 – 18:00)

Rating Level	**48 dB**	**9.1**	**The acoustic feature correction is added to the specific noise level**
Background Noise Level $L_{A90,1\ hour}$	48 dB	8.1	Modal Background Noise Level (08:00 – 18:00)
Assessment Level	+/- 0 dB	11	The background level is subtracted from the rating level.
Conclusion BS 4142:2014+A1:2019[1]	+10 dB Significant Adverse Effects, +5 dB Adverse Effects, +0 dB Low Impact		
Assessment	**+/- 0 dB**		
Conclusion	**The assessment level is 'Low Impact'**		

1.6 Operation of the Site

On the longest day the site is likely to be operational between 8am – 6pm on weekdays only. Therefore, the weekend recorded data has been omitted.

1.7 Conclusions

1.7.1 External Ambient Noise Assessment BS 8233: 2014

Noise levels have been recorded at the above site over a typical 24 hour in order to obtain typical noise levels associated with the site.

In order to calculate the maximum internal noise level within the proposed development on the external facades of the proposed construction and ensure the criteria's have been met in accordance with BB93, the average $L_{Aeq\ 10\ HOUR}$ dB noise levels between 08:00hrs and 18:00 hrs have been used in accordance with British Standard 8233: 2014 'Sound Insulation and Reduction of Buildings - Code of Practice'. The proposed development can achieve the requirements of Building Bulletin 93 using the following glazing and ventilation specification in the table below:

Rooms Name	Required Glazing	Required Ventilation	Calculated Internal Noise Level	BB93 Target Criteria
Food Room	4mm / 16mm / 4mm	Titon V75 / C75	29.7	30.0
Art Room	4mm / 16mm / 4mm	Titon V75 / C75	29.3	30.0
Group Room	4mm / 16mm / 4mm	Titon V75 / C75	24.9	40.0
Hall	4mm / 16mm / 4mm	Titon V75 / C75	32.3	35.0

1.7.2 External Plant Assessment BS 4142: 2014+A1:2019

Calculations and assessments have been made within this report to generate a maximum noise level criteria to which all plant should be selected to. The maximum noise level calculated is to be achieved at 1.0m & 10m from the units in situ with all units operating under normal load.

1.7.3 Planning

National Planning Policy Framework 2024 suggests that planning permission should be granted unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the framework taken as a whole, or specific policies in the framework indicate the application should be restricted.

Based on the calculations and assessments made within this report it is the professional opinion of Sound Advice Acoustics Ltd that the proposed development can demonstrate compliance with the National Planning Policy Framework 2024, NPPF & NPSE.

2 INTRODUCTION

Sound Advice Acoustics Ltd have been instructed by ACG Architects to undertake a background noise survey to British Standard 8233: 2014 to determine the impact of existing noise sources on the proposed education scheme at Whitley Park Primary & Nursery School, Brixham Road, Reading, Berkshire, RG2 7RB and set maximum design noise criteria for any proposed plant that could be installed on the site. This assessment has been carried out to satisfy the minimum requirements of Building Bulletin 93 February 2015.

Ambient noise levels were measured between the 5th - 8th September 2025. This report by Sound Advice Acoustics Ltd gives the results of these measurements and an assessment in accordance with government planning guidelines and relevant standards together with mitigation measures as required.

2.1 Building Bulletin 93

The acoustic assessments are to be separated into two sections. The external noise assessments and the internal noise assessment will examine the proposed building structures and comment on any improvements in order to comply with the relevant criteria's within The Building Regulation 2003 Approved Document E Part E4, referring to Building Bulletin 93.

This initial report will deal with the external assessment and review the external façade construction details. From the recorded data, the average and highest recorded levels are to be evaluated. Daytime (08:00 hrs – 18:00 hrs). The daytime hours represent the period the school will be in use for normal teaching of children.

2.2 Proposed Plant Criteria

Calculations and assessments are to be made within this report to generate a maximum noise level criteria to which all plant should be selected to. The maximum noise level calculated is to be achieved at 1.0m & 10m from the units in situ with all units operating under normal load.

2.3 BS 8233: 2014 & BB93 Internal Criteria

With regards to external ambient noise, environmental noise levels are be monitored at the site in accordance with British Standard 7445: 2003 'Description and measurement of environmental noise assessments and calculation made in accordance with BS 8233: 2014 Sound Insulation and Noise Reduction for Buildings Code of Practice.

Criteria have been set in order to meet the requirements of Building Bulletin 93 for internal ambient noise levels.

2.4 BS 4142: 2014+A1:2019

British Standard 4142: 2014 +A1:2019 is to be adopted for the basis of this background noise level assessment. A BS 4142: 2014 +A1:2019 noise assessment will be carried out in order to demonstrate the existing acoustic impact the external plant could have on the nearest affected residential in order to demonstrate that these units will not have a significant and demonstrable adverse impact on the nearest noise sensitive premises in accordance with the National Planning Policy Framework.

2.5 National Planning Policy Framework 2024 (NPPF) and Noise Policy Statement for England 2010 (NPSE).

References and evaluations are to be made to the National Planning Policy Framework 2024 (NPPF) and the Noise Policy Statement for England 2010 (NPSE). The purpose of this document is to include all aspects of environmental noise within assessments i.e. environmental noise, neighbour noise and neighbourhood noise. Noise is to be considered alongside other relevant issues relating to the site and should not be considered in isolation, according to the NPSE.

There are several key phrases within the NPSE aims and these are discussed below.

2.5.1 "Significant adverse" and "adverse"

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

2.5.2 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.

2.5.3 LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.
Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed adverse effect level.

2.5.4 SOAEL – Significant Observed Adverse Effect Level

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

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

3 SITE LOCATION

3.1 Existing Development

3.2 Proposed Development

4 PROCEDURE

External noise levels were recorded over a typical period and analysis date extrapolated between 07:00 hrs 5th September – and 07:00 hrs on 8th September 2025 at position 1 as detailed on the attached plan sketch layout.

Position 1 was located as marked on the site plan in order to capture the associated background noise levels and representative ambient noise levels for this particular area. Sample measurements were recorded over continuous 5 minute samples and from this data the hourly LAeq daytime values have been evaluated. Sound Pressure Levels were recorded on the following setting along with a full octave band frequency analysis measured simultaneously and between 31.5 Hz and 16.0 kHz.

Daytime 08:00 – 18:00	
$L_{Aeq\ 1\ HOUR}$ dB	$L_{A10\ 1\ HOUR}$ dB
$L_{AMAX\ 1\ HOUR}$ dB	$L_{A50\ 1\ HOUR}$ dB
$L_{AMIN\ 1\ HOUR}$ dB	$L_{A90\ 1\ HOUR}$ dB

Calculations have been made in accordance with BS 8233: 2014 'Sound Insulation and Reduction of Buildings - Code of Practice'. Recommendations were made for any additional acoustics measures to conform to these standards.

From the downloaded recorded results, the daytime and night time periods were assessed and used within the above calculations as $L_{Aeq\ 10\ HOUR}$ dB levels for daytime. These are detailed within this report. All data averaged throughout the day has been done so on a logarithmic basis to give accurate $L_{Aeq\ 10\ Hour}$ dB daytime noise levels.

Finally, it should be noted that calculations are carried out with façade levels corrected from the recorded noise levels to the calculated façade levels.

5 APPARATUS

The equipment was calibrated using a sound pressure level of 114.0 dB at an octave band centre frequency of 1000Hz with reference to 2 x 10^{-5} Nm^{-2} before and after the tests and the equipment set to have no inaccuracy greater than 0.2dB.

All the following equipment was calibrated in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service (UKAS) on the following dates. Calibration schedules are implemented within Sound Advice Acoustics Ltd in accordance with UKAS directive LAB 23.

5.1 Svantek Noise Meter s/n 154471 environmental testing

Description	Make	Type	Serial No.	Calibration Intervals	Cert No	Last Calibrated	Next Due Calibration
Integrated Sound Level Meter	Svantek UK	SV 307A	154471	2 YEARS	N/A	05.08.2024	05.08.2026
Calibrator	Svantek UK	SV 33b	154757	1 YEAR	C00584	26.06.2025	26.06.2026
Integrated Sound Level Meter	Svantek UK	ST 30A (v3)	157919	2 YEARS	N/A	05.08.2024	05.08.2026

Full calibration certificates are available upon request.

6 RESULTS

6.1 Downloaded results, and averages.

6.1.1 5th September 2025 - Position 1

NOISE LEVEL SUMMARY ASSESSMENT												
Date / Time	**LAeq**	**LAmax**	**LA90**	**63**	**125**	**250**	**500**	**1.0k**	**2.0k**	**4.0k**	**8.0k**	**16.0k**
DAYTIME 08:00 - 18:00 LAeq 16 HOUR & Corresponding LAmax 16 HOUR	58.6	93.0	48.0	54.9	51.4	49.6	50.7	54.5	53.3	48.3	41.2	31.4

6.1.2 6th September 2025 – Position 1

NOISE LEVEL SUMMARY ASSESSMENT												
Date / Time	**LAeq**	**LAmax**	**LA90**	**63**	**125**	**250**	**500**	**1.0k**	**2.0k**	**4.0k**	**8.0k**	**16.0k**
DAYTIME 08:00 - 18:00 LAeq 16 HOUR & Corresponding LAmax 16 HOUR	51.5	72.7	48.0	54.6	51.9	50.0	48.8	47.1	40.7	41.1	40.0	34.8

6.1.3 7th September 2025 - Position 1

NOISE LEVEL SUMMARY ASSESSMENT												
Date / Time	**LAeq**	**LAmax**	**LA90**	**63**	**125**	**250**	**500**	**1.0k**	**2.0k**	**4.0k**	**8.0k**	**16.0k**
DAYTIME 08:00 - 18:00 LAeq 16 HOUR & Corrsponding LAmax 16 HOUR	49.8	74.5	47.0	53.6	52.1	48.9	47.6	44.6	39.1	39.3	37.9	32.2

6.1.4 8th September 2025 - Position 1

NOISE LEVEL SUMMARY ASSESSMENT												
Date / Time	**LAeq**	**LAmax**	**LA90**	**63**	**125**	**250**	**500**	**1.0k**	**2.0k**	**4.0k**	**8.0k**	**16.0k**
DAYTIME 08:00 - 18:00 LAeq 16 HOUR & Corresponding LAmax 16 HOUR	53.4	86.4	48.0	54.7	51.4	49.2	48.3	49.9	46.5	41.1	35.5	31.2

The following noise levels have been corrected for the highest recorded façade levels and used within the BS 8233: 2014 calculations.

NOISE LEVEL SUMMARY ASSESSMENT												
Date / Time	**LAeq**	**LAmax**	**LA90**	**63**	**125**	**250**	**500**	**1.0k**	**2.0k**	**4.0k**	**8.0k**	**16.0k**
DAYTIME 08:00 - 18:00 LAeq 16 HOUR & Corresponding LAmax 16 HOUR	58.6	93.0	48.0	54.9	51.4	49.6	50.7	54.5	53.3	48.3	41.2	31.4

7 RECOMMENDATIONS

For the purpose of this assessment, the corresponding façade levels will be used within the BS 8233: 2014 calculations in order evaluate the worst-case scenario and select the correct window specification.

Therefore, in order to achieve the required noise levels, the following additional acoustic measures have been calculated.

It should be noted that the calculations have been made with the proposed windows closed. Additional calculations were made for the top floor due to the influence of sound transmission into the various rooms via the roof / ceiling i.e. an increased impeding façade. Inputted levels into the calculation sheets have been corrected for distance attenuation and free field in accordance with the aforementioned British Standard.

7.1 Calculation Procedure to BS 8233: 2014

The following calculations have been carried out in order to determine the required window and ventilation specification in order to meet the requirements of BS 8233: 2014.

The following tables demonstrate the calculated internal noise levels using both natural trickle vents (potentially attenuated) and MVHR systems which would negate the need for trickle vents.

7.2 Glazing & Ventilation to Rooms

The following tables demonstrate the individual element performance criteria required.

Rooms Name	Required Glazing	Required Ventilation	Calculated Internal Noise Level	BB93 Target Criteria
Food Room	4mm / 16mm / 4mm	Titon V75 / C75	29.7	30.0
Art Room	4mm / 16mm / 4mm	Titon V75 / C75	29.3	30.0
Group Room	4mm / 16mm / 4mm	Titon V75 / C75	24.9	40.0
Hall	4mm / 16mm / 4mm	Titon V75 / C75	32.3	35.0

7.3 Ventilation (D_{ne})

Octave Band Frequency	125	250	500	1000	2000	4000	Dn,e,w dB
Titon V75 /C75 Vent	37.0	37.0	36.1	46.9	49.2	55.2	44.0

7.4 Glazing (R_{wi})

Octave Band Frequency	125	250	500	1000	2000	4000	Rw(C;Ctr) dB
4mm glass / 16mm air gap / 4mm glass	21.0	17.0	25.0	35.0	37.0	31.0	29(-1,-4)

7.5 Walls (R_{ew})

Octave Band Frequency	125	250	500	1000	2000	4000	Rw dB
Brick and Concrete Block	40.0	44.0	45.0	51.0	56.0	56.0	54.0

7.6 Roof (R_{rr})

Octave Band Frequency	125	250	500	1000	2000	4000	Rw dB
Minimum Value	39.0	48.0	55.0	60.0	59.0	61.0	57.0

The above are minimum construction attenuation values and should alternative methods be selected; these should be equal to or greater than the above corresponding values. Calculations carried out have indicated the above specifications should be installed for this site.

8 CALCULATIONS

The following calculations have been based on the recorded LA90 background noise level over a typical 24 hour period at the measurement position 1.

DAYTIME 08:00 – 18:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
54.7	51.4	49.2	48.3	49.9	46.5	41.1	35.5	31.2		Recorded Background Noise Levels
3	3	3	3	3	3	3	3	3		Reflection at Residential
5	5	5	5	5	5	5	5	5		BS 4142: 2014+A1:2019 Corrections
5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4		LAeq - LA90
30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6		Distance Correction
0	0	0	0	0	0	0	0	0		Barrier Attenuation
3	3	3	3	3	3	3	3	3		Reflection at Source
44.3	41.0	38.8	37.9	39.5	36.1	30.7	25.1	20.8	**43**	Target Level at Residential
6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		Reflections
30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6		Distance and Barriers
68.9	65.6	63.4	62.5	64.1	60.7	55.3	49.7	45.4	**68**	Calculated Noise Source Level @ 1.0m
48.9	45.6	43.4	42.5	44.1	40.7	35.3	29.7	25.4	**48**	Calculated Noise Source Level @ 10.0m

The above calculations have demonstrated that in order to meet the criteria of +/-0 dB below the recorded background noise level, the following external noise level plant criteria should be achieved at 1.0m and 10m from all units operating at the same time under normal load.

DAYTIME 08:00 – 18:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
68.9	65.6	63.4	62.5	64.1	60.7	55.3	49.7	45.4	**68**	Calculated Noise Source Level @ 1.0m
48.9	45.6	43.4	42.5	44.1	40.7	35.3	29.7	25.4	**48**	Calculated Noise Source Level @ 10.0m
Sound Pressure Level at 1.0m from plant (ref 2 x 10-5 Pa)										

The above calculations have been made on the worst-case scenario with the plant being positioned no closer than 34.0m (linear) to the nearest affected window.

Based on the above being achieved, the following noise assessment can be concluded.

9 BRITISH STANDARD 4142:2014+A1:2019

9.1 Criteria

We have calculated the nearest noise sensitive premises to that of the residential accommodation units nearby with the proposed plant being no closer than 34m away.

9.2 Scope of British Standard 4142: 2014

In the assessment of the existing surrounding commercial premises, consideration has been given to the scope of British Standard 4142:2014+A1:2019, which in section 1, details applicability of this standard to rating assessing sound of an industrial and/or commercial nature. It is considered appropriate that both the background noise levels and the rating noise levels obtained fall within the scope of British Standard 4142:2014+A1:2019 by using outdoor sound levels to assess the effect of sound on local residents.

9.3 Terms and Definitions

Symbol	Term	Definition
AP	Assessment Position	Position externally at the façade property under investigation at which the assessment is undertaken which is usually 1m from the 1st floor bedroom window.
EP	Equivalent Position	Position at which the background noise levels are measured if there is no access to the assessment position or if source under investigation is audible.
$L_S = L_{Aeq,\,T}$	Specific Level	The average continuous equivalent sound pressure level of the source at the assessment position.
$L_{Ar,Tr}$	Rating Level	The average continuous equivalent sound pressure level of the source at the assessment position with a correction to account for the characteristic features.
$L_r = L_{Aeq,\,T}$	Residual Level	The average continuous equivalent sound pressure level at the assessment position without the source operating.
$L_{A90,\,T}$	Background Level	The sound pressure level that is not exceeded 90% of the time at the assessment position.
$L_a = L_{Aeq,\,T}$	Ambient Level	The totally encompassing sound at the assessment position including the residual and specific noise.

9.4 Assessment Position

The assessment position 1 was established as the residential accommodation premises nearby and no closer than 34m from the proposed plant.

9.5 Rating Levels (Character Correction)

It is appropriate to add a character correction where there is a new source that cannot be measured in line with BS 4142:2014+A1:2019. There are 3 methods for approaching this.

a) Subjective method
b) Objective method (for tonality)
c) Reference method

9.6 Subjective Method

The subjective method establishes a rating penalty that is added to the specific noise level if any of the following is present at the assessment position. If a tone is expected to be present a character correction of 0 dB to 6 dB is added depending on how perceptible it is at noise sensitive locations.

BS 4142:2014+A1:2019 – Section 9.2 Subjective Method	Perceptibility to noise sensitive facades	Correction
Tonality Ranging from not tonal to prominently tonal	Not tonal	+0
	Just perceptible	+2
	Clearly perceptible	+4
	Highly perceptible	+6

If the source is expected to be impulsive a character correction of 0 dB to 9 dB is added depending on how perceptible it is at noise sensitive locations.

BS 4142:2014+A1:2019 – Section 9.2 Subjective Method	Perceptibility to noise sensitive facades	Correction
Impulsivity Considering both the rapidity and any overall change in sound levels	Not impulsive	+0
	Just perceptible	+3
	Clearly perceptible	+6
	Highly perceptible	+9

When the sound features are neither tonal nor impulsive, a character correction of +3 is added for the readily distinctive quality against the acoustic environment or for the intermittency of the source.

BS 4142:2014+A1:2019 – Section 9.2 Subjective Method	Perceptibility to noise sensitive facades	Correction
Readily Distinctive	Is not present	+0
	Is present	+3
Intermittency	Is not present	+0
	Is present	+3

9.7 Assessment Criterion

The significance of the resulting noise on the residential property depends on the margin by which it exceeds the background noise levels. British Standard 4142:2014+A1:2019 provides the following guidance within section 11.

Difference	Assessment of Impact
+10 dB	Indication of a significant adverse impact
+5 dB	Indication of an adverse impact
+0 dB	Indication of low impact

9.8 Assessments

9.8.1 Daytime (08:00 – 18:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1\ hour}$	43 dB	7	Calculated using ISO 9613:1996[3].
Tonality	+2 dB	8.1	Tonality Characteristic
Impulsivity	+3 dB	8.1	Impulsive Characteristic
Rating Level	48 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1\ hour}$	48 dB	8.1	Modal Background Noise Level
Assessment Level	+/- 0 dB	11	The background level is subtracted from the rating level.
Assessment	+/- 0 dB		
Conclusion	The assessment level is 'Low Impact'		

9.9 Assessment Conclusion

The background noise levels were measured at the equivalent position, chosen as it most represented the closest noise sensitive façade, located within the existing school grounds between 07:00 on 5th September and 07:00 on 8th September 2025

It can be seen from the above assessments that with any new plant achieving the proposed maximum noise level criteria detailed within this report, an assessment conclusion of Low Impact could be expected. Therefore, no further mitigation measures would be required if the design criteria is adhered to.

10 NPPF & NPSE

The National Planning Policy Framework 2024 (NPPF) and assessments to the Noise Policy Statement for England 2010 (NPSE) should be made in conjunction with each other. Paragraphs 198 - 201 of the National Planning Policy Framework 2024 (NPPF) states the following:

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:

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

Paragraph 199 Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications.

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

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

The Noise Policy Statement for England gives various levels of effect as detailed within this report.

With the glazing / ventilation specifications achieved within this report, the development can be implemented within the guidelines of the aforementioned documents and ensure a conclusion of **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.

11 CONCLUSION

11.1.1 Measured Background Noise Levels

Continuous background noise measurements were undertaken between the 5th - 8th September 2025 at Assessment Position 1. The maximum day time levels were found to be $L_{Aeq,\ 10\ hour}$ 58.6 dB. The modal 1-hour day time background noise levels between 08:00 and 18:00 was found to be $L_{A90\ 1\ hour}$ 48.0 dB at the assessment position.

Assessment Position	Date Start	Date Finish	Daytime LAeq
Position 1 Front	05/09/2025	08/09/2025	58.6

Assessment Position	Date Start	Date Finish	Daytime LA90
Position 1 Front	05/09/2025	08/09/2025	48.0

11.2 Proposed Plant Criteria

Calculations and assessments are to be made within this report to generate a maximum noise level criteria to which all plant should be selected to. The maximum noise level calculated is to be achieved at 1.0m & 10m from the units in situ with all units operating under normal load.

The following calculations have been based on the recorded LA90 background noise level over a typical 24 hour period at the measurement position 1.

The above calculations have demonstrated that in order to meet the criteria of +/- 0dB below the recorded background noise level, the following external noise level plant criteria should be achieved at 1.0m and 10m from all units operating at the same time under normal load.

DAYTIME 08:00 – 18:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
68.9	65.6	63.4	62.5	64.1	60.7	55.3	49.7	45.4	**68**	Calculated Noise Source Level @ 1.0m
48.9	45.6	43.4	42.5	44.1	40.7	35.3	29.7	25.4	**48**	Calculated Noise Source Level @ 10.0m
Sound Pressure Level at 1.0m from plant (ref 2 x 10-5 Pa)										

The above calculations have been made on the worst-case scenario with the plant being positioned no closer than 34.0m (linear) to the nearest affected window.

11.3 Assessment

11.3.1 Daytime (08:00 – 18:00)

Rating Level	48 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1\ hour}$	48 dB	8.1	Modal Background Noise Level (08:00 – 18:00)
Assessment Level	+/- 0 dB	11	The background level is subtracted from the rating level.
Conclusion BS 4142:2014+A1:2019[1]	+10 dB Significant Adverse Effects, +5 dB Adverse Effects, +0 dB Low Impact		
Assessment	**+/- 0 dB**		
Conclusion	**The assessment level is 'Low Impact'**		

11.4 Operation of the Site

On the longest day the site is likely to be operational between 8am – 6pm on weekdays only. Therefore, the weekend recorded data has been omitted.

11.5 Conclusions

11.5.1 External Ambient Noise Assessment BS 8233: 2014

Noise levels have been recorded at the above site over a typical 24 hour in order to obtain typical noise levels associated with the site.

In order to calculate the maximum internal noise level within the proposed development on the external facades of the proposed construction and ensure the criteria's have been met in accordance with BB93, the average $L_{Aeq\ 10\ HOUR}$ dB noise levels between 08:00hrs and 18:00 hrs have been used in accordance with British Standard 8233: 2014 'Sound Insulation and Reduction of Buildings - Code of Practice'. The proposed development can achieve the requirements of Building Bulletin 93 using the following glazing and ventilation specification in the table below:

Rooms Name	Required Glazing	Required Ventilation	Calculated Internal Noise Level	BB93 Target Criteria
Food Room	4mm / 16mm / 4mm	Titon V75 / C75	29.7	30.0
Art Room	4mm / 16mm / 4mm	Titon V75 / C75	29.3	30.0
Group Room	4mm / 16mm / 4mm	Titon V75 / C75	24.9	40.0
Hall	4mm / 16mm / 4mm	Titon V75 / C75	32.3	35.0

11.5.2 External Plant Assessment BS 4142: 2014+A1:2019

Calculations and assessments have been made within this report to generate a maximum noise level criteria to which all plant should be selected to. The maximum noise level calculated is to be achieved at 1.0m & 10m from the units in situ with all units operating under normal load.

11.5.3 Planning

National Planning Policy Framework 2024 suggests that planning permission should be granted unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the framework taken as a whole, or specific policies in the framework indicate the application should be restricted.

Based on the calculations and assessments made within this report it is the professional opinion of Sound Advice Acoustics Ltd that the proposed development can demonstrate compliance with the National Planning Policy Framework 2024, NPPF & NPSE.

12 APPENDIX A – UNCERTAINTY

12.1 Scope

Section 10 of British Standard 4142: 2014 entitled *"Uncertainty"* requires the following:

> *"Consider the level of uncertainty in the data and associated calculations. Where the level of uncertainty could affect the conclusion, take reasonably practicable steps to reduce the level of uncertainty. Report the level and potential effects of uncertainty.*

Annex B of British Standard 4142: 2014 entitled "consideration of uncertainty and good practice for reducing uncertainty" makes reference to the University of Salford publication entitled "A Good Practice Guide on the Source and Magnitude of Uncertainty arising in the Practical Measurement of Environmental Noise" edition 1a dated May 2007.

12.2 Uncertainty of Measured Values

Ref	Source of Uncertainty Section 10.2 British Standard 4142: 2014	Value dB(A)	Distribution (Divisor)	Uncertainty dB(A)
a	Variability and complexity of sound source	0.50	$\sqrt{2}$	0.35
b	Variability and complexity of residual sound	0.00	$\sqrt{3}$	0.00
c	Residual sound present in specific sound	0.00	$\sqrt{3}$	0.00
d	Background noise position selection	0.10	$\sqrt{3}$	0.06
e	Distance between source and receiver	0.15	$\sqrt{2}$	0.11
f	Number of measurements taken (5 Days)	0.10	$\sqrt{3}$	0.06
g	Measurement time interval variation	0.00	$\sqrt{2}$	0.00
h	Range of times measurements taken	0.10	$\sqrt{3}$	0.06
i	Suitable weather conditions during measurements	0.20	$\sqrt{3}$	0.12
j	Application of British Standard 4142: 2014	0.10	$\sqrt{2}$	0.07
k	Rounding of each measurement	0.05	$\sqrt{3}$	0.03
l	Instrumentation – Calibration	1.20	$\sqrt{3}$	0.69
Reported Expanded Uncertainty (95% confidence, convergence k = 2)				1.61

12.3 Uncertainty in Calculations

Ref	Source of Uncertainty Section 10.2 British Standard 4142: 2014	Value dB(A)	Distribution (Divisor)	Uncertainty dB(A)
a	Impact of measured sound level on calculations	0.00	$\sqrt{2}$	0.00
b	Assumption on sound power level of source	0.00	$\sqrt{3}$	0.00
c	Uncertainty of calculation method (ISO 9613)	0.20	$\sqrt{3}$	0.12
d	Model fit against real world conditions	0.10	$\sqrt{3}$	0.06
e	Error in the calculation process	0.15	$\sqrt{2}$	0.11
Reported Expanded Uncertainty (95% confidence, convergence k = 2)				0.33

12.4 Uncertainty from Other Factors

Ref	Source of Uncertainty Section 10.2 British Standard 4142: 2014	Value dB(A)	Distribution (Divisor)	Uncertainty dB(A)
a	Standing waves or interference patterns	0.15	$\sqrt{3}$	0.09
b	Approximation of sound source to a point source	0.10	$\sqrt{3}$	0.06
c	Maintenance and repair of source over 15 years	0.50	$\sqrt{3}$	0.29
Reported Expanded Uncertainty (95% confidence, convergence k = 2)				0.61

12.5 Combined Reported Expanded Uncertainty

Ref	Source of Uncertainty Section 10.2 British Standard 4142: 2014	Value dB(A)	Distribution (Divisor)	Uncertainty dB(A)
a	Section 7.1.2. Uncertainty of measured values	2.7	$\sqrt{2}$	1.14
b	Section 7.1.3. Uncertainty of calculations	2.7	$\sqrt{2}$	0.23
c	Section 7.1.4. Uncertainty from other factors	2.7	$\sqrt{2}$	0.43
Combined Reported Expanded Uncertainty (95% confidence, convergence k = 2)				2.55

It should be noted that the uncertainty calculations have assumed a Type B uncertainty.

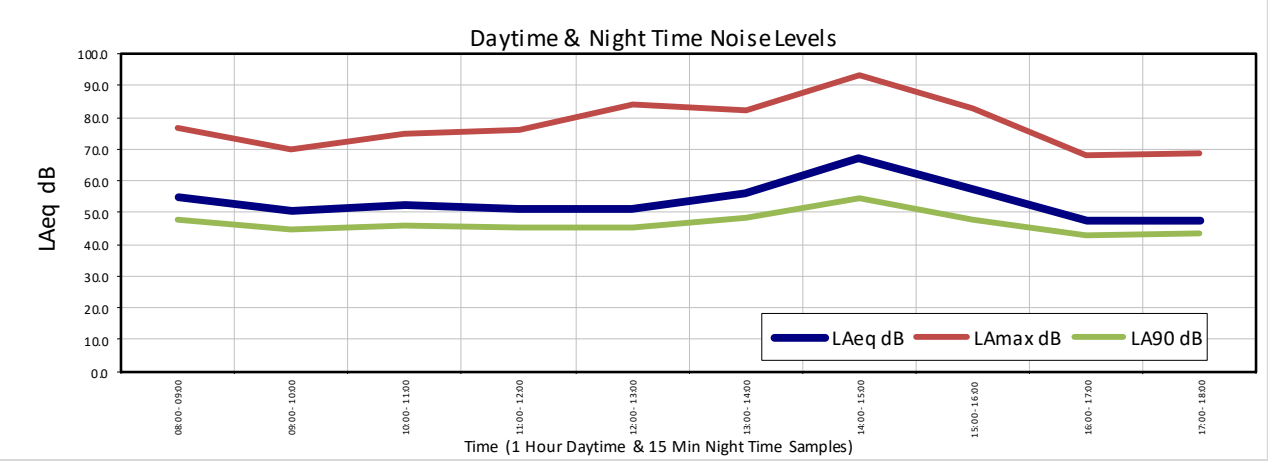
13 APPENDIX B - RESULTS

13.1 5th September 2025

FIGURE 1				Octave Band Centre Frequency (Hz)							
Date / Time	LAeq	LAmax	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16
DAYTIME 08:00 - 18:00 LAeq 10 HOUR & Corresponding LAmax 10 HOUR	58.6	93.0	48.0	54.9	51.4	49.6	50.7	54.5	53.3	48.3	41.2	3

DAYTIME NOISE LEVELS 08:00 - 18:00 1 HOUR SAMPLES

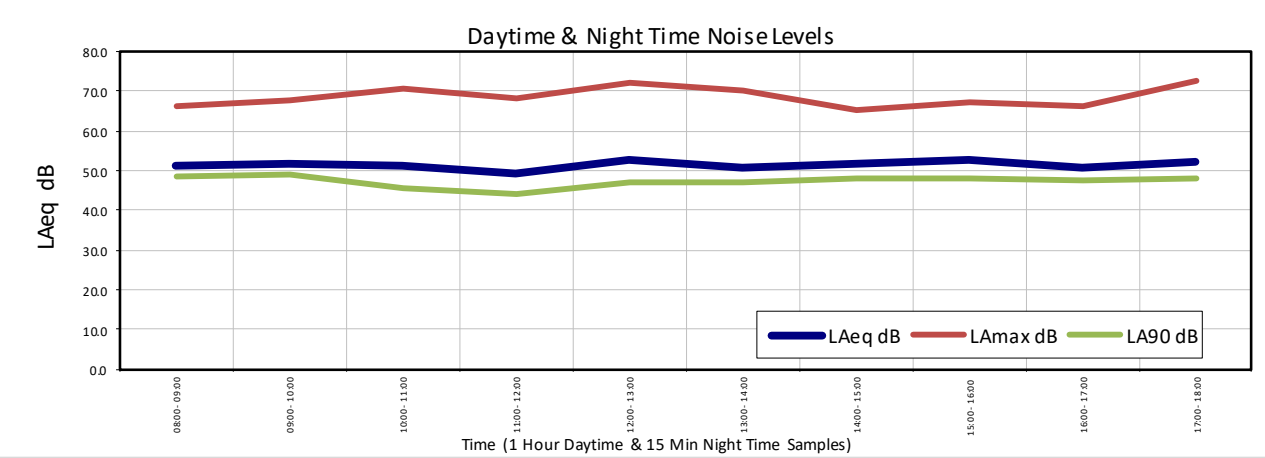
Date / Time	LAeq	LAmax	LA90	Octave Band Centre Frequency (Hz) 63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16
08:00 - 09:00	54.8	76.6	47.5	55.8	52.5	50.2	50.6	50.2	46.7	46.4	42.1	3
09:00 - 10:00	50.4	69.8	44.6	53.5	50.1	50.0	46.0	45.5	40.2	41.3	41.4	3
10:00 - 11:00	52.4	74.6	46.0	54.1	50.8	48.2	46.7	48.6	44.0	43.1	40.9	3
11:00 - 12:00	51.4	75.7	45.0	56.1	52.7	51.2	47.9	46.8	41.7	41.5	37.4	3
12:00 - 13:00	51.3	84.1	45.0	54.5	51.4	48.9	48.9	45.4	39.5	38.6	44.8	3
13:00 - 14:00	56.3	82.4	48.3	55.0	52.5	50.1	50.0	53.2	49.2	44.8	34.7	3
14:00 - 15:00	67.3	93.0	54.7	55.6	52.0	50.9	57.1	63.1	62.5	57.0	46.1	3
15:00 - 16:00	57.2	83.0	47.7	55.1	50.8	49.5	51.5	53.2	51.4	45.8	38.6	3
16:00 - 17:00	47.5	68.3	43.1	54.6	50.8	48.1	44.6	43.7	37.1	32.3	29.2	3
17:00 - 18:00	47.7	68.9	43.4	53.8	49.8	47.4	45.7	43.9	37.2	30.9	29.7	2



13.2 6th September 2025

FIGURE 2				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmax	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16
DAYTIME 08:00 - 18:00 LAeq 10 HOUR & Corresponding LAmax 10	51.5	72.7	48.0	54.6	51.9	50.0	48.8	47.1	40.7	41.1	40.0	3

DAYTIME NOISE LEVELS 08:00 - 18:00 1 HOUR SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmax	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16
08:00 - 09:00	51.3	66.1	48.3	53.3	51.0	49.7	48.4	47.6	36.7	41.9	38.6	2
09:00 - 10:00	51.7	67.5	49.1	54.5	52.0	50.3	49.2	48.5	38.1	39.1	37.0	3
10:00 - 11:00	51.1	70.9	45.6	53.8	51.8	50.1	50.3	45.5	36.8	39.9	38.3	3
11:00 - 12:00	49.2	68.4	44.3	53.6	51.4	48.9	48.3	44.4	36.7	33.6	33.8	3
12:00 - 13:00	52.8	72.1	47.3	56.0	54.1	51.9	50.4	48.0	42.9	41.5	40.4	3
13:00 - 14:00	50.9	70.1	47.2	54.2	52.0	50.6	46.8	46.4	41.0	40.7	40.5	3
14:00 - 15:00	51.6	65.2	48.0	55.1	51.3	49.0	47.5	47.1	42.1	42.5	41.9	3
15:00 - 16:00	52.5	67.3	48.0	54.5	51.8	49.6	48.8	47.9	43.1	43.3	42.6	3
16:00 - 17:00	51.0	66.0	47.3	54.4	51.3	49.4	48.0	46.7	40.6	40.3	39.5	3
17:00 - 18:00	52.0	72.7	48.1	55.4	51.8	49.9	48.9	47.4	42.3	42.1	41.4	3

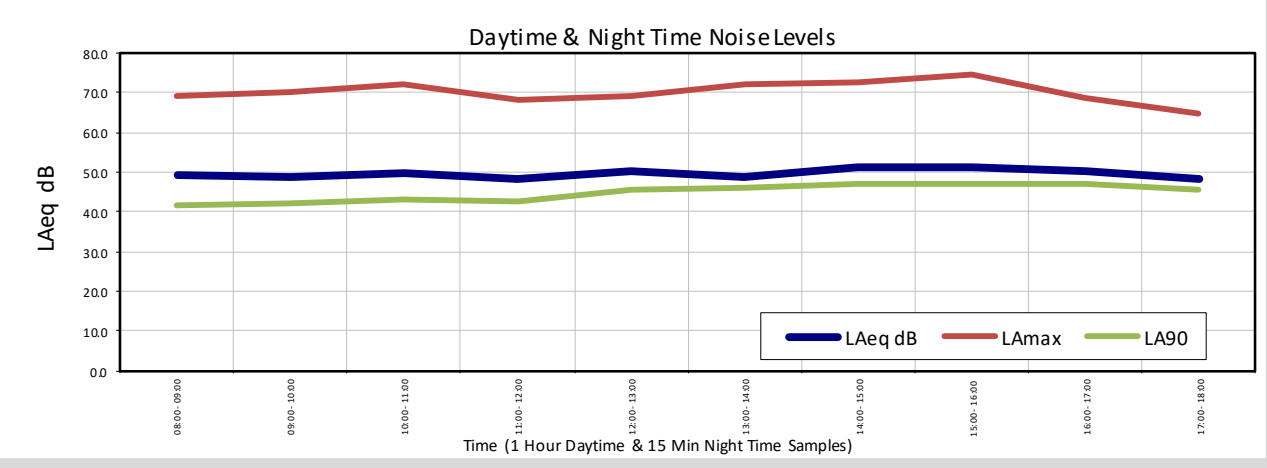


13.3 7th September 2025

FIGURE 3				Octave Band Centre Frequency (Hz)							
Date / Time	LAeq	LAmax	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16
DAYTIME 08:00 - 18:00 LAeq 10 HOUR & Corresponding LAmax 10	49.8	74.5	47.0	53.6	52.1	48.9	47.6	44.6	39.1	39.3	37.9	3

DAYTIME NOISE LEVELS 08:00 - 18:00 1 HOUR SAMPLES

Date / Time	LAeq	LAmax	LA90	Octave Band Centre Frequency (Hz) 63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16
08:00 - 09:00	49.3	69.0	41.9	51.6	56.3	49.6	47.4	41.9	37.6	39.2	36.7	3
09:00 - 10:00	48.6	70.1	42.0	53.0	51.0	48.8	48.6	41.6	34.1	35.0	34.2	3
10:00 - 11:00	50.0	72.3	43.1	54.7	52.9	50.4	47.5	43.3	35.4	41.6	42.1	3
11:00 - 12:00	48.4	68.1	42.6	54.4	51.2	48.7	46.9	44.1	36.6	31.9	31.5	3
12:00 - 13:00	50.4	69.3	45.4	54.8	52.5	49.6	49.8	44.3	37.9	37.0	37.4	3
13:00 - 14:00	49.0	72.4	46.1	53.8	51.1	48.8	45.6	44.3	38.8	38.6	37.1	3
14:00 - 15:00	51.1	72.6	47.3	52.6	48.8	47.2	48.1	46.7	41.9	40.5	39.2	3
15:00 - 16:00	51.2	74.5	47.1	53.5	50.4	47.9	47.7	46.0	41.7	43.4	38.8	3
16:00 - 17:00	50.4	68.9	47.1	54.3	50.9	48.8	46.6	46.2	41.4	39.9	38.4	3
17:00 - 18:00	48.3	64.7	45.5	52.6	51.3	48.2	45.3	44.4	38.0	35.1	34.3	3

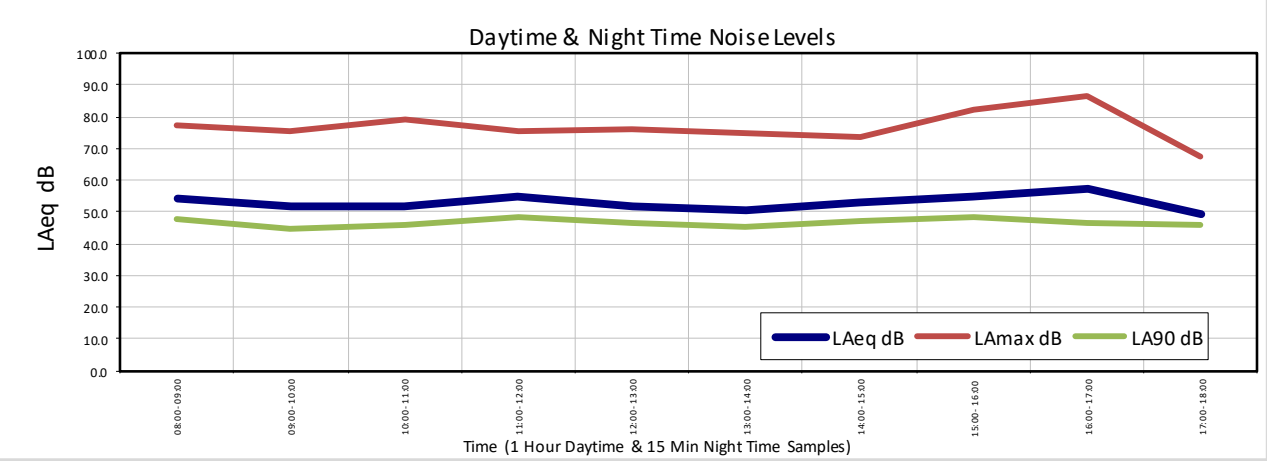


13.4 8th September 2025

FIGURE 4				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmax	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16
DAYTIME 08:00 - 18:00 LAeq 10 HOUR & Corresponding LAmax 10	53.4	86.4	48.0	54.7	51.4	49.2	48.3	49.9	46.5	41.1	35.5	3

DAYTIME NOISE LEVELS 08:00 - 18:00 1 HOUR SAMPLES

Date / Time	LAeq	LAmax	LA90	Octave Band Centre Frequency (Hz) 63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16
08:00 - 09:00	54.2	77.2	47.5	53.9	50.9	49.7	50.5	50.6	46.5	41.7	37.3	3
09:00 - 10:00	52.0	75.4	44.4	54.3	52.0	49.0	47.3	48.3	44.7	38.1	37.6	3
10:00 - 11:00	51.5	78.9	46.1	53.3	49.8	48.7	45.8	47.9	44.6	39.0	33.5	3
11:00 - 12:00	55.1	75.5	48.1	57.2	54.6	50.9	49.0	51.8	48.1	42.5	36.1	3
12:00 - 13:00	51.5	76.1	46.3	54.1	51.3	48.8	47.0	48.1	43.8	38.9	32.7	3
13:00 - 14:00	50.4	74.9	45.1	54.6	50.3	48.6	46.3	47.3	42.0	36.2	31.4	3
14:00 - 15:00	52.8	73.5	47.1	54.6	50.3	48.6	47.7	49.8	45.0	39.2	35.1	3
15:00 - 16:00	54.6	82.5	48.5	54.3	50.2	49.4	50.5	51.2	46.9	42.5	36.4	3
16:00 - 17:00	57.1	86.4	46.7	54.3	51.5	48.6	48.8	53.3	51.7	46.1	36.7	3
17:00 - 18:00	49.2	67.5	46.2	54.7	51.1	49.4	46.4	45.5	38.5	34.7	33.4	3



14 APPENDIX C - BS 4142:2019+A1:2019 INFORMATION

In accordance with BS 4142:2014:A1:2019, section 12, the following information is provided.

14.1 Professional Competence

Acoustic Consultant	Mr Brian Scrivener MIOA
Qualifications	Member of the Institute of Acoustics (MIOA)
Date Certified	June 2003
Time Operating as an active Noise Consultant	Permanently Since June 2003
Professional Position	Owner of Sound Advice Acoustics Ltd & Sound Advice Engineering Managing Director & Share Holder
Professional Status	Noise Consultant
Professional Statement	
I have been active within the field of noise consultancy and noise control engineering since I joined the company in April 1997. Working my way through the company and gaining experience in this specialist field, I qualified as a noise consultant in June 2003 when I passed my Diploma in Noise Control & Engineering from Epsom College under the tutor of Dr Latha Vesudevan. Subsequently I was awarded the status of 'Member of the Institute of Acoustics (MIOA)'. Since then I have taken over the company and continued to work and develop my professional competence within the field of acoustic consultancy, engineering and noise control.	

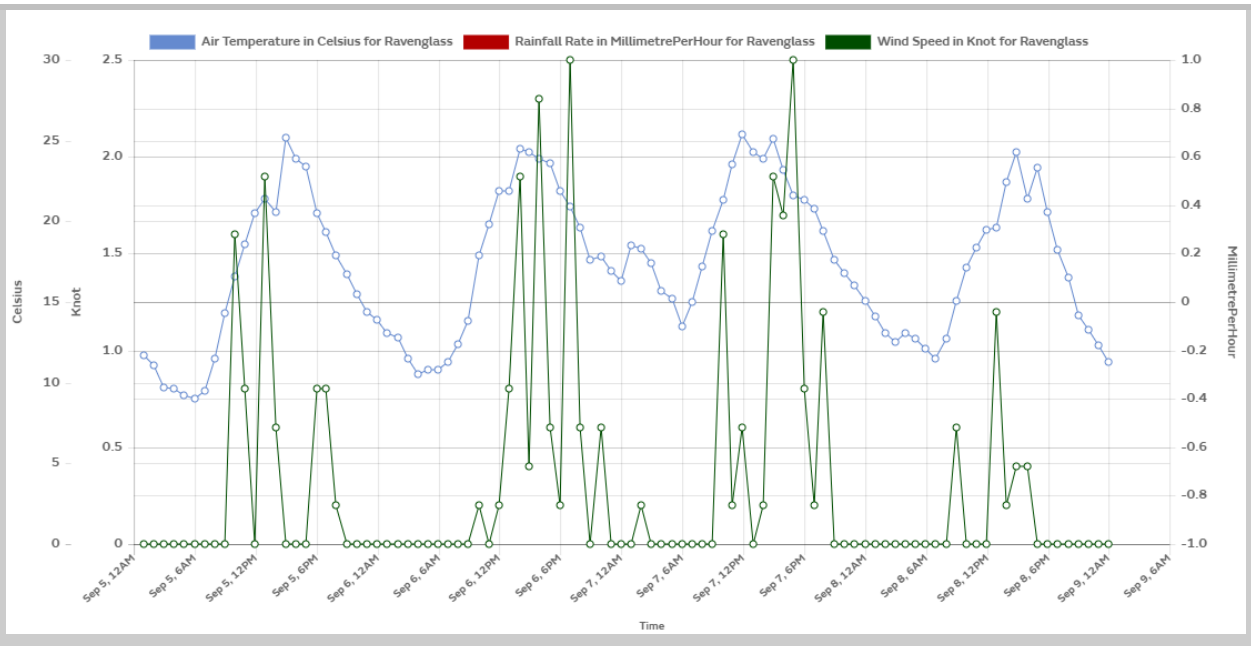
14.2 Site Status

Site Attended By	Mr Brian Scrivener MIOA
Baseline Measurements Conducted by	Mr Brian Scrivener MIOA
Site Source Measurements Conducted By	Mr Brian Scrivener MIOA

14.3 Measurement Information – Location 1

Details & Justification	Measurement position 1 was located on the site boundary, representative of the Nearest Nosie Sensitive Premises
Height from Ground	1.5m
Reflective Surfaces	None (Free Field)
Distance to NSP	23m
Distance to Source	15m
Topographical Change (m)	None
Ground between Source and Receiver	Tarmac and Grass
Windshield Information	Norsonic Outdoor Microphone Protection Kit Model No: 1212
Distance from Proposed Source to Receiver	34m
NSP* - Noise Sensitive Premises	

15 APPENDIX D - Weather Data



5th – 8th September 2025