



REPORT REFERENCE:

SA – 8025

ENVIRONMENTAL NOISE IMPACT ASSESSMENT

British Standard 8233: 2014

British Standard 4142: 2014 +A1:2019

CLIENT:

AC English Developments

SITE:

Unit 9

South Point

Ensign Way

Hamble Le Rice

SO31 4RF

SURVEY DATES:

4th – 9th April 2025

Report By	
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1 EXECUTIVE SUMMARY

1.1 Instruction

Sound Advice Acoustics Ltd have been instructed by AC English Developments to undertake a background noise survey to British Standard 8233: 2014 to determine the impact of existing noise sources on the proposed accommodation scheme at Unit 9, South Point, Ensign Way, Hamble Le Rice, SO31 4RF where a proposal has been made for the redevelopment of an office space to 4 residential flats.

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 residential dwellings. 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.
- Assess the existing plant from the neighbouring unit.
- Mitigation Measures if Required

1.3 Summary of Results

1.3.1 Background Noise Levels

A 120-hour background noise survey was undertaken from the 4th – 9th April 2025 at two positions at the site in order to establish the underlying background noise levels. Recorded levels as follows.

Assessment Position	Date Start	Date Finish	Daytime LAeq	Night Time LAeq
Position 1	04/04/2025	09/04/2025	62.8	58.3
Position 2	04/04/2025	09/04/2025	54.5	51.6

Assessment Position	Date Start	Date Finish	Daytime LA90	Night Time LA90
Position 1	04/04/2025	09/04/2025	45.0	44.0
Position 2	04/04/2025	09/04/2025	49.0	49.0

The data recorded has been further extrapolated to evaluate the modal 1 minute data to assess the morning and evening shift change at CooperVision UK between the hours of 06:30 – 07:30 and 18:30 – 19:30 while the shift changes occurs.

	4 th April 2025	5 th April 2025	6 th April 2025	7 th April 2025	8 th April 2025
06:30 – 07:30	65.0	62.0	62.0	65.0	65.0
18:30 – 19:30	61.0	63.0	60.0	62.0	61.0

1.4 Potential Façade Noise Levels

1.4.1 Daytime (07:00-23:00)

Time Period	Highest Potential Façade Noise Level	Noise Risk Category 2 - Medium
Average Daytime (07:00-23:00)	L _{Aeq} , 16 HOUR 63.0 dB	63 - 70 dB

1.4.2 Night Time (23:00-07:00)

Time Period	Highest Potential Façade Noise Level	Noise Risk Category 2 - Medium
Average Night Time (23:00-07:00)	L _{Aeq} , 16 HOUR 58.0 dB	55 - 60 dB
	Maximum (10 Times) – L _{Amax} 79.0 dB	>80 dB (10 Times in 8 Hours)

1.5 Risk Assessment

1.5.1 Daytime (07:00-23:00) – Position 1

Risk Assessment Category	Risk Assessment
2 - Medium	As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development.

1.5.2 Night Time (23:00-07:00) – Position 1

Risk Assessment Category	Risk Assessment
2 - Medium	As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development.

The above table demonstrates this site is located within Noise Risk Category 2 which suggests a medium level of risk for daytime and night time levels. Therefore, further mitigation levels will be required at Stage 2.

1.6 Glazing & Ventilation Specification

The development should be designed with a 4mm glass / 16mm air gap / 4mm glass double glazed windows and MVHR or similarly approved to all rooms on the North Western façade and an 8mm glass / 16mm air gap / 6mm glass double glazed windows and MVHR or similarly approved to all rooms on the South Eastern and South Western façade to ensure the internal noise levels are acceptable in terms of the assessment to British Standard 8233: 2014.

1.7 WHO Guidelines for Community Noise

The development does not propose external living areas and therefore an assessment to the World Health Organisation's 'Guidelines for Community Noise' has not been carried out.

1.8 Existing Plant

The following plant is located externally, generally as detailed on the drawing within this report. The unit has the following sound pressure data measured by Sound Advice Acoustics during an initial site visit.

Plant	Octave Band Centre Frequency (Hz) Sound Power level								Lp dB(A)
	63	125	250	500	1.0k	2.0k	4.0k	8.0k	
External 24-Hour Plant	75.0	75.0	69.5	63.1	57.8	53.6	49.3	43.0	65.7 @1m

1.9 BS 4142+A1:2019 External Plant Assessment

1.9.1 Calculated Façade Levels – Proposed Layout

1.9.1.1 Daytime (07:00 – 23:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1\text{ hour}}$	51 dB	7	Calculated using ISO 9613:1996 ^[3] .
Tonality	+6 dB	8.1	Tonality Characteristic
Rating Level	57 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1\text{ hour}}$	45 dB	8.1	Modal Background Noise Level
Assessment Level	+12 dB	11	The background level is subtracted from the rating level.
Assessment	+12 dB		
Conclusion	The assessment level is 'Significant Adverse Impact'		

1.9.1.2 Night time (23:00 – 07:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,15\text{ MINUTES}}$	51 dB	7	Calculated using ISO 9613:1996 ^[3] .
Tonality	+6 dB	8.1	Tonality Characteristic
Rating Level	57 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,15\text{ MINUTES}}$	44 dB	8.1	Modal Background Noise Level
Assessment Level	+13 dB	11	The background level is subtracted from the rating level.
Assessment	+13 dB		
Conclusion	The assessment level is 'Significant Adverse Impact'		

1.9.2 Calculated Façade Levels – Option 1 - Revised Layout

1.9.2.1 Daytime (07:00 – 23:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1 \text{ hour}}$	26 dB	7	Calculated using ISO 9613:1996 ^[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	28 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	45 dB	8.1	Modal Background Noise Level
Assessment Level	-17 dB	11	The background level is subtracted from the rating level.
Assessment	-17 dB		
Conclusion	The assessment level is 'Low Impact'		

1.9.2.2 Night time (23:00 – 07:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,15 \text{ MINUTES}}$	26 dB	7	Calculated using ISO 9613:1996 ^[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	28 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,15 \text{ MINUTES}}$	44 dB	8.1	Modal Background Noise Level
Assessment Level	-16 dB	11	The background level is subtracted from the rating level.
Assessment	-16 dB		
Conclusion	The assessment level is 'Low Impact'		

1.9.3 Calculated Façade Levels – Option 2 or 3 – Remedial Works to Plant

1.9.3.1 Daytime (07:00 – 23:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1 \text{ hour}}$	38 dB	7	Calculated using ISO 9613:1996 ^[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	40 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	45 dB	8.1	Modal Background Noise Level
Assessment Level	-5 dB	11	The background level is subtracted from the rating level.
Assessment	-5 dB		
Conclusion	The assessment level is 'Low Impact'		

1.9.3.2 Night time (23:00 – 07:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,15 \text{ MINUTES}}$	38 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	40 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,15 \text{ MINUTES}}$	44 dB	8.1	Modal Background Noise Level
Assessment Level	-4 dB	11	The background level is subtracted from the rating level.
Assessment	-4 dB		
Conclusion	The assessment level is 'Low Impact'		

1.9.4 Assessment Conclusion

It can be seen from the above assessments that the existing plant has returned an assessment conclusion of Significant Adverse Impact. Therefore, further mitigation measures are required and have recommended within this report.

1.10 Conclusion

Levels have been recorded and assessments made in accordance with the relevant standards. Internal criteria's have been set and calculations made in order to determine the minimum construction details required in order to meet the desired level within the proposed flats and satisfy the local council's requirements.

The operation of any plant has been assessed to establish if the development will have a demonstrable adverse effect in terms of noise that outweigh the benefits of the development. Measurements have been undertaken in accordance with British Standard 4142: 2014 +A1:2019 and ISO 1996 – Part 2: 2017. This report has established the existing background noise levels at the closest residential façade to the site and the assessment of the impact of the site operation on nearby residential properties. The resulting emissions from the site running on a worst-case scenario show conflict with 'Significant Adverse Effect' criteria and give a strong indication that complaint and impact on the local amenity is unlikely, provided one of the proposed options detailed within this report is adopted.

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 Impact Acoustics Ltd that the proposed development can demonstrate compliance with the National Planning Policy Framework 2024, NPPF & NPSE and that, with regards to sound, planning permission can be granted.

2 INTRODUCTION

Sound Advice Acoustics Ltd have been instructed by AC English Developments to undertake a background noise survey to British Standard 8233: 2014 to determine the impact of existing noise sources on the proposed accommodation scheme at Unit 9, South Point, Ensign Way, Hamble Le Rice, SO31 4RF where a proposal has been made for the redevelopment of an office space to 4 residential flats.

Ambient noise levels were measured between the 4th – 9th April 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.

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 assessments made in-line with PROPG: Planning and Noise.

2.1 Planning Practice Guidance and Noise

March 2014 saw the publication of the Planning Practice Guidance for Noise (PPG-Noise) and this was subsequently updated in December 2014. The Planning Practice Guidance and Noise sets out details of how potential noise impacts should be evaluated.

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

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

In line with the Explanatory Note of the Noise Policy Statement for England, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase wherever applicable) is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation. As noise is a complex technical issue, it may be appropriate to seek experienced specialist assistance when applying this policy.'

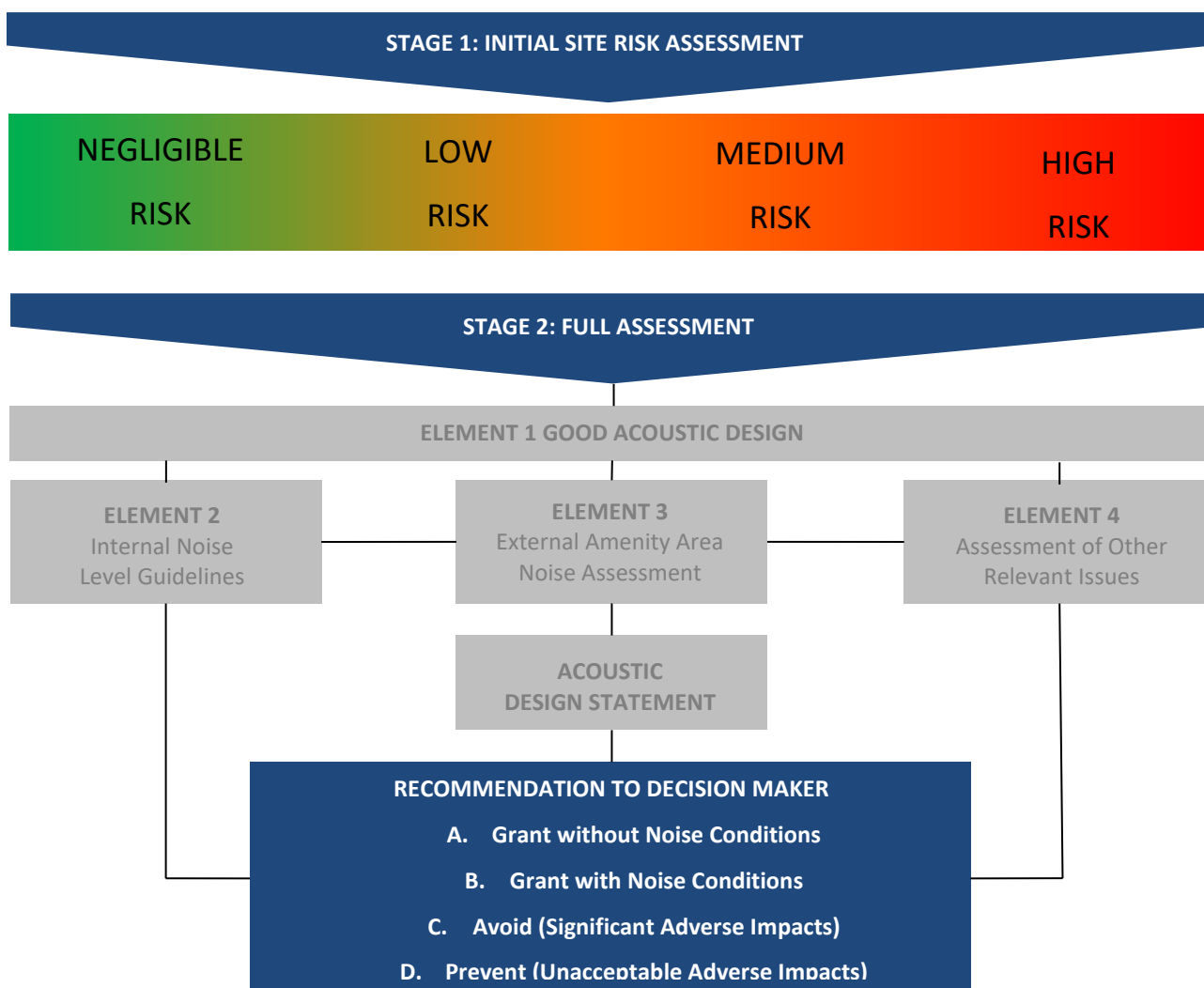
In accordance with Stage 2: Full Assessment, Other Noise Sources, detailed calculations and assessments should be carried out pertaining to these as PPG Noise does not provide advice and guidance when taking these elements into consideration.

2.1.1 Professional Practice Guidance on Planning & Noise.

The Professional Practice Guidance (PRoPG) on Planning and Noise for New Residential Development was published in May 2017 by the Association of Noise Consultants (ANC), Institute of Acoustics (IOA) and Chartered Institute of Environmental Health (CIEH). This document was developed in order to offer professional guidance on recommended strategies to the management of noise for use in the associated planning applications for specific sites. This, furthermore, provides a numerical acoustic standard in accordance with the Government’s planning and noise policies.

This document has been developed to ensure the developer adopts a good acoustic design process to ensure protection for future residents from the potential harmful effects from noise. The PRoPG denotes that it *‘does not constitute an official government code of practice and neither replaces nor provides an authoritative interpretation of the law or government policy on which users should take their own advice as appropriate’*.

The PRoPG adopts a twin-stage approach, firstly providing an ‘Initial Noise Risk Assessment’ of the proposed development site before undertaking a detailed approach of a noise impact assessment. The results from the initial noise risk assessment are an indication of the general acoustic environment of the proposed development and demonstrate how detailed the noise impact assessment will need to be in order to mitigate any acoustic issues.



2.2 British Standard 8233: 2014

Calculations are to be made in accordance with BS 8233: 2014 Sound Insulation and Noise Reduction for Buildings Code of Practice.

BS 8233: 2014 set the following parameters as target levels that should be designed to within rooms such as Living Rooms and Bedrooms.

Indoor ambient noise levels in spaces when they are unoccupied and privacy is also important		
Objective	Typical situations	Design Range $L_{Aeq,t}$ dB
Typical noise levels for acoustic privacy in shared spaces	Living room	35 – 40
NOTE: See Noise control in building services [28] and BS EN ISO 3382.		

Indoor ambient noise levels for dwellings			
Activity	Location	07:00 – 23:00	23:00 – 07:00
Resting	Living Room	35 dB L_{Aeq} 16 HOUR	--
Dining	Dining Room / Area	40 dB L_{Aeq} 16 HOUR	--
Sleeping (daytime resting)	Bedroom	35 dB L_{Aeq} 16 HOUR	30 dB L_{Aeq} 8 HOUR

Calculations and assessments are therefore to be carried out in order to satisfy the above requirements of BS 8233: 2014.

2.3 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 and make suitable recommendations 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, once remedial works are completed.

2.4 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.

2.4.1 “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:

2.4.2 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.

2.4.3 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.

2.4.4 SOAEL – Significant Observed Adverse Effect Level

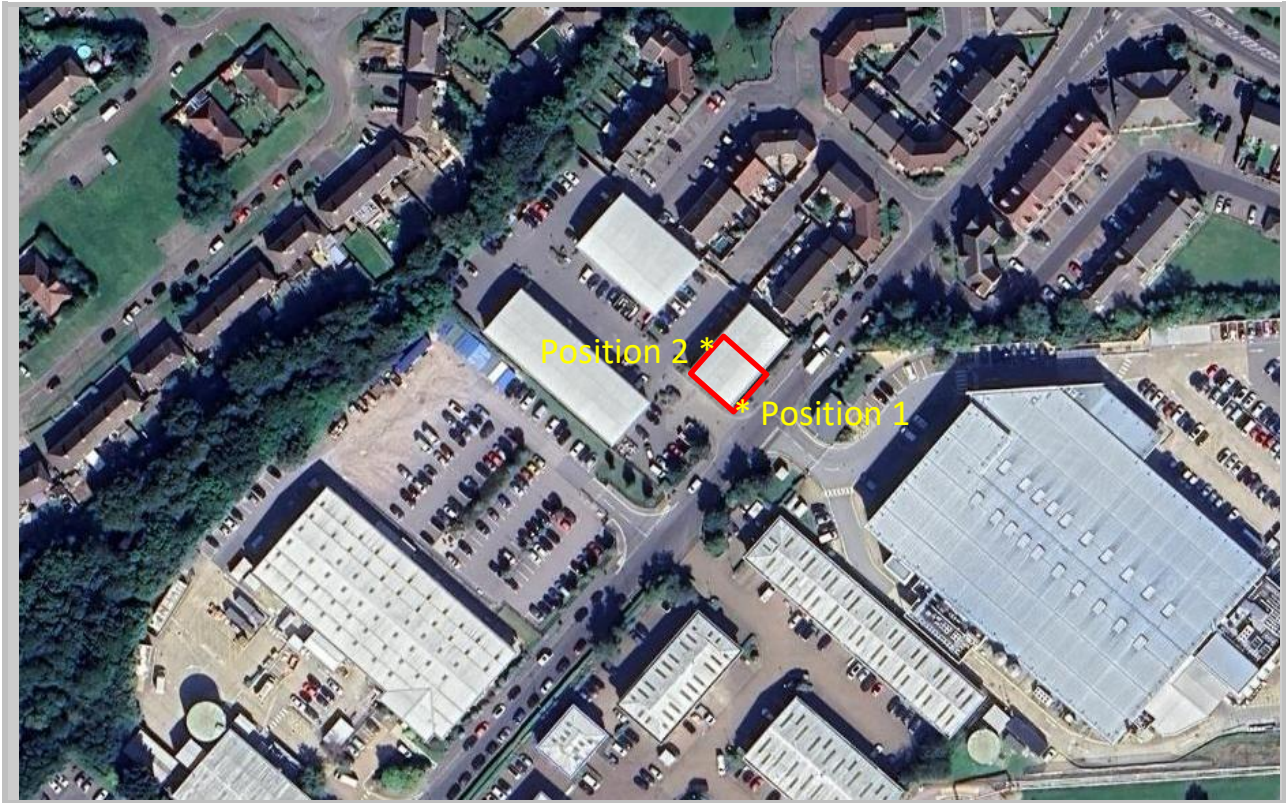
This is the level above which significant adverse effects on health and quality of life occur.

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.

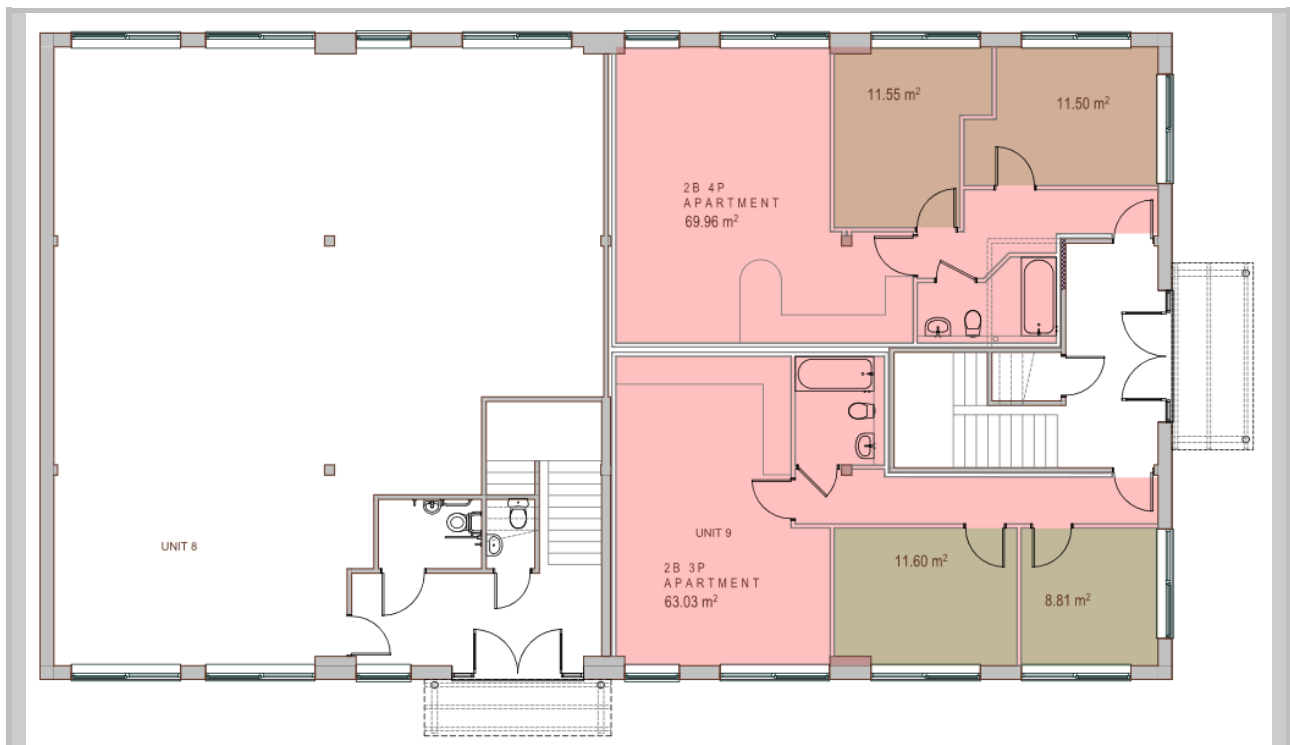
3 SITE LOCATION

3.1 Proposed Development

The proposed development is shown below.



3.2 Proposed Ground Floor Layout



4 PROCEDURE

External noise levels were recorded over a typical period and analysis date extrapolated between 07:00 hrs 4th April and 07:00 hrs on 9th April 2025 at 2 positions as detailed within this report.

Position 1 was located at the South Eastern boundary of the site in order to capture the noise levels associated with the Main Road. Position 2 was located at the North Western façade to capture the background levels on the site. Sample measurements were recorded over continuous 1 minute and 15 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.

<u>Daytime 07:00 – 23:00</u>		<u>Night Time 23:00 – 07:00</u>	
LAeq 1 HOUR dB	LA10 1 HOUR dB	LAeq 15 MINUTES dB	LA10 15 MINUTES dB
LAMAX 1 HOUR dB	LA50 1 HOUR dB	LAMAX 15 MINUTES dB	LA50 15 MINUTES dB
LAMIN 1 HOUR dB	LA90 1 HOUR dB	LAMIN 15 MINUTES dB	LA90 15 MINUTES 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 LAeq 16 HOUR dB levels for daytime and LAeq 8 HOUR dB levels for night time. These are detailed within this report. All data averaged throughout the day has been done so on a logarithmic basis to give accurate LAeq 16 Hour dB daytime and LAeq 8 Hour dB night time 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 $2 \times 10^{-5} \text{ Nm}^{-2}$ 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.

5.1 140 NOISE METER s/n 1402941 Environmental Testing - Position 1

Description	Make	Type	Serial No.	Calibration Intervals	Cert No.	Last Calibrated	Next Due Calibration
Integrated Sound Level Meter	Norsonic	140	1402941	2 YEARS	48450	30.07.2024	30.07.2026
12.5mm Microphone (with windshield)	GRAS	40AF	179711	2 YEARS	48449	30.07.2024	30.07.2026
Microphone Pre – Amplifier	Norsonic	1209	30479	2 YEARS	48450	30.07.2024	30.07.2026

5.2 118 NOISE METER s/n 31471 Environmental Testing - Position 2

Description	Make	Type	Serial No.	Calibration Intervals	Cert No.	Last Calibrated	Next Due Calibration
Integrated Sound Level Meter	Norsonic	118	31471	2 YEARS	TCRT23-1042	15.01.2024	15.01.2026
12.5mm Microphone (with windshield)	GRAS	40AF	114650	2 YEARS		15.01.2024	15.01.2026
Microphone Pre – Amplifier	Norsonic	1206	30327	2 YEARS		15.01.2024	15.01.2026

Full calibration certificates are available upon request.

6 RESULTS

6.1 Downloaded results, and averages.

6.1.1 4th – 5th April 2025 - Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmx	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmx 16 HOUR	62.1	90.1	48.0	65.4	61.7	58.6	55.6	59.7	53.8	45.7	36.5	30.9	62.1
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmx 8 HOUR	56.2	82.1	44.0	60.4	56.4	52.2	49.0	53.9	48.5	39.0	29.2	27.0	56.2

6.1.2 5th – 6th April 2025 – Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmx	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmx 16 HOUR	58.5	96.0	46.0	62.0	62.4	57.4	52.8	55.5	49.3	42.2	32.9	27.7	58.5
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmx 8 HOUR	55.1	80.7	44.0	60.5	55.3	51.7	48.0	52.2	47.9	39.2	30.3	27.0	55.1

6.1.3 6th – 7th April 2025 - Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmx	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmx 16 HOUR	58.2	96.9	45.0	62.4	59.7	57.1	52.4	55.4	49.9	41.9	34.6	25.7	58.2
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmx 8 HOUR	57.2	81.9	44.0	61.9	58.7	53.2	50.0	54.8	49.6	40.3	29.8	30.9	57.2

6.1.4 7th – 8th April 2025 - Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmx	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmx 16 HOUR	62.8	88.7	50.0	66.1	62.8	59.8	56.2	60.3	54.7	47.6	39.7	32.9	62.8
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmx 8 HOUR	58.3	84.5	44.0	62.0	57.1	53.6	50.8	56.0	50.9	41.6	33.6	30.1	58.3

6.1.5 8th – 9th April 2025 - Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmx	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmx 16 HOUR	62.4	87.7	51.0	65.6	61.8	58.7	55.7	60.1	54.2	45.7	38.0	31.2	62.4
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmx 8 HOUR	57.8	85.0	44.0	61.6	56.5	53.4	50.7	55.6	50.0	40.8	31.4	28.0	57.8

6.1.6 4th – 5th April 2025 - Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmaz	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmaz 16 HOUR	52.5	75.8	50.0	65.8	59.6	54.1	48.5	46.5	43.3	40.6	32.5	15.1	52.5
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmaz 8 HOUR	50.7	79.1	49.0	67.1	59.9	53.9	45.7	42.9	40.6	38.3	30.5	18.6	50.7

6.1.7 5th – 6th April 2025 2025 – Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmaz	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmaz 16 HOUR	50.7	70.7	49.0	66.7	58.9	53.6	46.0	44.3	40.7	36.6	28.7	15.1	50.7
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmaz 8 HOUR	50.4	67.4	49.0	66.5	59.1	53.4	45.4	42.2	41.2	38.8	30.4	12.5	50.4

6.1.8 6th – 7th April 2025 - Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmaz	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmaz 16 HOUR	50.2	73.2	49.0	66.6	58.7	53.3	45.8	43.2	40.1	35.8	28.2	12.4	50.2
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmaz 8 HOUR	50.8	81.4	49.0	66.2	58.6	53.5	46.1	43.5	41.8	39.2	30.2	14.2	50.8

6.1.9 7th – 8th April 2025 - Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmaz	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmaz 16 HOUR	54.5	91.2	49.0	65.9	59.3	54.2	49.1	47.7	47.1	46.1	39.4	24.0	54.5
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmaz 8 HOUR	51.1	70.5	50.0	66.2	59.1	53.7	46.6	43.6	41.9	39.0	30.7	14.5	51.1

6.1.10 8th – 9th April 2025 - Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmaz	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmaz 16 HOUR	52.5	75.1	49.0	65.6	59.0	53.0	48.5	46.2	44.2	41.6	34.0	16.7	52.5
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmaz 8 HOUR	51.6	84.8	49.0	66.3	58.1	52.4	46.8	44.6	43.1	42.2	34.6	15.4	51.6

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

Inputted Noise Levels - Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmaz	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmaz 16 HOUR	62.8	88.7	50.0	66.1	62.8	59.8	56.2	60.3	54.7	47.6	39.7	32.9	62.8
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmaz 8 HOUR	58.3	84.5	44.0	62.0	57.1	53.6	50.8	56.0	50.9	41.6	33.6	30.1	58.3

Inputted Noise Levels - Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)									
Date / Time	LAeq	LAmaz	LA90	31.5	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Corresponding LAmaz 16 HOUR	54.5	91.2	49.0	65.9	59.3	54.2	49.1	47.7	47.1	46.1	39.4	24.0	54.5
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmaz 8 HOUR	51.6	84.8	49.0	66.3	58.1	52.4	46.8	44.6	43.1	42.2	34.6	15.4	51.6

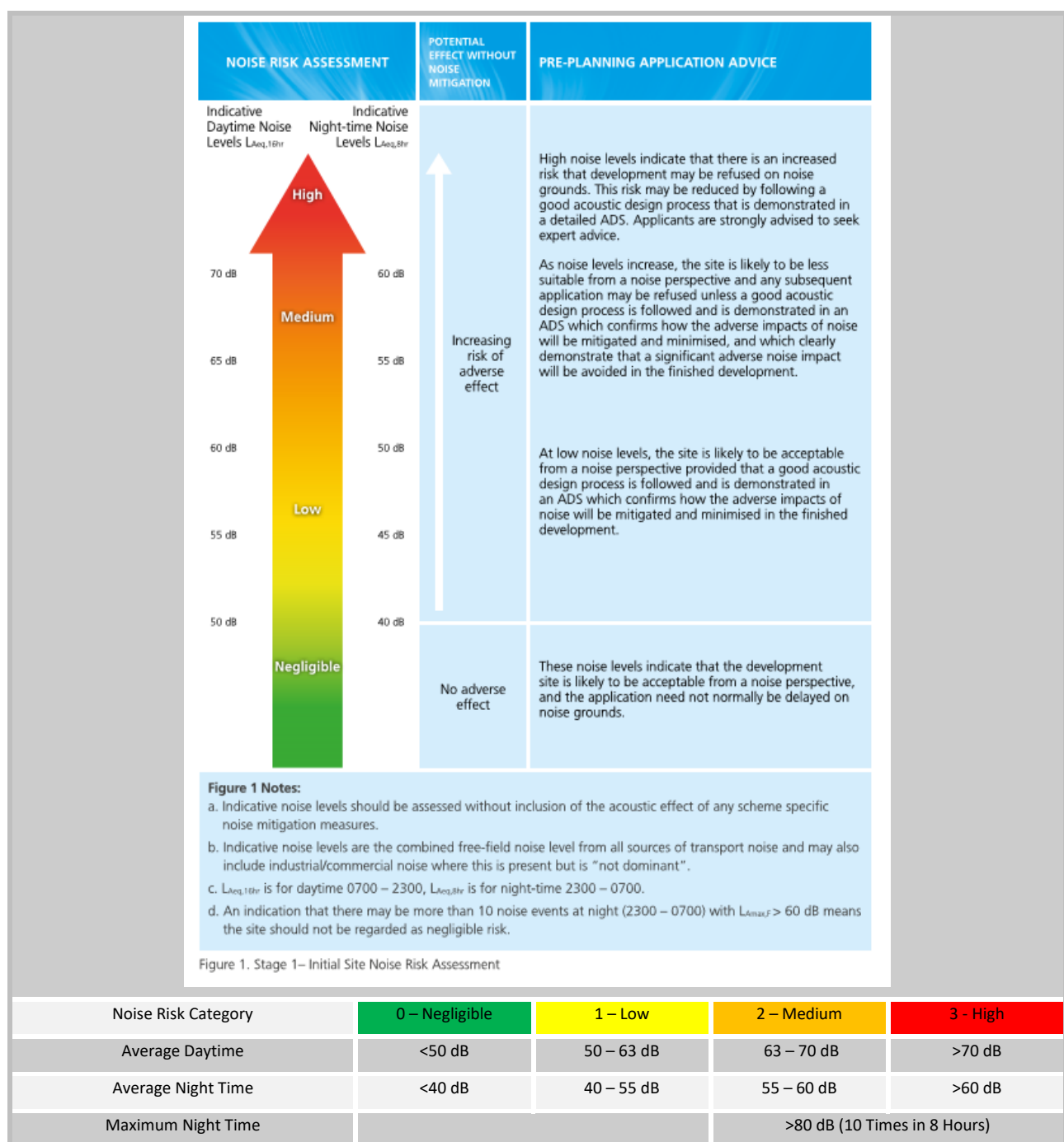
7 PROPG PLANNING & NOISE STAGE 1

7.1 Stage 1: Initial Site Noise Risk Assessment

The Stage 1, Initial Noise Risk Assessment, compares the recorded ambient noise levels obtained from the acoustic survey and correlates these against the risk scale within the PROPG Document in order to evaluate any potential adverse effects the site is currently exposed to with regards to noise.

The outcome of the Stage 1 assessment will determine the level of detail required within Stage 2 in order to demonstrate suitable mitigations can be introduced to ensure continuing compliance with the relevant standards, local planning policies and PROPG.

The following table demonstrates the Initial Risk Assessment Noise Levels as detailed within PROPG Figure.1:-



Based on the data collected from the aforementioned noise survey, the following PROPG Stage 1 assessments can be made:-

7.2 Potential Façade Noise Levels

7.2.1 Daytime (07:00-23:00)

Time Period	Highest Potential Façade Noise Level	Noise Risk Category 2 - Medium
Average Daytime (07:00-23:00)	$L_{Aeq, 16 \text{ HOUR}}$ 63.0 dB	63 - 70 dB

7.2.2 Night Time (23:00-07:00)

Time Period	Highest Potential Façade Noise Level	Noise Risk Category 2 - Medium
Average Night Time (23:00-07:00)	$L_{Aeq, 16 \text{ HOUR}}$ 58.0 dB	55 - 60 dB
	Maximum (10 Times) – L_{Amax} 79.0 dB	>80 dB (10 Times in 8 Hours)

7.3 Risk Assessment

7.3.1 Daytime (07:00-23:00) – Position 1

Risk Assessment Category	Risk Assessment
2 - Medium	As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development.

7.3.2 Night Time (23:00-07:00) – Position 1

Risk Assessment Category	Risk Assessment
2 - Medium	As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development.

The above table demonstrates this site is located within Noise Risk Category 2 which suggests a medium level of risk for daytime and night time levels. Therefore, further mitigation levels will be required at Stage 2.

8 PROPG PLANNING & NOISE STAGE 2 - ELEMENT 1 – GOOD ACOUSTIC DESIGN

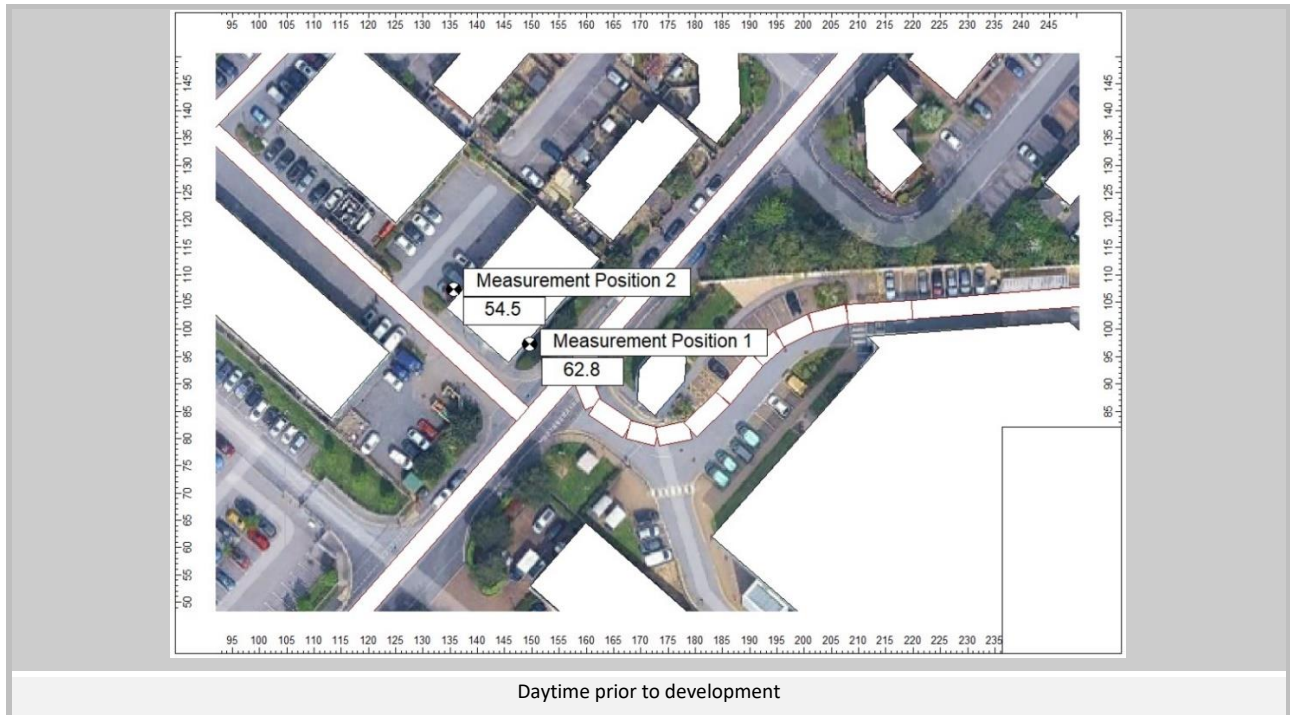
Given the size and orientation of the proposed site, it is recommended that the developer adopt, where practically possible, a good acoustic design which should include careful consideration of the positioning of the proposed properties together with thoughts being taken as to internal layouts to minimise noise sensitive rooms facing onto dominant noise sources within the local areas. Given the size of this development, every effort has already been made to minimise the acoustic impact from the surrounding areas.

9 ELEMENT 2 – INTERNAL NOISE LEVEL GUIDELINES

9.1 Discussion of Results

It can be seen from the attached graph and downloaded results that the external noise levels have followed the expected path and remained fairly constant throughout the day. The levels then gradually dropped off as the evening progressed and began to rise when morning traffic levels increased.

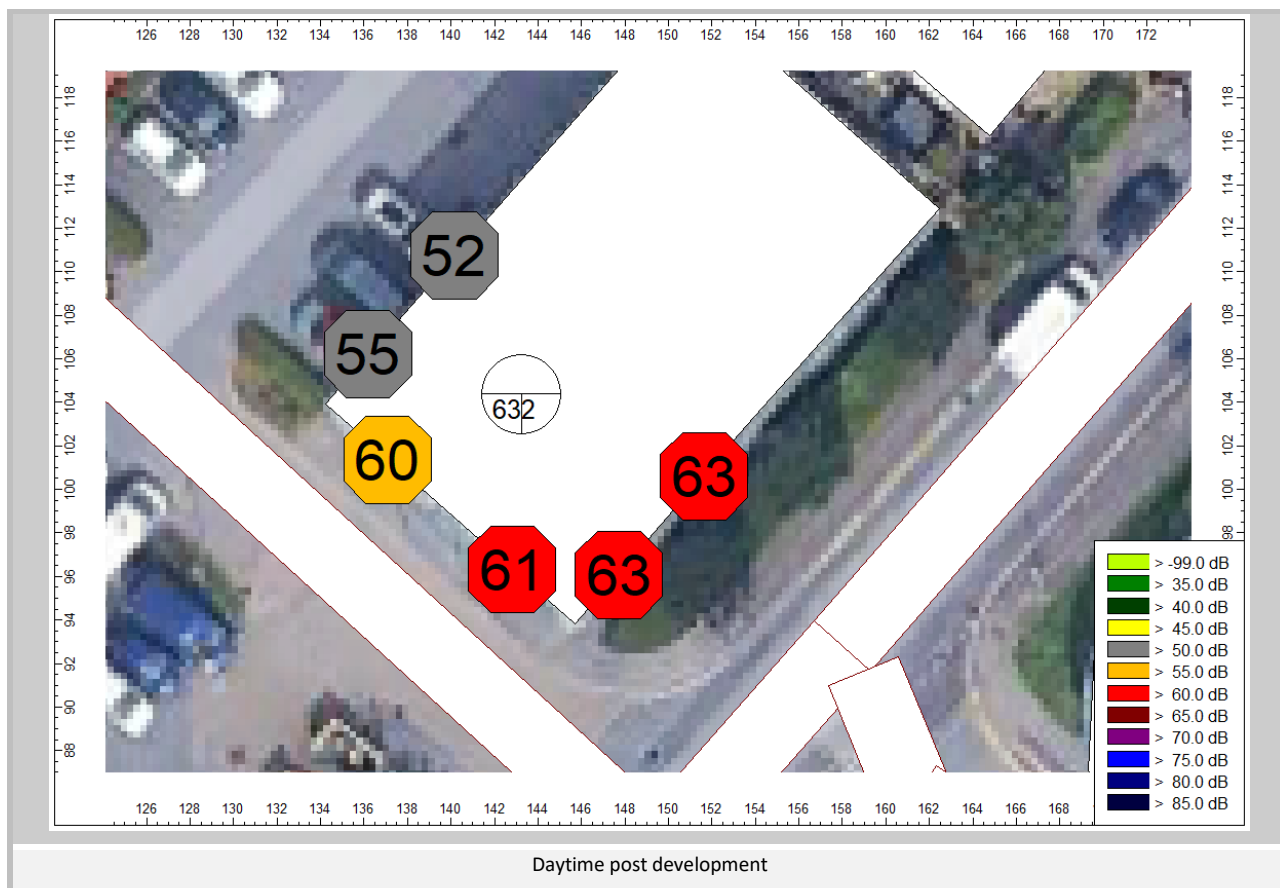
9.2 Existing Noise Levels – Daytime (07:00 – 23:00)



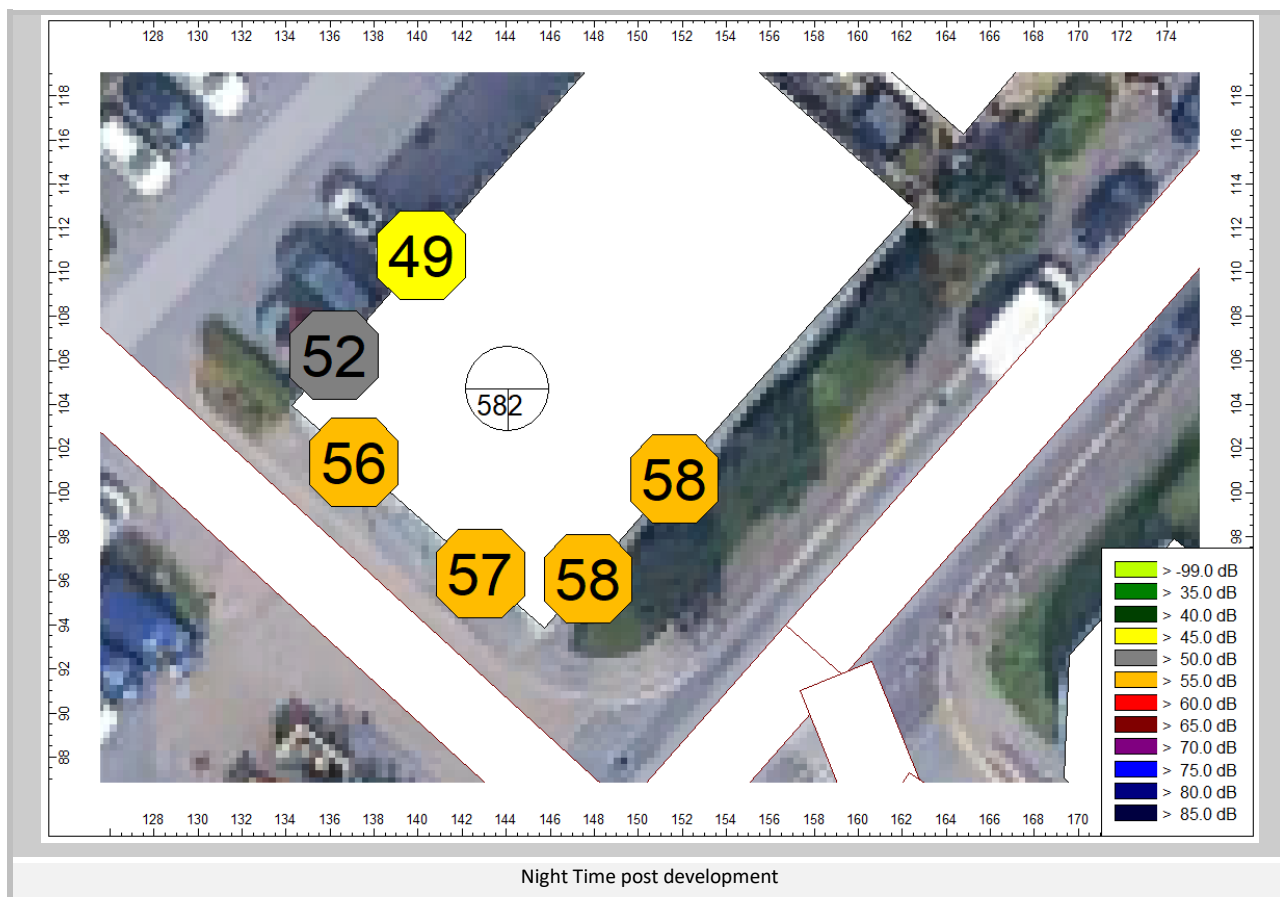
9.3 Existing Noise Levels – Night Time (23:00 – 07:00)



9.4 Proposed Noise levels – Daytime (07:00 – 23:00)



9.5 Proposed Noise levels – Night Time (23:00 – 07:00)



9.6 Recommendations

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

Therefore, in order to achieve the required noise levels of $L_{Aeq\ 16\ HOUR}$ 35 dB for habitable rooms daytime and $L_{Aeq\ 8\ HOUR}$ 30 dB for Bedroom at night within the proposed, 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.

9.7 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.

9.8 Ground Floor Lounge – Corrected to 55 dB Daytime and 52 dB Night time

Recorded Site Data (Corrected for Free Field)	Octave Band Centre Frequency (Hz)					
	125	250	500	1000	2000	4000
Daytime Leqff	53.7	48.6	47.2	46.6	45.6	38.9
Night time Leqff	51.8	46.2	44.0	42.5	41.6	34.0
Room Data	Sf	Sr	Swi	Sew	Srr	Volume
Area m²	10.6	0	5.4	5.2	0	63
Specification Summary	Site Specific Specification			Attenuation Required		
Glazing Specification	4mm / (16mm) / 4mm			Rw(C; Ctr)	29(-1,-4) dB	
Ventilation Strategy	MVHR			Dne'w	54 dB	
Wall Specification	Brick & Block Cavity Wall			Rw	54 dB	
Roof Specification	Standard Pitched Roof			Rw	57 dB	
Calculation Results						
Daytime Hours (07:00-23:00)			L _{Aeq} 16 HOUR	24.3	dB(A)	
Night Time Hours (23:00-07:00)			L _{Aeq} 8 HOUR	21.7	dB(A)	
Formula	$Leq2=Leqff+10\log[A0/S*10^{(-Dne/10)}+Swi/S*10^{(-Rwi/10)}+Sew/10*10^{(-Rew/10)}+Srr/S*10^{(-Rrr/10)}] + 10\log(S/A) + 3$					
Note	The expected precision of this calculation is ±2 dB.					

9.9 Ground Floor Bedroom – Corrected to 55 dB Daytime and 52 dB Night time

Recorded Site Data (Corrected for Free Field)	Octave Band Centre Frequency (Hz)					
	125	250	500	1000	2000	4000
Daytime Leqff	53.7	48.6	47.2	46.6	45.6	38.9
Night time Leqff	51.8	46.2	44.0	42.5	41.6	34.0
Room Data	Sf	Sr	Swi	Sew	Srr	Volume
Area m²	9	0	3.6	5.4	0	12
Specification Summary	Site Specific Specification			Attenuation Required		
Glazing Specification	4mm / (16mm) / 4mm			Rw(C; Ctr)		29(-1,-4) dB
Ventilation Strategy	MVHR			Dne'w		54 dB
Wall Specification	Brick & Block Cavity Wall			Rw		54 dB
Roof Specification	Standard Pitched Roof			Rw		57 dB
Calculation Results						
Daytime Hours (07:00-23:00)			L _{Aeq} 16 HOUR	22.6	dB(A)	
Night Time Hours (23:00-07:00)			L _{Aeq} 8 HOUR	20.0	dB(A)	
Formula	$Leq2=Leqff+10\log[A0/S*10^{(-Dne/10)}+Swi/S*10^{(-Rwi/10)}+Sew/10*10^{(-Rew/10)}+Srr/S*10^{(-Rrr/10)}]+10\log(S/A)+3$					
Note	The expected precision of this calculation is ±2 dB.					

9.10 First Floor Lounge – Corrected to 63 dB Daytime and 58 dB Night time

Recorded Site Data (Corrected for Free Field)	Octave Band Centre Frequency (Hz)					
	125	250	500	1000	2000	4000
Daytime Leqff	59.0	55.4	59.5	53.9	46.8	38.9
Night time Leqff	53.3	50.5	55.7	50.6	41.3	33.3
Room Data	Sf	Sr	Swi	Sew	Srr	Volume
Area m²	10.6	34	5.4	5.2	34	78
Specification Summary	Site Specific Specification			Attenuation Required		
Glazing Specification	8mm / (16mm) / 6mm			Rw(C; Ctr)	35(-2,-6) dB	
Ventilation Strategy	MVHR			Dne'w	54 dB	
Wall Specification	Brick & Block Cavity Wall			Rw	54 dB	
Roof Specification	Standard Pitched Roof			Rw	57 dB	
Calculation Results						
Daytime Hours (07:00-23:00)			L _{Aeq} 16 HOUR	28.5	dB(A)	
Night Time Hours (23:00-07:00)			L _{Aeq} 8 HOUR	23.7	dB(A)	
Formula	$Leq2=Leqff+10\log[A0/S*10^{(-Dne/10)}+Swi/S*10^{(-Rwi/10)}+Sew/10*10^{(-Rew/10)}+Srr/S*10^{(-Rrr/10)}]+10\log(S/A)+3$					
Note	The expected precision of this calculation is ±2 dB.					

9.11 First Floor Bedroom - Corrected to 63 dB Daytime and 58 dB Night time

Recorded Site Data (Corrected for Free Field)	Octave Band Centre Frequency (Hz)					
	125	250	500	1000	2000	4000
Daytime Leqff	59.0	55.4	59.5	53.9	46.8	38.9
Night time Leqff	53.3	50.5	55.7	50.6	41.3	33.3
Room Data	Sf	Sr	Swi	Sew	Srr	Volume
Area m²	8	11.5	3.6	4.4	11.5	26.5
Specification Summary	Site Specific Specification			Attenuation Required		
Glazing Specification	8mm / (16mm) / 6mm			Rw(C; Ctr)		35(-2,-6) dB
Ventilation Strategy	MVHR			Dne'w		54 dB
Wall Specification	Brick & Block Cavity Wall			Rw		54 dB
Roof Specification	Standard Pitched Roof			Rw		57 dB
Calculation Results						
Daytime Hours (07:00-23:00)			L _{Aeq} 16 HOUR	26.8		dB(A)
Night Time Hours (23:00-07:00)			L _{Aeq} 8 HOUR	22.0		dB(A)
Formula	$Leq2=Leqff+10\log[A0/S*10^{(-Dne/10)}+Swi/S*10^{(-Rwi/10)}+Sew/10*10^{(-Rew/10)}+Srr/S*10^{(-Rrr/10)}]+10\log(S/A)+3$					
Note	The expected precision of this calculation is ±2 dB.					

9.12 Glazing (R_{wi})

Octave Band Frequency	125	250	500	1000	2000	4000	$R_{w (C:Ctr)}$ dB
4mm glass / (16mm air gap) / 4mm glass	21.0	17.0	25.0	35.0	37.0	31.0	29 (-1,-4)
8mm glass / (16mm air gap) / 6mm glass	20.0	21.0	33.0	40.0	36.0	48.0	35 (-2,-6)

9.13 Walls (Non-Glazed Elements) (R_{ew})

Octave Band Frequency	125	250	500	1000	2000	4000	R_w dB
Minimum External Wall Attenuation	40.0	44.0	45.0	51.0	56.0	56.0	50

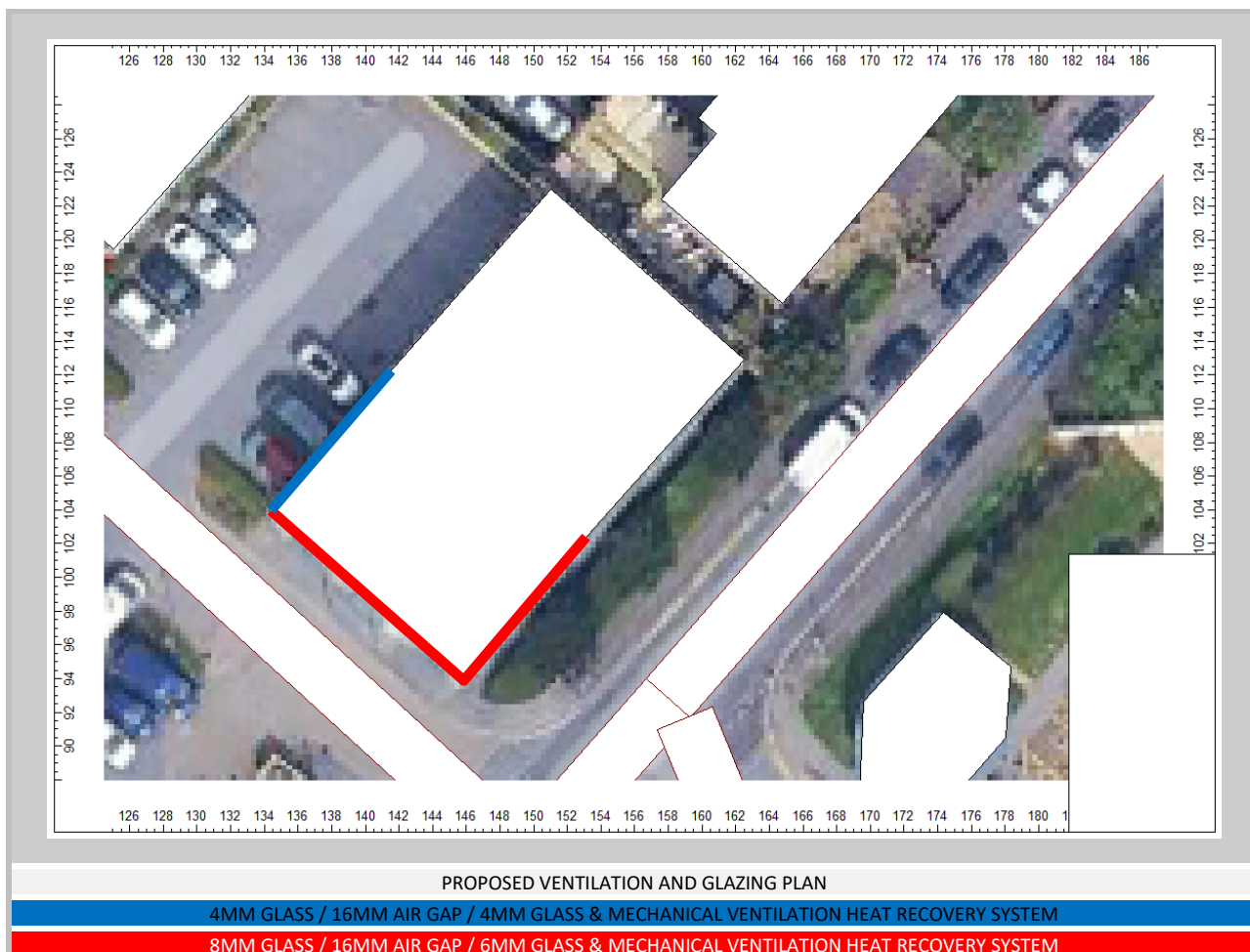
9.14 Roof (R_{rr})

Octave Band Frequency	125	250	500	1000	2000	4000	R_w dB
Minimum Value	39.0	48.0	55.0	60.0	59.0	61.0	57

NOTE:

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 following specifications should be installed for this site.

9.15 Glazing & Ventilation Assessment



The development should be designed with a 4mm glass / 16mm air gap / 4mm glass double glazed windows and MVHR or similarly approved to all rooms on the North Western façade and an 8mm glass / 16mm air gap / 6mm glass double glazed windows and MVHR or similarly approved to all rooms on the South Eastern and South Western façade to ensure the internal noise levels are acceptable in terms of the assessment to British Standard 8233: 2014.

10 L_{Amax} dB NOISE LEVEL ASSESSMENT

10.1 Criteria

10.1.1 Night Noise Guidelines Europe 2009

The Night Noise Guidelines 2009 make direct reference to the World Health Organisations Guidelines for Community Noise 1999 with recommended guideline criteria of L_{Aeq} 30 dB indoors for continuous noise. The document goes on to explain that sleep disturbance correlates best with L_{Amax} and effects have been observed at 45 dB or less. This is particularly true if the background noise level is low. Noise events exceeding 45 dB(A) should therefore be limited.

10.1.2 Professional Practice Guidance on Planning & Noise.

PROPG: Planning and Noise Appendix A 'Dealing with Noise Events' A.17 states that:-

Various studies have linked the L_{Amax} from individual noise events to behavioural awakenings. For example, one study found that the "Probability of sleep stage changes to wake/S1 from railway noise increased significantly from 6.5% at 35 dB(A) to 20.5% at 80 dB(A) $L_{Amax,F}$ whilst another study concluded that "noise disturbance of sleep may be expected to become significant once the outdoor L_{Aeq} exceeds 55 dB provided peak noise levels do not exceed 75 to 80 dB. Higher L_{Aeq} values up to 60 dB may be allowed providing the peak levels do not exceed 85 dB, and the number of such events is less than about 20 per night". Based on these studies it can be concluded that at night (2300 - 0700 hrs) a significant effect on sleep disturbance e.g. behavioural awakening, is likely to occur where the maximum sound level at the façade of a building with partially open windows is above:

85 dB $L_{Amax,F}$ (where the number of events exceeding this value is ≤ 20); or

80 dB $L_{Amax,F}$ (where the number of events exceeding this value is > 20).

Pro PG: Planning and Noise Appendix A 'Dealing with Noise Events' A.18 goes on to explain that the main body of sleep research is consistent with a careful interpretation of the viewpoint set out in the World Health Organisation Guidelines which for the ordinary population is that:

- ✓ *Impacts on sleep can be detected from relatively low level maximum noise events, however the degree of resulting harm may not be significant.*
- ✓ *'Effects' on sleep (such as EEG awakenings and sleep stage changes) occur spontaneously in the general population many times per night regardless of any impacts due to noise.*
- ✓ *The smaller the number of noise events, the louder the maximum noise level that can be tolerated without adverse effects upon sleep; subject to an upper limit.*
- ✓ *At relatively low levels e.g. around 45 dB $L_{Amax,F}$ when sufficient number of such events take place during the night the adverse effects of individual noise events are likely to be limited to sleep disturbance in the form of changes in sleep state or perhaps some EEG awakenings.*
- ✓ *It normally requires noise levels higher than 45 dB $L_{Amax,F}$ before significant adverse effects such as behavioural awakenings, difficulty getting to sleep, premature awakening or difficulty getting back to sleep generally occur and the latest field research on and aircraft noise suggest that it requires internal L_{Amax} noise levels of around 65 dB before noise induced awakenings become distinguishable from spontaneous awakenings).*

10.1.3 World Health Organisations 'Guidelines for Community Noise'.

The WHO Guideline for Community Noise suggests that levels of L_{AFmax} 45 dB should not exceed more than 10 events within any one night time period 23:00 – 07:00. Therefore, calculations and assessments are to be made against these criteria to ascertain if the proposed glazing and ventilation specification will be suitable to achieve that of the assessed 11th highest recorded L_{AFmax} dB level.

L_{AFmax} dB Noise Levels >80 dB						L_{AFmax} dB Noise Levels >85 dB					
L_{AFmax} dB	82.1	80.7	81.9	84.5	85.0	L_{AFmax} dB	82.1	80.7	81.9	84.5	85.0
Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5	Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5
	4	1	2	4	8		0	0	0	0	0

10.1.4 L_{AFmax} dB Noise Levels – Night Time 23:00 – 07:00 (1 Minute Data)

1 Minute Event No.	Recorded L_{AFmax} dB Noise Levels	Façade Corrected L_{AFmax} dB Noise Levels
1	85.0	85.0
2	82.6	82.6
3	82.4	82.4
4	81.9	81.9
5	80.8	80.8
6	80.7	80.7
7	80.6	80.6
8	80.2	80.2
9	79.2	79.2
10	79.0	79.0
11	78.9	78.9

The following table demonstrate the results and the evaluated 11th highest L_{Amax} dB level. With the proposed glazing and ventilation strategies implemented on this site, the following calculated internal levels have been evaluated accordingly:-

Item		Night Time (23:00-07:00)	Description
1	Recorded External Noise Level	58.3	Recorded Noise Level at the Monitoring Position
2	Calculated Highest Façade Level	58.0	Highest recorded façade level of the proposed development closest to the above associated monitoring position.
3	Façade Correction	-0.3	Difference between Recorded and Calculated (Item 1 and 2)
4	Calculated Façade Attenuation	36.3	Calculated façade attenuation taken from the highest recorded LAeq 8 HOUR dB night time noise level, minus the highest calculated internal noise level taken from the BS 8233 calculations.
5	L_{Amax} 45 dB Criteria	45.0	L_{Amax} 45 dB Criteria taken from WHO Guidelines. BS 8233 does not reference L_{Amax} dB noise level criteria.
6	Calculated Façade Level Outside	81.3	Addition of Items 4 and 5 to give a resultant target level for the 11 th Recorded L_{Amax}
7	11 th Recorded L_{Amax}	78.9	11 th Recorded L_{Amax}
8	L_{Amax} Criteria Achieved	YES	If Item 7 is less than 6, then the site is likely to be compliant. If not, further calculations are required

The above table demonstrates that the upgraded glazing and ventilation will result in the internal L_{Amax} 45 dB criteria being achieved.

11 ELEMENT 4 – ASSESSMENT OF OTHER RELEVANT ISSUES

11.1 The National Planning Policy Framework 2024 (NPPF)

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.

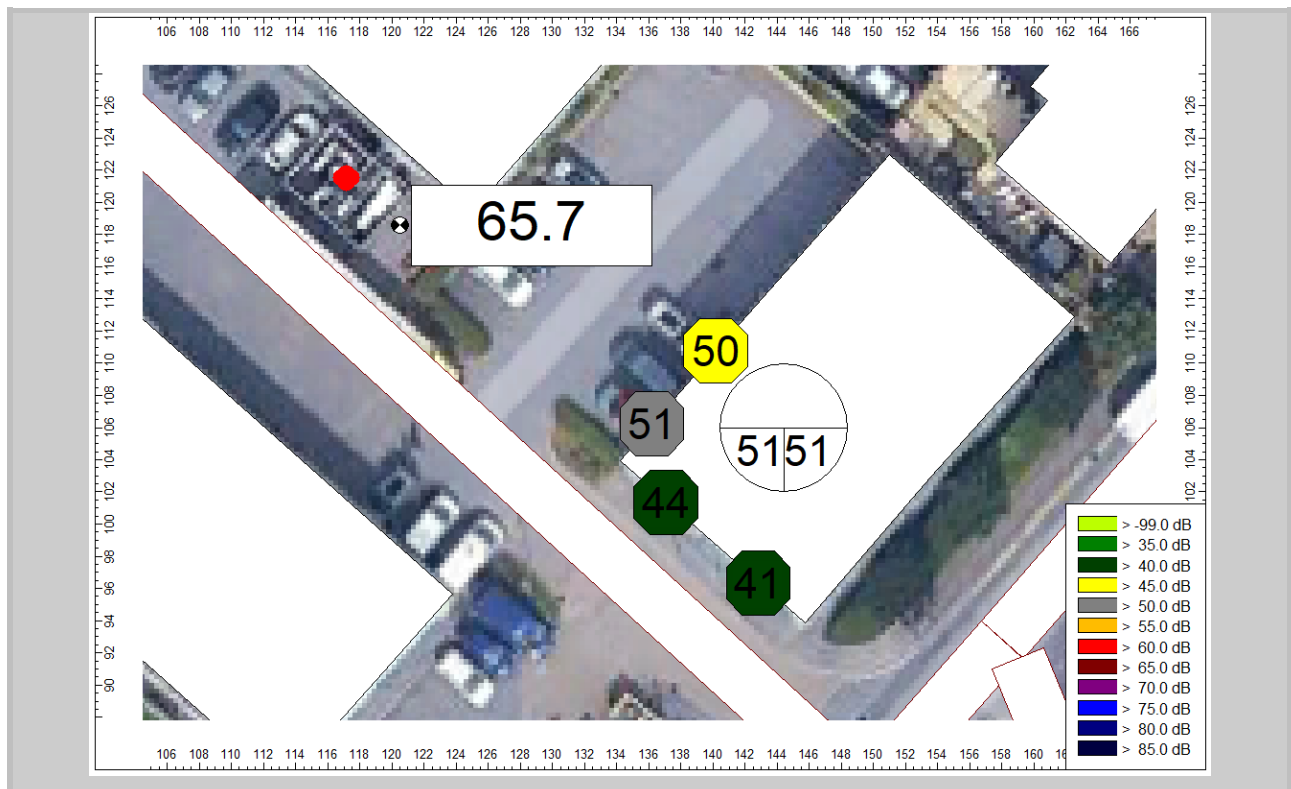
12 EXISTING PLANT – COOPERVISION UK

Commercial noise has been identified as the plant associated with CooperVision UK. The plant serves the manufacturing area and operates 24 hours a day. The unit has the following sound pressure data measured by Sound Advice Acoustics during an initial site visit.

Plant	Octave Band Centre Frequency (Hz) Sound Power level								Lp dB(A)
	63	125	250	500	1.0k	2.0k	4.0k	8.0k	
External 24-Hour Plant	75.0	75.0	69.5	63.1	57.8	53.6	49.3	43.0	65.7 @1m

The above data that was recorded at 1m from the existing plant. A point source has then been put in and the level increased until it matches the recorded noise level.

12.1 Calculated Facade Levels



12.2 Proposed Remedial Works

It can be seen from the above calculated façade levels that further remedial works are required in order to achieve the desired noise levels. There are three recommendations for achieving this.

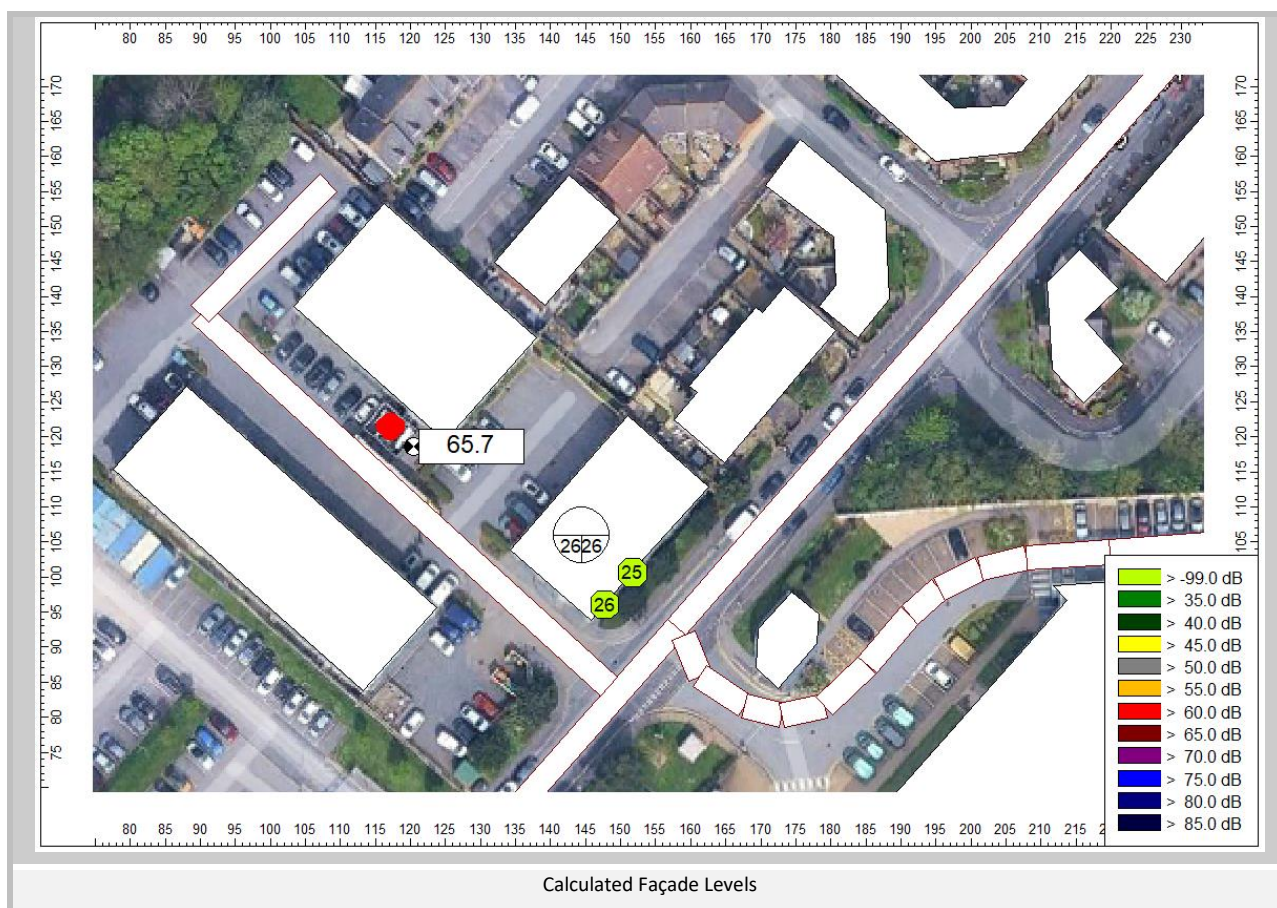
Option 1 Revise the internal layouts to better suit the acoustic environment and noise from CooperVision UK external plant and ensure non-habitable rooms are located facing and adjacent to the existing plant.

Option 2 Apply for a Grampian Planning Condition to allow further remedial works to be undertaken to this external plant to reduce noise levels down to acceptable levels and keep the proposed layout.

Option 3 Remove the planning application, contact CooperVision UK and agree to undertake the proposed remedial works and then submit a planning application with an updated noise report that demonstrates these noise levels do not have a Significant Adverse Effect on the proposed development.

12.3 Option 1 - Calculated Façade Levels (Revised Layout)

In order to achieve acceptable levels at the proposed development, the internal layout could be reviewed and non-habitable rooms such as bathrooms, stand-alone kitchens, stairwells etc be located on the façade shown below with no values, and only habitable rooms located where values are depicted.



12.4 Option 2 – Apply for a Grampian Planning Condition (Proposed Layout)

12.4.1 Outline

A Grampian planning condition is a type of planning condition commonly used in the UK to prevent development from commencing until certain off-site works (often outside the applicant's control) are carried out. These conditions are named after a legal case involving Grampian Regional Council.

12.4.2 Use of a Grampian Planning Condition

- You apply for planning permission for a new residential development.
- The site is near an existing commercial premises with external plant (like HVAC units, generators, or refrigeration equipment) that creates unacceptable noise levels.
- The plant belongs to a third party — i.e., it's not within your ownership or control.
- The local planning authority (LPA) determines that the existing noise levels would cause unacceptable harm to the future occupants of your proposed development.
- In such a case, the LPA might impose a Grampian condition like:

"No development shall commence until a scheme to reduce noise from the adjoining commercial plant has been submitted to and approved in writing by the Local Planning Authority, and the approved scheme has been fully implemented."

This means you can't start your development until noise mitigation measures are in place, even though the plant is not yours.

12.4.3 Implications

- You are effectively responsible for ensuring the third party modifies their plant, even if you don't control it.
- If the third party refuses or fails to make the necessary changes, you can't begin development, which can make the permission impractical.
- This is legally acceptable only if the required works are both necessary and achievable within a reasonable timeframe.
- You may need to negotiate with the third party or offer to fund or implement mitigation measures (like acoustic screening, enclosure, or relocation of plant).

12.4.4 Key Legal Tests for Validity

A Grampian condition must meet the six tests for planning conditions set out in the National Planning Policy Framework (NPPF) and Planning Practice Guidance:

- Necessary
- Relevant to planning
- Relevant to the development
- Enforceable
- Precise
- Reasonable in all other respects

If the condition cannot realistically be met (because the third party won't cooperate), it may be challenged or could be seen as unreasonable or unenforceable.

12.5 Option 3 – Withdraw the Planning Application and carry out the Following Works (Proposed Layout)

The following recommendations apply to both Options 2 & 3 as detailed below:-

12.5.1 CooperVision UK Plant

Install a 3.0m high acoustic screen around the plant. This should be continuous in length and be sealed to the floor with no gaps and have a minimum density of 14kg/m²

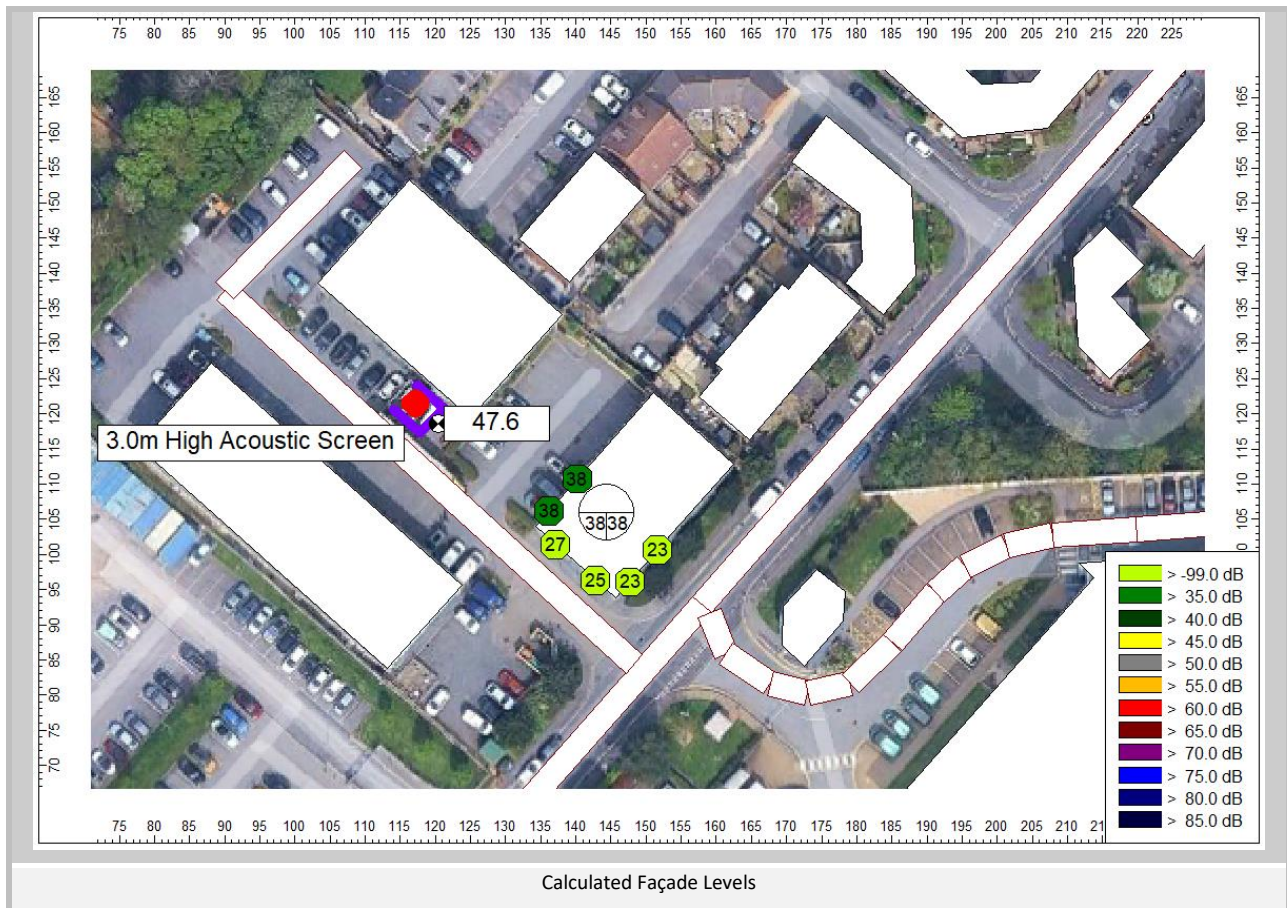
The panels are 100mm thick 1.2 gauge galvanised steel with inner facing of 0.8 gauge galvanised mild steel perforated to more than 30% open area and the panel lined with 100mm thick 45 kg/m³ mineral wool.

ACOUSTIC PERFORMANCE (dB) - CENTRE BAND FREQUENCY									
Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Rw dB
TRANSMISSION LOSS	8	14	16	21	25	29	30	32	25

To prevent erosion of absorbing materials the panels are fitted with a perforated liner manufactured from galvanised mild steel conforming to EN10327 (BS2989). The panels incorporate acoustic grade mineral fibre absorbing infill. The louvres are commonly powder coated for aesthetic enhancement and additional longevity. All RAL and BS colour codes can be matched along with preferred gloss levels.

Operating Temperature	-12o to + 60o C.
Location	Internally & externally mountable
Outer Casing:	Manufactured from not less than 0.8mm thick pre-galvanised sheet steel to BS2989: 1975, Grade Z2, coating type C.
Inner Lining	Manufactured from not less than 0.71mm galvanised perforated sheet steel with a staggered offset hole pattern.
Inter Liner	Glass tissue
Acoustic infill	Inert, fire proof, inorganic, vermin and rot proof, non-hygroscopic mineral fibre not less than 45 kg/m3, packed under not less than 5% compression.

12.5.2 Calculated Façade Level



Based on these recommendations, the following assessments can be made:-

13 BS4142: 2014 +A1:2019 NOISE ASSESSMENT

13.1 Scope of British Standard 4142: 2014 +A1:2019

In the assessment of the existing surrounding commercial premises, consideration has been given to the scope of British Standard 4142: 2014, 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.

13.2 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 1 st 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.

13.3 Assessment Position

The assessment position was established as the proposed residential accommodation premises and no closer than 21m from any and all existing plant.

13.4 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 BS4142: 2014. There are 3 methods for approaching this.

- Subjective method
- Objective method (for tonality)
- Reference method

13.5 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

13.6 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

13.7 Calculated Façade Levels – Proposed Layout

13.7.1 Daytime (07:00 – 23:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1 \text{ hour}}$	51 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+6 dB	8.1	Tonality Characteristic
Rating Level	57 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	45 dB	8.1	Modal Background Noise Level
Assessment Level	+12 dB	11	The background level is subtracted from the rating level.
Assessment	+12 dB		
Conclusion	The assessment level is 'Significant Adverse Impact'		

13.7.2 Night time (23:00 – 07:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,15 \text{ MINUTES}}$	51 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+6 dB	8.1	Tonality Characteristic
Rating Level	57 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,15 \text{ MINUTES}}$	44 dB	8.1	Modal Background Noise Level
Assessment Level	+13 dB	11	The background level is subtracted from the rating level.
Assessment	+13 dB		
Conclusion	The assessment level is 'Significant Adverse Impact'		

13.8 Calculated Façade Levels – Option 1 - Revised Layout

13.8.1 Daytime (07:00 – 23:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1 \text{ hour}}$	26 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	28 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	45 dB	8.1	Modal Background Noise Level
Assessment Level	-17 dB	11	The background level is subtracted from the rating level.
Assessment	-17 dB		
Conclusion	The assessment level is 'Low Impact'		

13.8.2 Night time (23:00 – 07:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,15 \text{ MINUTES}}$	26 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	28 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,15 \text{ MINUTES}}$	44 dB	8.1	Modal Background Noise Level
Assessment Level	-16 dB	11	The background level is subtracted from the rating level.
Assessment	-16 dB		
Conclusion	The assessment level is 'Low Impact'		

13.9 Calculated Façade Levels – Option 2 or 3 – Remedial Works to Plant

13.9.1 Daytime (07:00 – 23:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1 \text{ hour}}$	38 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	40 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	45 dB	8.1	Modal Background Noise Level
Assessment Level	-5 dB	11	The background level is subtracted from the rating level.
Assessment	-5 dB		
Conclusion	The assessment level is 'Low Impact'		

13.9.2 Night time (23:00 – 07:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,15 \text{ MINUTES}}$	38 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	40 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,15 \text{ MINUTES}}$	44 dB	8.1	Modal Background Noise Level
Assessment Level	-4 dB	11	The background level is subtracted from the rating level.
Assessment	-4 dB		
Conclusion	The assessment level is 'Low Impact'		

13.10 Tonal Penalty

A penalty has been applied to the specific noise level to allow for any tonal elements that may be present from the existing plant.

13.11 Penalties

The existing plant that belongs to CooperVision UK runs 24/7. Therefore, could not be considered intermittent. The plant could also not be considered impulsive as the load doesn't change.

13.12 Assessment Conclusion

It can be seen from the above assessments that the existing plant has returned an assessment conclusion of Significant Adverse Impact. Therefore, further mitigation measures are required and have been recommended within this report.

14 VEHICLE MOVEMENT

Concern has been raised from the Pollution Control Manager with regards to the noise from adjacent units, specifically CooperVision UK. The CooperVision UK site has it's main entrance facing directly onto Unit 9, where it is proposed to change the use from commercial/office space to 4 residential flats. We have spoken to the Principal Facilities Engineer at CooperVision UK and he has informed us that there are three articulated lorries per day at this location and also that there is a shift change every day in the morning between the hours of 06:30 and 07:30 and again in the evening between the hours of 18:30 and 19:30 with approximately 300 cars per shift change. The majority of deliveries take place at a separate unit further down Ensign Way.

The noise meter at position 1 has recorded all traffic, whether cars or commercial in order to aid in the design of the glazing and ventilation for the proposed flats. In addition to this an exercise has been carried out to calculate the noise level purely from the shift change vehicular traffic and also the three artic lorries that use the site each day.

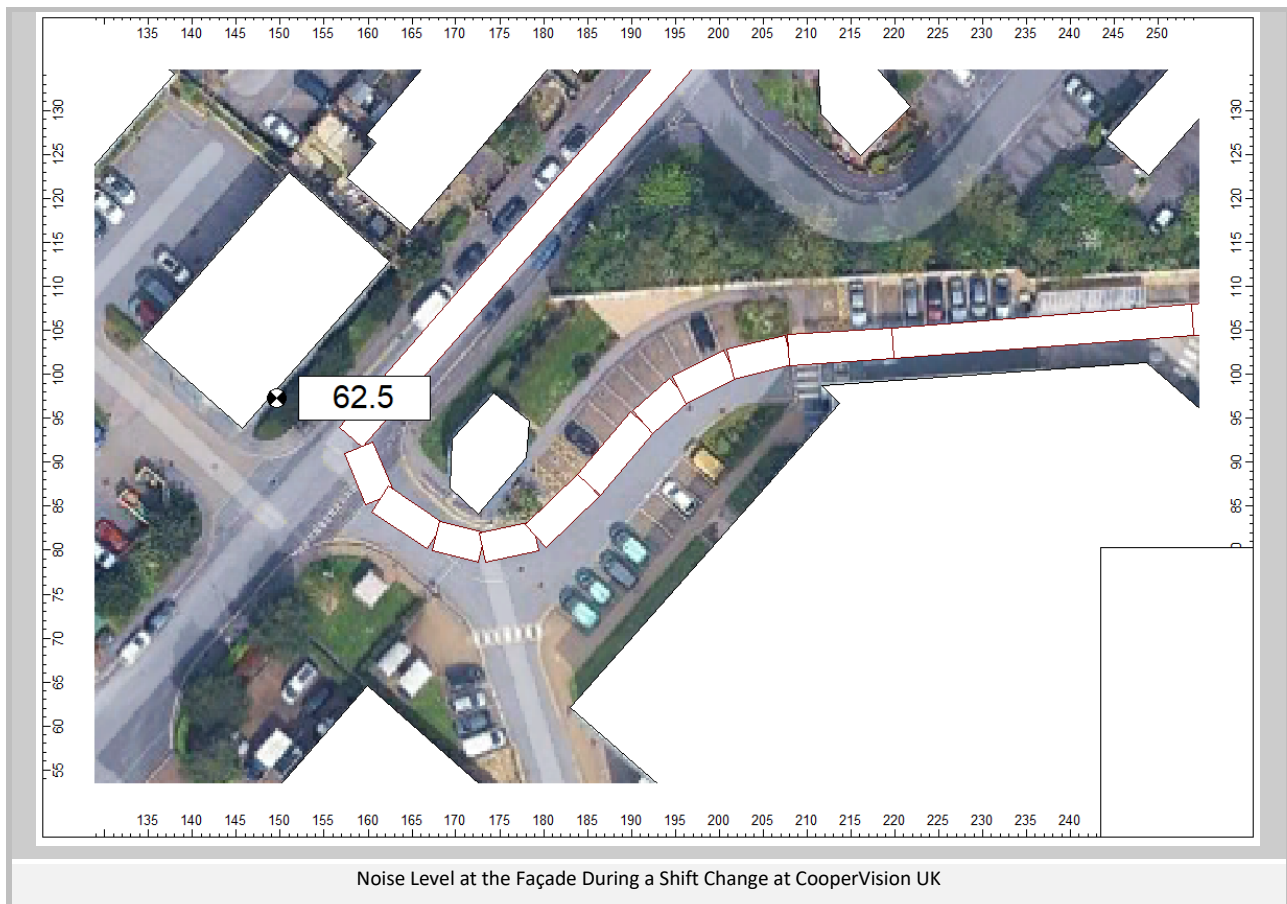
Average Noise Level Recorded at Façade During Shift Change	L _{Aeq} 63 dB
Calculated Noise Level at Façade During Shift Change	L _{Aeq} 62.5 dB
Variance	-0.5 dB

14.1 Inputted Levels

The following noise levels have been inputted into the 3D acoustic Model in order to calculate the resultant noise levels at the aforementioned assessment position.

Road															
Name		M. ID		L10			Count Data		exact Count Data						Traffic Speed
				Day	Evening	Night	Q	Str.class.	q			p (%)			(km/h)
				(dBA)	(dBA)	(dBA)	(Veh/18h)		Day	Evening	Night	Day	Evening	Night	Dist.
															Type
															(%)
				63.5	0.0	50.4			306.0	0.0	15.0	2.0	2.0	2.0	30
				0.0	0.0	0.0	0	Federal Road							100
				63.5	0.0	50.4			306.0	0.0	15.0	2.0	2.0	2.0	30

14.2 Calculated Façade Noise Levels



14.3 Conclusion

It can be seen from the calculated façade levels that the noise levels are within 0.5 dB to levels recorded during the morning and evening shift changes and that mitigation for the flats can be proposed with the glazing and ventilation specification.

15 ACOUSTIC DESIGN STATEMENT

Good Acoustic Design	Given the size and orientation of the proposed site, it is recommended that the developer adopted, where practically possible, a good acoustic design which should include careful consideration of the positioning of the proposed properties together with thoughts being taken as to internal layouts to minimise noise sensitive rooms facing onto dominant noise sources within the local areas. Given the size of this development, every effort has already been made to minimise the acoustic impact from the surrounding areas.
Internal Noise Levels	Calculations have been carried out and assessments made to BS 8233: 2014 together with design specifications supplied for the required glazing and ventilation specifications required across the development to ensure compliance.
L _{Amax} dB Noise Levels	Assessments and calculations demonstrate that the L _{Amax} dB Levels are in excess of the recommended criteria set out within PRoPG and therefore further mitigation measures of MVHR on this site has been proposed and adopted in order to mitigate the need to open the windows.
NPPF & NPSE	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.
BS 4142: 2014	Option 1 Revise the internal layouts to better suit the acoustic environment and noise from CooperVision UK external plant and ensure non-habitable rooms are located facing and adjacent to the existing plant. Option 2 Apply for a Grampian Planning Condition to allow further remedial works to be undertaken to this external plant to reduce noise levels down to acceptable levels and keep the proposed layout. Option 3 Remove the planning application, contact CooperVision UK and agree to undertake the proposed remedial works and then submit a planning application with an updated noise report that demonstrates these noise levels do not have a Significant Adverse Effect on the proposed development.
OVERALL OUTCOME	NOEL – No Observed Effect Level

16 RECOMMENDATION TO DECISION MAKER

Levels have been recorded and assessments made in accordance with the relevant standards. Internal criteria's have been set and calculations made in order to determine the minimum construction details required in order to meet the desired level within the proposed residential dwellings and satisfy the local council's requirements.

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 cannot demonstrate compliance with the National Planning Policy Framework 2024, NPPF & NPSE and that, with regards to sound, planning permission cannot be granted using the following parameters.

As indicated in Section 2 of PRoPG, following the PRoPG approach will lead to the choice of one of four possible recommendations from the noise practitioner to the decision maker:

- A. Planning consent may be granted without any need for noise conditions;
- B. Planning consent may be granted subject to the inclusion of suitable noise conditions;
- C. Planning consent should be refused on noise grounds in order to avoid significant adverse effects ("avoid"); or
- D. Planning consent should be refused on noise grounds in order to prevent unacceptable adverse effects ("prevent").

RECOMMENDATION TO DECISION MAKER

Grant with Noise Conditions

17 CONCLUSION

17.1.1 Background Noise Levels

A 120-hour background noise survey was undertaken from the 4th – 9th April 2025 at two positions at the site in order to establish the underlying background noise levels. Recorded levels as follows.

Assessment Position	Date Start	Date Finish	Daytime LAeq	Night Time LAeq
Position 1	04/04/2025	09/04/2025	62.8	58.3
Position 2	04/04/2025	09/04/2025	54.5	51.6

Assessment Position	Date Start	Date Finish	Daytime LA90	Night Time LA90
Position 1	04/04/2025	09/04/2025	45.0	44.0
Position 2	04/04/2025	09/04/2025	49.0	49.0

The data recorded has been further extrapolated to evaluate the modal 1 minute data to assess the morning and evening shift change at CooperVision UK between the hours of 06:30 – 07:30 and 18:30 – 19:30 while the shift changes occurs.

	4 th April 2025	5 th April 2025	6 th April 2025	7 th April 2025	8 th April 2025
06:30 – 07:30	65.0	62.0	62.0	65.0	65.0
18:30 – 19:30	61.0	63.0	60.0	62.0	61.0

17.2 Potential Façade Noise Levels

17.2.1 Daytime (07:00-23:00)

Time Period	Highest Potential Façade Noise Level	Noise Risk Category 2 - Medium
Average Daytime (07:00-23:00)	L _{Aeq, 16 HOUR} 63.0 dB	63 - 70 dB

17.2.2 Night Time (23:00-07:00)

Time Period	Highest Potential Façade Noise Level	Noise Risk Category 2 - Medium
Average Night Time (23:00-07:00)	L _{Aeq, 16 HOUR} 58.0 dB	55 - 60 dB
	Maximum (10 Times) – L _{Amax} 79.0 dB	>80 dB (10 Times in 8 Hours)

17.3 Risk Assessment

17.3.1 Daytime (07:00-23:00) – Position 1

Risk Assessment Category	Risk Assessment
2 - Medium	As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development.

17.3.2 Night Time (23:00-07:00) – Position 1

Risk Assessment Category	Risk Assessment
2 - Medium	As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development.

The above table demonstrates this site is located within Noise Risk Category 2 which suggests a medium level of risk for daytime and night time levels. Therefore, further mitigation levels will be required at Stage 2.

17.4 Glazing & Ventilation Specification

The development should be designed with a 4mm glass / 16mm air gap / 4mm glass double glazed windows and MVHR or similarly approved to all rooms on the North Western façade and an 8mm glass / 16mm air gap / 6mm glass double glazed windows and MVHR or similarly approved to all rooms on the South Eastern and South Western façade to ensure the internal noise levels are acceptable in terms of the assessment to British Standard 8233: 2014.

17.5 WHO Guidelines for Community Noise

The development does not propose external living areas and therefore an assessment to the World Health Organisation's 'Guidelines for Community Noise' has not been carried out.

17.6 Existing Plant

The following plant is located externally, generally as detailed on the drawing within this report. The unit has the following sound pressure data measured by Sound Advice Acoustics during an initial site visit.

Plant	Octave Band Centre Frequency (Hz) Sound Power level								Lp dB(A)
	63	125	250	500	1.0k	2.0k	4.0k	8.0k	
External 24-Hour Plant	75.0	75.0	69.5	63.1	57.8	53.6	49.3	43.0	65.7 @1m

17.7 BS 4142+A1:2019 External Plant Assessment

17.7.1 Calculated Façade Levels – Proposed Layout

17.7.1.1 Daytime (07:00 – 23:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1 \text{ hour}}$	51 dB	7	Calculated using ISO 9613:1996 ^[3] .
Tonality	+6 dB	8.1	Tonality Characteristic
Rating Level	57 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	45 dB	8.1	Modal Background Noise Level
Assessment Level	+12 dB	11	The background level is subtracted from the rating level.
Assessment	+12 dB		
Conclusion	The assessment level is 'Significant Adverse Impact'		

17.7.1.2 Night time (23:00 – 07:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,15 \text{ MINUTES}}$	51 dB	7	Calculated using ISO 9613:1996 ^[3] .
Tonality	+6 dB	8.1	Tonality Characteristic
Rating Level	57 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,15 \text{ MINUTES}}$	44 dB	8.1	Modal Background Noise Level
Assessment Level	+13 dB	11	The background level is subtracted from the rating level.
Assessment	+13 dB		
Conclusion	The assessment level is 'Significant Adverse Impact'		

17.7.2 Calculated Façade Levels – Option 1 - Revised Layout

17.7.2.1 Daytime (07:00 – 23:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1 \text{ hour}}$	26 dB	7	Calculated using ISO 9613:1996 ^[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	28 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	45 dB	8.1	Modal Background Noise Level
Assessment Level	-17 dB	11	The background level is subtracted from the rating level.
Assessment	-17 dB		
Conclusion	The assessment level is 'Low Impact'		

17.7.2.2 Night time (23:00 – 07:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,15 \text{ MINUTES}}$	26 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	28 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,15 \text{ MINUTES}}$	44 dB	8.1	Modal Background Noise Level
Assessment Level	-16 dB	11	The background level is subtracted from the rating level.
Assessment	-16 dB		
Conclusion	The assessment level is 'Low Impact'		

17.7.3 Calculated Façade Levels – Option 2 or 3 – Remedial Works to Plant

17.7.3.1 Daytime (07:00 – 23:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1 \text{ hour}}$	38 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	40 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	45 dB	8.1	Modal Background Noise Level
Assessment Level	-5 dB	11	The background level is subtracted from the rating level.
Assessment	-5 dB		
Conclusion	The assessment level is 'Low Impact'		

17.7.3.2 Night time (23:00 – 07:00).

Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,15 \text{ MINUTES}}$	38 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Rating Level	40 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,15 \text{ MINUTES}}$	44 dB	8.1	Modal Background Noise Level
Assessment Level	-4 dB	11	The background level is subtracted from the rating level.
Assessment	-4 dB		
Conclusion	The assessment level is 'Low Impact'		

17.7.4 Assessment Conclusion

It can be seen from the above assessments that the existing plant has returned an assessment conclusion of Significant Adverse Impact. Therefore, further mitigation measures are required and have recommended within this report.

17.8 Conclusion

Levels have been recorded and assessments made in accordance with the relevant standards. Internal criteria's have been set and calculations made in order to determine the minimum construction details required in order to meet the desired level within the proposed flats and satisfy the local council's requirements.

The operation of any plant has been assessed to establish if the development will have a demonstrable adverse effect in terms of noise that outweigh the benefits of the development. Measurements have been undertaken in accordance with British Standard 4142: 2014 +A1:2019 and ISO 1996 – Part 2: 2017. This report has established the existing background noise levels at the closest residential façade to the site and the assessment of the impact of the site operation on nearby residential properties. The resulting emissions from the site running on a worst-case scenario show conflict with 'Significant Adverse Effect' criteria and give a strong indication that complaint and impact on the local amenity is unlikely, provided one of the proposed options detailed within this report is adopted.

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 Impact Acoustics Ltd that the proposed development can demonstrate compliance with the National Planning Policy Framework 2024, NPPF & NPSE and that, with regards to sound, planning permission can be granted.

18 APPENDIX A – UNCERTAINTY BUDGET

18.1 Scope

Section 10 of British Standard 4142: 2014 +A1:2019 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 +A1:2019 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.

18.2 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

18.3 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

18.4 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

18.5 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.

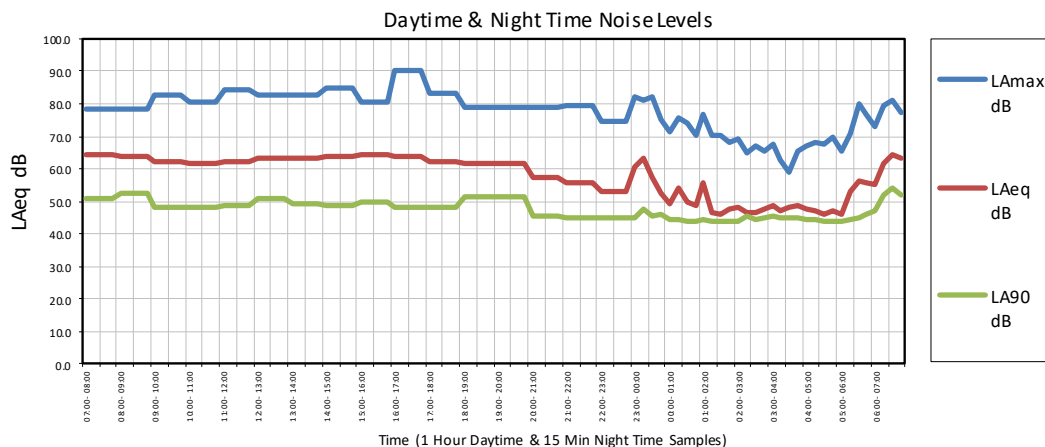
19 APPENDIX B - RESULTS

19.1 4th – 5th April 2025 Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	62.1	90.1	48.0	65.4	61.7	58.6	55.6	59.7	53.8	45.7	36.5	30.9
NIGHTTIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	56.2	82.1	44.0	60.4	56.4	52.2	49.0	53.9	48.5	39.0	29.2	27.0

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	64.1	66.3	50.7	66.5	62.2	59.8	57.3	62.1	55.5	45.9	36.3	35.3
08:00 - 09:00	63.9	78.5	52.7	66.9	63.8	60.9	57.5	61.5	55.6	47.1	37.9	35.4
09:00 - 10:00	62.5	82.5	48.2	64.8	60.6	58.8	56.1	60.3	54.0	45.3	35.5	26.6
10:00 - 11:00	61.6	80.7	48.3	65.3	60.5	58.1	55.8	59.2	53.4	46.5	36.9	27.6
11:00 - 12:00	62.2	84.5	48.9	65.1	61.6	59.1	56.5	59.6	54.1	46.6	37.6	33.4
12:00 - 13:00	63.1	82.6	50.9	67.3	65.3	59.6	56.5	60.7	54.9	47.6	38.6	28.8
13:00 - 14:00	63.2	82.8	49.3	66.6	62.5	59.6	56.6	60.9	54.8	46.3	36.8	25.8
14:00 - 15:00	63.6	84.7	48.5	66.0	62.4	60.4	57.6	61.2	55.3	47.0	37.1	28.4
15:00 - 16:00	64.1	80.4	49.9	68.5	63.7	60.1	57.1	61.7	56.2	48.4	39.5	34.4
16:00 - 17:00	64.0	90.1	48.3	65.9	62.8	60.2	57.0	61.3	56.3	49.9	41.1	33.2
17:00 - 18:00	62.0	83.0	48.0	65.3	61.9	57.8	55.2	59.9	53.4	43.0	32.6	25.0
18:00 - 19:00	61.7	78.7	51.5	67.1	63.2	59.1	55.4	59.3	52.9	43.9	35.3	26.9
19:00 - 20:00	57.6	78.9	45.3	60.8	56.4	54.5	51.1	55.3	49.2	39.1	29.5	32.8
20:00 - 21:00	55.5	79.7	44.9	60.1	55.1	53.1	48.8	53.0	47.5	38.3	30.0	19.1
21:00 - 22:00	53.2	74.7	44.8	58.9	54.7	51.5	48.0	50.5	44.3	36.2	27.2	16.8
22:00 - 23:00	51.5	75.9	44.2	57.3	53.2	49.8	45.5	48.8	42.9	34.1	23.5	13.3

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	60.8	82.1	44.7	59.3	56.1	54.6	52.2	58.6	53.8	41.9	28.5	16.2
23:15 - 23:30	63.1	81.3	47.4	63.1	57.8	57.1	55.1	60.9	55.8	44.1	33.2	25.2
23:30 - 23:45	57.2	82.1	45.6	58.6	54.4	51.8	49.3	55.3	48.9	37.8	25.9	15.2
23:45 - 00:00	52.6	75.0	45.8	58.7	53.7	50.9	47.3	50.0	43.6	34.3	24.7	14.6
00:00 - 00:15	49.2	71.1	44.2	56.4	52.4	48.3	43.5	46.1	40.5	33.0	22.5	14.6
00:15 - 00:30	54.3	75.5	44.6	58.8	53.9	51.1	47.7	51.8	46.2	36.5	25.7	15.0
00:30 - 00:45	49.6	74.3	43.9	57.1	52.9	48.4	43.7	46.2	41.1	34.2	24.9	13.9
00:45 - 01:00	48.5	70.1	43.8	57.2	52.5	48.5	43.5	45.0	39.3	34.3	23.5	13.1
01:00 - 01:15	55.6	76.7	44.3	59.1	53.8	51.2	48.1	53.1	48.0	40.3	30.4	18.0
01:15 - 01:30	46.7	70.4	43.9	56.3	51.7	47.6	42.0	41.5	39.0	34.0	25.0	15.1
01:30 - 01:45	46.2	70.5	43.7	57.2	51.7	46.9	41.0	39.7	38.8	36.1	23.7	12.9
01:45 - 02:00	47.6	68.3	44.1	57.0	51.9	48.0	43.8	44.0	37.6	31.7	24.3	14.0
02:00 - 02:15	48.2	69.4	43.8	57.6	52.2	48.1	43.6	44.5	39.4	34.2	25.7	15.2
02:15 - 02:30	46.6	64.8	45.3	57.0	51.5	47.4	42.3	42.0	38.3	31.9	24.1	13.1
02:30 - 02:45	46.6	67.0	44.5	56.5	51.5	47.5	42.2	41.5	38.8	33.2	23.5	14.2
02:45 - 03:00	47.4	65.7	44.9	60.4	52.7	48.1	42.6	42.3	39.5	33.1	22.7	13.7
03:00 - 03:15	49.0	67.8	45.2	57.9	52.1	48.6	44.0	45.1	41.0	34.6	25.2	14.3
03:15 - 03:30	46.9	62.9	45.1	57.4	52.1	47.8	42.0	41.6	39.4	33.5	22.8	13.0
03:30 - 03:45	48.2	58.7	44.8	57.6	53.0	47.6	41.8	40.4	43.4	35.9	21.0	12.2
03:45 - 04:00	48.7	65.7	44.7	58.3	52.9	48.1	43.0	43.1	42.8	36.1	25.2	19.0
04:00 - 04:15	47.9	67.1	44.5	56.5	51.7	47.4	41.8	40.9	42.7	36.1	26.1	15.5
04:15 - 04:30	47.0	68.2	44.2	57.4	51.7	47.4	42.1	41.4	40.1	34.2	26.0	14.9
04:30 - 04:45	46.2	67.7	44.1	56.2	51.4	47.0	41.0	39.6	39.9	33.2	22.7	11.5
04:45 - 05:00	47.2	69.5	43.9	56.4	51.7	47.9	42.5	41.6	40.1	34.6	25.1	14.8
05:00 - 05:15	46.2	65.3	44.1	56.3	51.3	47.2	41.5	40.5	39.0	32.6	20.4	10.7
05:15 - 05:30	52.9	71.0	44.2	58.6	54.6	50.5	46.8	50.0	45.0	35.2	31.7	39.7
05:30 - 05:45	56.4	79.8	44.9	58.8	54.3	50.9	48.9	54.3	48.7	37.9	26.6	15.9
05:45 - 06:00	55.8	77.0	45.7	58.6	54.6	52.0	48.6	53.3	48.6	39.0	30.2	18.2
06:00 - 06:15	55.4	73.1	47.1	58.8	55.6	53.0	49.2	53.1	46.8	37.9	28.2	21.0
06:15 - 06:30	61.6	79.3	51.8	66.5	66.1	57.4	54.4	59.0	53.7	46.0	38.6	35.9
06:30 - 06:45	64.4	81.2	54.3	67.2	62.7	59.7	56.8	62.1	56.9	46.9	35.9	31.6
06:45 - 07:00	63.4	77.3	52.2	67.8	62.7	58.9	56.2	61.5	54.6	44.0	33.0	22.7

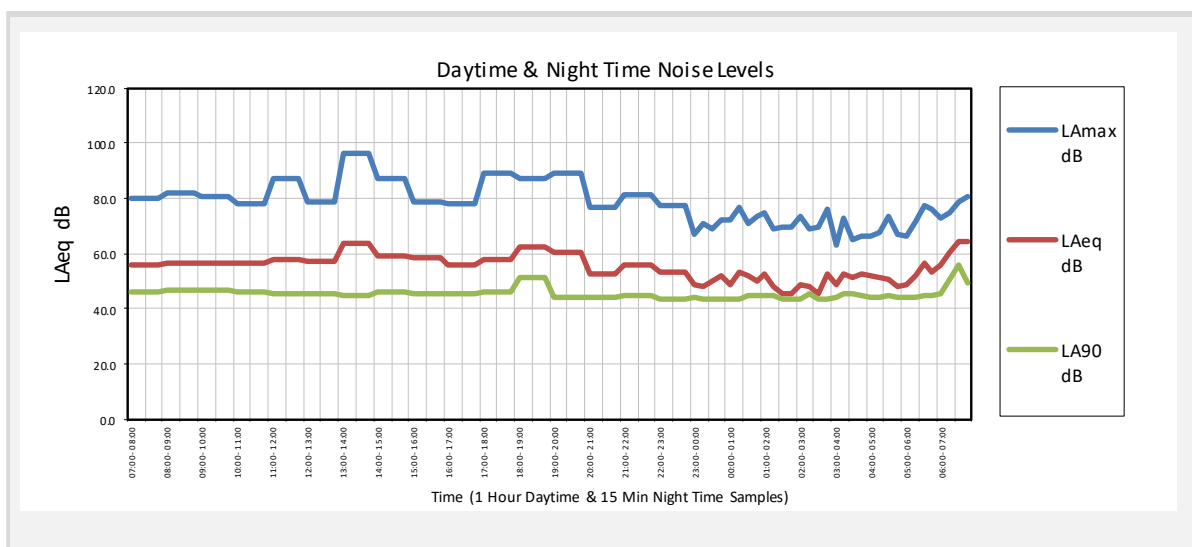


19.2 5th – 6th April 2025 Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	58.5	96.0	46.0	62.0	62.4	57.4	52.8	55.5	49.3	42.2	32.9	27.7
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	55.1	80.7	44.0	60.5	55.3	51.7	48.0	52.2	47.9	39.2	30.3	27.0

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	55.7	80.1	46.2	60.9	56.2	52.7	49.6	53.2	47.5	39.1	29.9	24.1
08:00 - 09:00	56.5	81.9	46.7	60.6	55.8	52.9	50.7	53.8	48.4	41.9	32.1	29.5
09:00 - 10:00	56.3	80.6	46.6	58.4	55.2	52.7	50.2	53.9	48.3	39.2	30.0	32.4
10:00 - 11:00	56.7	78.2	46.1	59.9	55.9	53.2	50.3	54.5	47.9	39.6	31.0	32.0
11:00 - 12:00	57.5	87.1	45.7	60.4	56.2	53.7	51.0	55.2	49.1	42.9	34.0	22.0
12:00 - 13:00	57.5	79.0	45.5	61.2	56.4	54.0	51.4	55.4	48.4	41.1	31.1	23.7
13:00 - 14:00	63.4	96.0	45.0	60.8	71.6	65.0	58.6	58.0	51.7	44.4	37.0	29.9
14:00 - 15:00	59.2	87.0	45.8	66.7	65.6	60.9	54.1	54.2	49.2	47.0	34.8	25.3
15:00 - 16:00	58.3	78.5	45.5	61.2	58.6	55.7	52.4	56.2	48.9	40.1	30.4	19.3
16:00 - 17:00	56.2	78.3	45.3	58.9	55.1	53.4	50.2	54.0	46.9	39.7	29.0	18.8
17:00 - 18:00	57.8	89.3	45.9	61.5	56.3	54.0	51.0	55.5	49.6	42.1	31.7	20.6
18:00 - 19:00	62.6	86.9	51.0	67.6	66.0	61.5	56.8	59.8	53.6	46.6	37.9	33.2
19:00 - 20:00	60.7	89.4	44.4	61.8	60.7	56.7	55.1	58.3	52.1	43.6	35.5	27.6
20:00 - 21:00	52.4	76.5	44.3	58.4	56.7	50.7	46.0	49.2	44.9	37.3	28.6	16.9
21:00 - 22:00	56.1	81.5	44.6	60.4	55.5	53.0	49.3	54.1	47.4	36.4	26.5	21.3
22:00 - 23:00	53.0	77.7	43.5	57.5	53.2	50.4	46.4	50.7	44.8	34.1	23.7	16.0

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	48.5	66.7	43.9	56.4	52.5	49.6	43.1	44.6	40.1	30.3	22.3	11.4
23:15 - 23:30	48.1	71.0	43.6	56.4	52.3	51.4	45.6	41.4	37.5	31.4	24.1	12.7
23:30 - 23:45	49.9	69.2	43.5	56.6	52.5	49.5	44.4	47.6	39.8	29.4	18.7	11.9
23:45 - 00:00	51.8	72.3	43.5	62.3	53.2	49.5	44.8	48.5	44.6	36.0	27.8	18.8
00:00 - 00:15	48.6	72.2	43.6	56.3	51.7	48.0	43.0	46.0	39.1	29.3	16.4	10.3
00:15 - 00:30	53.5	76.9	43.8	57.3	52.2	49.7	45.8	51.2	45.7	34.2	23.7	17.6
00:30 - 00:45	52.2	70.9	44.7	58.8	53.7	51.7	47.8	48.7	43.7	35.8	27.0	15.7
00:45 - 01:00	50.3	73.4	45.0	56.8	51.9	48.9	44.9	47.8	40.7	30.6	18.3	10.6
01:00 - 01:15	52.8	74.5	45.1	57.5	52.3	49.6	46.1	50.5	44.9	33.0	20.3	11.6
01:15 - 01:30	47.8	68.7	44.5	56.8	51.4	47.8	43.4	43.4	40.2	33.4	25.2	14.2
01:30 - 01:45	45.2	69.5	43.5	56.1	51.0	47.1	40.7	39.2	37.0	31.7	18.1	10.1
01:45 - 02:00	45.5	69.5	43.4	56.1	51.0	47.3	40.7	38.9	38.6	32.6	20.2	10.1
02:00 - 02:15	48.8	73.4	43.6	57.2	51.3	47.8	42.4	44.6	42.1	34.7	22.8	13.7
02:15 - 02:30	48.3	68.9	45.2	57.5	51.5	47.4	44.1	43.5	41.0	35.3	25.5	14.8
02:30 - 02:45	45.5	69.8	43.7	56.3	50.9	47.0	40.6	39.2	38.5	33.0	21.6	10.9
02:45 - 03:00	52.3	76.1	43.7	57.9	51.5	48.6	44.6	49.5	45.7	35.3	23.9	14.2
03:00 - 03:15	48.5	63.3	44.1	56.8	50.9	47.3	40.9	39.4	44.5	37.1	18.3	10.1
03:15 - 03:30	52.3	72.8	45.2	57.4	51.5	48.4	44.4	46.9	47.9	39.3	22.0	11.9
03:30 - 03:45	51.6	65.1	45.4	57.1	51.2	47.5	43.0	40.7	48.4	41.1	23.3	11.5
03:45 - 04:00	52.5	66.5	44.9	56.8	51.2	47.4	41.9	40.4	49.6	42.7	25.2	11.9
04:00 - 04:15	51.7	66.6	44.2	57.2	51.0	47.1	40.6	39.5	48.8	41.7	25.6	13.6
04:15 - 04:30	51.1	67.3	44.2	57.8	52.1	47.8	42.5	44.0	47.2	39.6	25.6	14.4
04:30 - 04:45	50.5	73.7	44.9	57.5	51.1	52.9	44.2	41.2	45.0	37.6	25.3	11.9
04:45 - 05:00	48.3	67.0	44.1	57.2	51.0	47.1	40.7	39.3	44.4	37.3	21.1	12.6
05:00 - 05:15	48.4	66.5	44.1	57.2	51.5	48.1	42.6	42.8	42.6	36.0	25.4	14.2
05:15 - 05:30	52.0	71.3	44.2	58.5	52.8	49.9	44.9	48.7	45.3	36.9	24.4	13.4
05:30 - 05:45	56.3	77.1	44.6	59.3	53.3	50.6	46.9	52.9	50.9	41.8	30.5	18.4
05:45 - 06:00	53.5	76.4	44.8	57.3	52.8	50.7	47.3	51.2	44.9	35.8	29.9	12.8
06:00 - 06:15	55.7	73.1	45.6	60.1	55.9	53.4	50.2	52.8	47.5	39.1	28.4	28.0
06:15 - 06:30	60.5	74.7	50.8	67.4	63.9	57.5	53.8	57.8	52.2	43.8	38.7	31.4
06:30 - 06:45	64.3	78.7	55.7	69.4	63.4	59.7	56.9	61.8	56.7	47.1	41.2	39.7
06:45 - 07:00	64.1	80.7	49.3	66.5	60.7	58.5	56.7	62.2	56.0	45.9	36.8	36.1

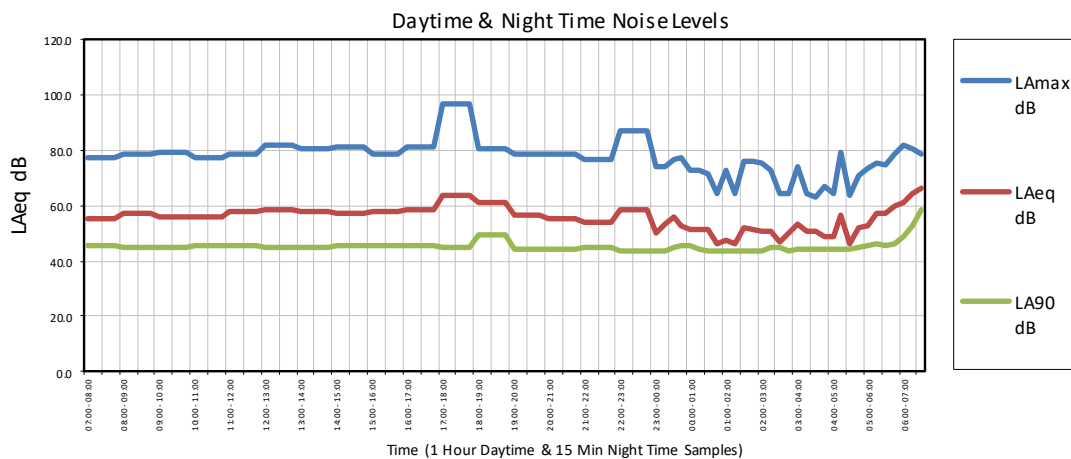


19.3 6th – 7th April 2025 Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	58.2	96.9	45.0	62.4	59.7	57.1	52.4	55.4	49.9	41.9	34.6	25.7
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	57.2	81.9	44.0	61.9	58.7	53.2	50.0	54.8	49.6	40.3	29.8	30.9

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	55.3	77.1	45.7	59.0	55.4	52.0	48.9	52.8	46.9	39.6	30.5	24.8
08:00 - 09:00	57.0	78.7	45.1	59.5	55.2	52.7	50.5	54.9	48.5	39.0	29.4	18.2
09:00 - 10:00	56.1	79.4	44.9	59.6	54.1	51.9	49.9	53.9	47.6	39.4	30.7	18.0
10:00 - 11:00	55.7	76.9	45.2	59.2	55.4	52.1	49.2	52.8	47.7	43.4	39.9	30.2
11:00 - 12:00	58.0	78.7	45.5	61.0	55.6	54.8	52.2	56.0	48.7	38.5	29.2	17.7
12:00 - 13:00	58.7	81.5	45.1	61.8	57.5	55.0	52.2	56.6	50.1	41.7	32.1	19.8
13:00 - 14:00	57.6	80.3	45.1	60.5	56.7	54.2	51.1	55.4	49.3	40.1	30.3	19.5
14:00 - 15:00	57.1	80.8	45.2	61.6	56.5	54.6	51.9	54.6	48.1	41.0	31.8	23.3
15:00 - 16:00	57.5	78.8	45.3	60.2	57.5	54.2	51.3	55.3	48.9	40.1	30.4	19.9
16:00 - 17:00	58.3	80.9	45.3	63.4	60.9	56.0	51.9	55.6	49.7	44.5	38.6	29.3
17:00 - 18:00	63.6	96.9	44.6	64.3	68.0	66.3	59.5	57.6	56.2	48.3	38.1	29.2
18:00 - 19:00	61.2	80.2	49.5	68.8	63.2	58.6	54.5	58.9	52.4	43.5	39.6	31.4
19:00 - 20:00	56.5	78.3	43.9	58.4	54.8	52.8	50.0	54.5	47.6	36.5	25.8	20.5
20:00 - 21:00	54.9	78.2	44.1	62.4	54.5	51.4	48.4	52.4	47.0	38.5	29.5	27.0
21:00 - 22:00	53.7	76.4	44.8	62.1	54.3	50.8	46.9	51.2	45.1	38.6	34.1	22.2
22:00 - 23:00	58.2	86.9	43.8	61.0	59.5	55.0	49.7	56.3	49.8	37.6	24.4	14.2

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	50.2	73.7	43.7	57.5	52.2	49.1	44.4	46.6	42.9	35.4	26.2	14.2
23:15 - 23:30	53.5	74.1	43.7	61.3	53.9	50.5	46.4	51.0	45.5	36.9	26.7	16.8
23:30 - 23:45	55.6	76.7	45.0	61.1	57.1	53.1	51.6	52.4	47.1	39.7	32.9	16.2
23:45 - 00:00	52.9	76.9	45.6	58.2	52.6	49.0	45.9	50.5	44.8	34.0	23.1	13.4
00:00 - 00:15	51.5	72.9	45.6	58.0	52.8	49.1	45.4	49.1	43.0	33.9	23.2	15.4
00:15 - 00:30	51.3	72.7	44.5	58.1	53.0	49.4	45.4	48.8	42.5	34.4	20.1	11.0
00:30 - 00:45	51.6	71.5	43.8	61.8	54.6	50.6	45.7	48.3	43.4	37.3	28.1	19.0
00:45 - 01:00	46.4	64.0	43.7	56.7	52.6	47.7	41.5	42.2	37.2	29.7	20.0	11.7
01:00 - 01:15	47.8	73.0	43.6	56.3	51.4	47.8	41.9	44.2	39.8	28.5	14.6	9.7
01:15 - 01:30	46.1	64.6	43.7	57.1	51.2	47.4	41.7	41.9	37.2	28.6	15.5	10.0
01:30 - 01:45	51.7	75.8	43.7	59.1	52.1	48.9	44.7	49.0	44.1	33.7	23.7	13.8
01:45 - 02:00	51.6	76.2	43.8	56.7	51.7	48.6	43.5	48.8	44.9	35.0	22.4	13.3
02:00 - 02:15	50.9	75.3	43.9	56.6	51.6	48.7	43.9	48.6	42.7	31.1	16.6	11.0
02:15 - 02:30	50.5	72.4	45.0	57.9	51.8	48.7	44.5	47.6	42.8	33.8	21.2	11.3
02:30 - 02:45	46.6	64.4	44.9	57.4	51.3	47.7	42.5	42.2	37.7	30.1	16.6	10.0
02:45 - 03:00	50.1	64.2	43.8	56.9	50.7	47.3	41.4	40.8	46.7	38.7	21.2	11.3
03:00 - 03:15	53.4	74.1	44.1	56.5	51.1	47.9	42.9	47.4	49.6	41.5	23.0	11.4
03:15 - 03:30	51.0	64.2	44.3	56.5	50.6	46.7	40.6	39.5	48.1	40.5	20.1	10.2
03:30 - 03:45	50.5	62.7	44.3	57.0	50.7	46.8	40.7	39.9	47.4	39.4	19.6	15.5
03:45 - 04:00	48.8	66.8	44.1	57.2	50.8	47.4	41.9	41.0	44.7	37.2	25.6	23.1
04:00 - 04:15	48.6	64.3	44.3	57.8	51.2	48.3	43.9	43.5	42.1	34.7	22.3	15.8
04:15 - 04:30	56.2	79.2	44.3	58.6	53.0	50.9	50.2	54.2	47.5	37.3	26.4	13.8
04:30 - 04:45	46.1	63.9	44.4	58.0	51.4	47.0	41.9	40.1	39.2	31.9	19.7	10.6
04:45 - 05:00	51.8	70.9	45.2	59.2	57.1	49.5	45.8	46.8	46.0	38.8	25.7	15.1
05:00 - 05:15	52.7	73.6	45.3	58.9	52.7	49.3	45.4	48.6	47.2	39.4	25.4	13.5
05:15 - 05:30	57.3	75.3	46.3	60.0	54.9	52.0	49.3	54.6	50.9	42.1	28.4	17.5
05:30 - 05:45	57.4	74.8	45.8	58.4	53.8	51.3	48.0	53.2	52.6	45.3	28.9	15.2
05:45 - 06:00	59.7	78.6	46.1	67.1	59.0	55.5	52.1	57.6	51.6	41.8	30.6	21.1
06:00 - 06:15	61.2	81.9	49.1	62.6	57.9	55.9	54.1	59.4	52.4	42.1	32.3	25.6
06:15 - 06:30	64.5	80.2	52.7	67.1	62.4	58.8	56.7	62.4	56.6	46.6	37.4	41.4
06:30 - 06:45	65.9	78.7	58.2	70.2	69.7	62.4	58.6	63.5	57.7	48.1	38.2	40.7
06:45 - 07:00	65.2	80.0	54.1	69.0	67.5	60.9	57.9	63.2	56.7	45.9	38.3	40.9

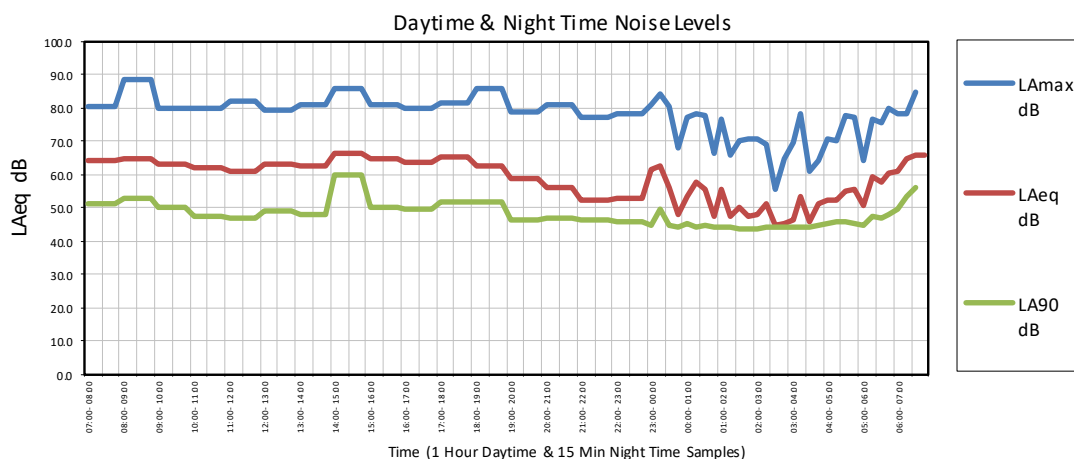


19.4 7th – 8th April 2025 Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	62.8	88.7	50.0	66.1	62.8	59.8	56.2	60.3	54.7	47.6	39.7	32.9
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	58.3	84.5	44.0	62.0	57.1	53.6	50.8	56.0	50.9	41.6	33.6	30.1

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	64.4	80.2	51.3	66.5	61.5	59.7	57.4	62.3	56.1	46.9	40.2	38.6
08:00 - 09:00	64.6	88.7	52.7	68.6	63.7	61.1	58.3	62.4	56.0	47.8	40.2	33.8
09:00 - 10:00	62.9	79.9	50.1	66.0	61.9	59.5	56.7	60.3	54.9	47.3	38.4	30.2
10:00 - 11:00	61.8	80.1	47.4	67.1	61.9	58.7	56.4	59.3	53.3	45.6	36.2	26.7
11:00 - 12:00	61.1	81.8	46.8	64.3	59.9	57.8	55.1	58.4	53.1	45.6	36.9	35.4
12:00 - 13:00	63.0	79.1	48.7	68.0	63.0	59.6	56.6	60.5	54.7	47.4	38.7	29.8
13:00 - 14:00	62.4	81.1	48.0	66.0	62.3	59.5	56.5	59.9	54.0	47.3	37.3	30.6
14:00 - 15:00	66.4	85.8	59.8	68.3	69.2	65.9	59.2	62.7	58.6	55.4	48.8	40.0
15:00 - 16:00	64.7	81.2	50.2	66.5	62.8	59.9	57.7	62.4	56.9	47.7	38.1	30.8
16:00 - 17:00	63.6	79.8	49.5	65.3	61.9	59.6	56.9	61.4	55.6	46.3	37.2	26.5
17:00 - 18:00	65.2	81.7	51.7	66.1	63.6	60.9	58.2	63.1	57.2	47.1	36.7	26.7
18:00 - 19:00	62.8	85.6	51.6	68.0	65.0	60.4	56.2	60.2	54.3	47.0	37.4	33.2
19:00 - 20:00	58.8	78.6	46.2	61.5	56.8	54.7	52.6	56.6	50.7	40.3	29.1	24.5
20:00 - 21:00	56.2	81.1	46.9	65.7	57.4	55.0	50.0	53.6	47.3	37.0	27.7	18.5
21:00 - 22:00	52.4	77.2	46.4	59.3	56.3	52.0	46.7	49.1	43.7	36.0	27.6	16.3
22:00 - 23:00	52.7	78.5	45.5	59.0	55.3	50.4	45.8	49.6	45.3	35.6	25.1	16.4

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	61.5	80.7	44.8	61.5	56.0	53.8	52.7	59.4	54.6	43.0	28.4	15.9
23:15 - 23:30	62.5	84.1	49.6	61.7	56.5	54.9	53.4	60.2	55.9	44.3	30.1	19.5
23:30 - 23:45	55.9	80.5	44.6	60.5	53.7	51.2	48.5	53.8	48.0	37.5	27.3	18.3
23:45 - 00:00	48.0	68.1	44.2	57.3	52.3	47.9	43.0	44.2	39.9	32.0	22.2	12.8
00:00 - 00:15	53.1	77.1	45.1	57.9	52.6	49.1	45.9	50.6	45.7	34.9	23.7	15.1
00:15 - 00:30	57.9	78.5	44.2	59.2	54.4	52.7	50.5	55.5	50.9	39.8	28.0	17.6
00:30 - 00:45	55.5	77.8	44.4	58.1	53.4	50.8	47.9	53.5	47.4	36.3	25.0	14.2
00:45 - 01:00	47.2	66.5	44.1	57.8	51.7	47.7	42.8	43.5	37.2	30.5	20.0	11.7
01:00 - 01:15	55.3	76.5	44.1	58.4	53.8	51.3	47.6	53.2	47.3	35.9	23.7	14.1
01:15 - 01:30	47.5	65.8	44.2	58.0	51.9	47.9	43.0	42.7	38.9	34.3	24.7	14.6
01:30 - 01:45	50.1	70.0	43.8	58.4	52.8	49.3	44.9	47.0	41.0	34.7	26.2	27.6
01:45 - 02:00	47.5	70.5	43.8	58.0	52.2	48.0	42.5	43.1	36.9	31.4	30.4	42.6
02:00 - 02:15	48.0	70.6	43.8	57.6	51.5	47.3	42.3	45.1	38.6	31.8	18.0	10.4
02:15 - 02:30	51.3	69.2	44.1	58.9	52.2	49.0	45.2	48.7	43.2	34.4	23.6	13.9
02:30 - 02:45	44.9	55.3	44.0	57.6	51.1	47.1	41.4	39.7	34.2	28.3	16.0	9.9
02:45 - 03:00	45.1	64.9	44.2	57.6	51.1	46.9	41.4	39.5	35.8	29.6	17.3	9.7
03:00 - 03:15	46.2	69.7	43.9	57.5	51.6	47.3	41.7	41.2	37.4	33.0	22.3	13.0
03:15 - 03:30	53.1	78.3	44.0	57.8	51.9	48.7	45.4	51.2	45.0	33.4	19.4	11.0
03:30 - 03:45	45.9	60.9	44.2	58.1	51.9	47.4	42.3	41.1	36.3	30.2	18.3	10.3
03:45 - 04:00	50.9	64.2	44.4	57.7	51.9	47.1	41.7	39.3	47.9	40.0	20.8	10.5
04:00 - 04:15	52.0	70.6	45.0	59.5	55.2	50.0	44.7	45.8	47.4	39.4	24.2	14.4
04:15 - 04:30	52.4	69.9	45.9	60.5	58.5	50.7	44.8	45.5	47.6	40.5	26.3	15.5
04:30 - 04:45	54.9	77.8	45.7	61.3	59.0	53.0	49.5	50.3	48.2	42.5	35.5	29.5
04:45 - 05:00	55.2	77.0	45.0	61.4	57.0	52.1	49.3	49.6	50.1	43.9	33.5	22.9
05:00 - 05:15	50.4	64.1	44.7	58.0	52.5	47.8	42.8	41.8	46.7	38.6	21.7	11.3
05:15 - 05:30	59.5	76.5	47.3	62.7	59.3	53.7	51.3	56.6	53.1	44.1	33.2	20.3
05:30 - 05:45	57.4	75.5	46.8	59.3	54.5	52.0	48.7	53.9	51.8	44.7	33.9	16.5
05:45 - 06:00	60.4	79.6	48.0	62.4	57.6	55.8	52.8	58.1	52.9	43.3	33.1	19.1
06:00 - 06:15	60.9	78.2	49.4	66.3	60.8	56.4	53.9	58.9	52.5	42.4	38.8	27.5
06:15 - 06:30	64.8	78.1	53.2	67.8	63.2	60.3	57.2	62.7	56.8	46.3	38.5	36.9
06:30 - 06:45	65.9	84.5	56.1	69.0	64.6	60.9	58.7	63.7	58.3	48.5	38.9	37.1
06:45 - 07:00	65.9	78.1	54.2	68.7	62.7	60.9	58.3	64.0	57.5	49.3	44.7	29.9

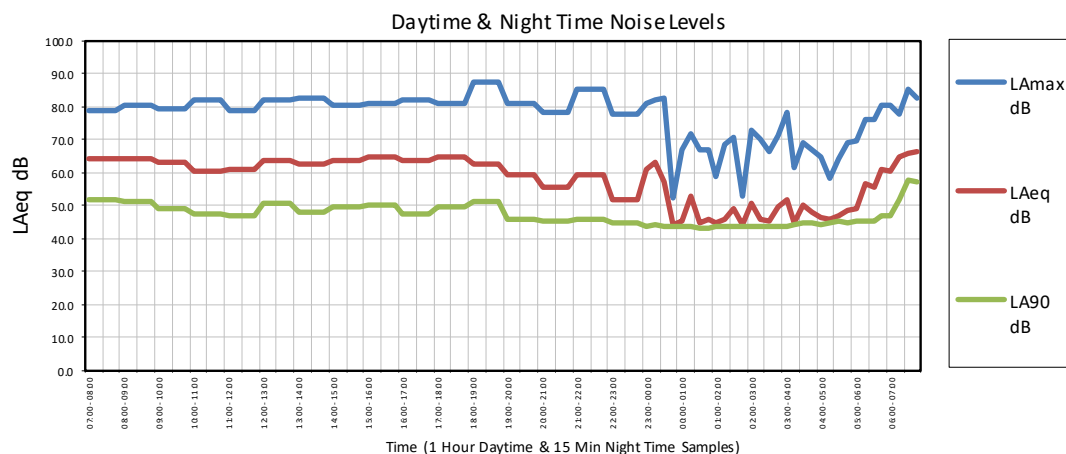


19.5 8th – 9th April 2025 Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	62.4	87.7	51.0	65.6	61.8	58.7	55.7	60.1	54.2	45.7	38.0	31.2
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	57.8	85.0	44.0	61.6	56.5	53.4	50.7	55.6	50.0	40.8	31.4	28.0

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	63.9	78.8	51.7	66.8	61.9	59.3	56.8	61.9	55.6	45.6	36.4	31.2
08:00 - 09:00	64.3	80.6	51.1	67.1	63.7	60.1	57.3	62.2	55.9	46.7	38.4	36.5
09:00 - 10:00	63.1	79.5	49.1	65.7	61.5	59.5	56.3	60.7	54.9	48.5	42.9	32.6
10:00 - 11:00	60.5	81.8	47.2	64.9	60.5	57.6	54.3	57.8	52.6	45.3	37.3	26.8
11:00 - 12:00	60.7	78.6	46.8	65.4	62.1	57.8	54.7	58.1	52.4	45.0	37.9	31.1
12:00 - 13:00	63.4	82.2	50.6	67.0	63.9	59.9	56.9	60.8	55.6	48.9	39.4	34.2
13:00 - 14:00	62.6	82.5	47.7	65.1	60.2	58.6	55.8	60.4	54.7	45.5	36.3	27.6
14:00 - 15:00	63.5	80.4	49.4	66.6	64.4	60.4	57.1	61.1	55.0	46.5	38.0	26.0
15:00 - 16:00	64.6	80.9	49.9	66.3	62.1	59.9	57.6	62.4	56.7	46.8	36.9	31.2
16:00 - 17:00	63.8	82.1	47.4	66.3	61.6	60.2	57.3	61.6	55.4	46.5	35.7	33.6
17:00 - 18:00	64.5	81.2	49.4	64.9	63.9	60.3	57.8	62.3	56.3	46.9	37.0	30.0
18:00 - 19:00	62.4	87.7	51.1	69.0	62.7	59.2	55.5	60.0	54.1	45.6	43.3	35.1
19:00 - 20:00	59.4	80.8	45.5	64.3	62.0	58.3	52.9	56.8	50.7	41.5	32.2	22.7
20:00 - 21:00	55.7	78.0	45.3	60.3	57.3	52.9	49.2	53.5	46.7	37.4	27.8	21.9
21:00 - 22:00	59.1	85.4	45.5	60.0	55.4	53.7	52.1	57.1	50.8	43.6	30.3	18.3
22:00 - 23:00	51.7	77.6	44.4	58.4	52.7	49.8	45.4	49.2	43.4	33.9	24.7	13.5

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	60.8	80.8	43.8	61.4	56.8	52.9	51.9	58.7	53.8	41.6	27.0	14.9
23:15 - 23:30	63.0	81.9	44.1	61.8	56.7	55.4	54.2	60.8	56.4	44.5	30.4	18.5
23:30 - 23:45	57.0	82.6	43.7	58.1	52.9	50.8	49.1	55.3	48.6	36.6	22.4	12.4
23:45 - 00:00	44.2	52.3	43.5	57.4	51.1	46.7	40.5	38.8	32.7	28.6	16.3	9.9
00:00 - 00:15	45.3	66.6	43.8	57.3	51.4	47.1	41.5	39.6	36.1	31.7	22.1	11.6
00:15 - 00:30	52.6	71.7	43.8	58.8	53.5	50.4	46.6	50.1	43.9	34.6	26.2	15.7
00:30 - 00:45	44.5	66.8	43.3	57.3	50.7	46.4	40.3	38.6	35.6	30.9	18.3	9.9
00:45 - 01:00	45.9	66.6	43.2	57.5	50.7	46.8	41.3	40.8	37.0	33.0	25.2	16.5
01:00 - 01:15	44.5	58.7	43.5	57.3	50.7	46.9	41.4	39.1	32.9	27.9	15.9	9.7
01:15 - 01:30	45.8	68.6	43.3	57.1	50.9	47.1	41.7	41.0	37.2	29.3	17.1	10.3
01:30 - 01:45	49.1	70.6	43.3	59.3	52.2	47.9	43.6	46.0	40.6	32.5	24.5	14.2
01:45 - 02:00	44.2	52.8	43.5	57.4	50.8	46.6	40.5	38.9	32.5	28.4	16.0	9.7
02:00 - 02:15	50.7	72.8	43.4	58.1	51.6	49.4	44.5	48.4	40.8	31.3	22.4	11.8
02:15 - 02:30	45.6	70.1	43.4	57.9	50.7	46.4	40.5	38.9	38.6	33.8	22.4	10.8
02:30 - 02:45	45.0	66.5	43.6	57.5	50.9	46.6	40.9	39.4	35.5	30.7	24.2	13.7
02:45 - 03:00	49.3	71.3	43.8	59.0	52.5	48.4	43.3	44.7	43.2	35.3	27.6	17.3
03:00 - 03:15	51.9	78.1	43.8	58.2	51.9	49.2	46.0	49.7	42.5	33.2	24.5	15.5
03:15 - 03:30	44.7	61.4	44.0	57.8	50.8	46.9	41.2	39.4	33.7	29.1	17.1	9.6
03:30 - 03:45	50.1	68.8	44.7	59.4	52.7	48.8	44.8	46.9	41.5	33.9	24.8	14.0
03:45 - 04:00	47.8	67.0	44.5	58.0	51.3	47.6	43.3	43.5	39.5	32.2	22.4	13.2
04:00 - 04:15	46.5	64.7	44.2	58.1	51.0	47.2	41.5	41.3	38.0	35.8	26.0	13.2
04:15 - 04:30	45.7	58.4	44.6	58.1	50.8	46.9	42.2	40.5	35.8	30.4	21.5	9.8
04:30 - 04:45	46.9	64.4	45.2	58.5	51.7	47.6	43.0	41.6	38.0	33.4	24.7	12.6
04:45 - 05:00	48.4	69.1	44.9	58.1	51.5	47.9	44.2	43.2	41.4	35.2	23.6	12.8
05:00 - 05:15	49.1	69.5	45.1	58.7	52.7	48.1	43.7	45.3	41.2	35.1	27.0	17.3
05:15 - 05:30	56.8	76.0	45.2	59.2	54.4	51.7	49.5	54.8	48.5	38.8	27.3	16.6
05:30 - 05:45	55.5	76.3	45.4	59.6	54.0	51.5	48.3	53.2	47.8	37.7	27.4	26.9
05:45 - 06:00	61.1	80.6	46.6	64.3	59.8	57.2	54.2	59.0	52.8	44.4	37.4	33.2
06:00 - 06:15	60.5	80.2	47.0	61.8	56.9	54.8	52.9	58.6	52.5	40.8	28.4	26.6
06:15 - 06:30	64.4	77.8	51.7	66.0	61.9	59.1	56.9	62.4	56.5	46.7	38.0	36.3
06:30 - 06:45	66.0	85.0	57.5	68.8	64.2	61.6	58.9	63.6	58.4	50.0	39.8	40.1
06:45 - 07:00	66.5	82.4	57.4	70.6	65.7	62.3	59.7	64.3	58.1	49.8	41.6	33.2

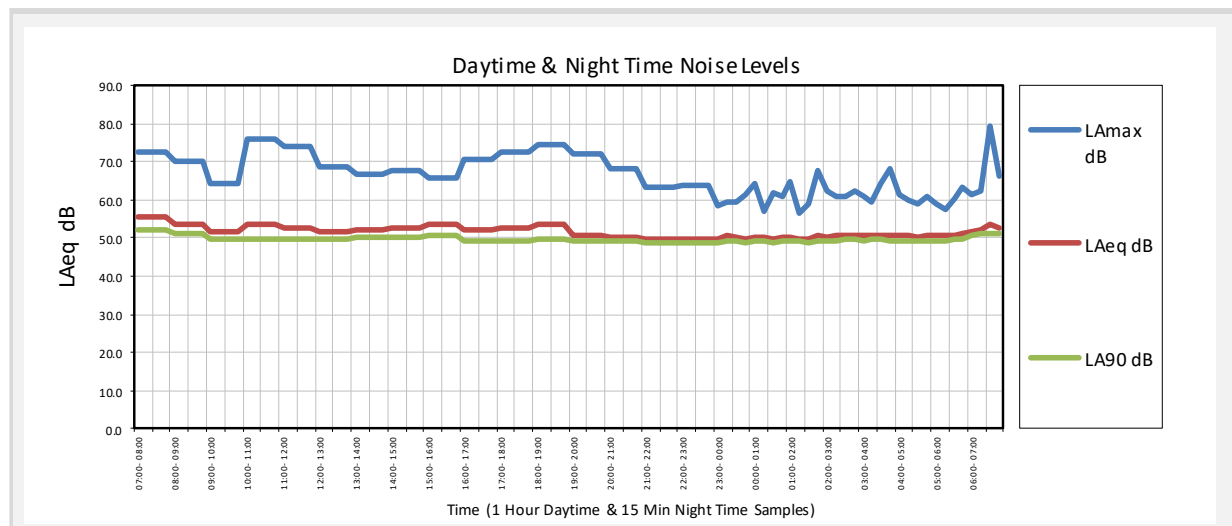


19.6 4th – 5th April 2025 Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	52.5	75.8	50.0	65.8	59.6	54.1	48.5	46.5	43.3	40.6	32.5	15.1
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	50.7	79.1	49.0	67.1	59.9	53.9	45.7	42.9	40.6	38.3	30.5	18.6

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	55.6	72.5	52.0	66.1	60.1	54.8	50.5	49.6	47.2	47.5	37.1	19.1
08:00 - 09:00	53.6	69.8	51.0	64.5	58.4	55.0	50.5	47.8	44.5	42.3	34.3	15.4
09:00 - 10:00	51.8	64.2	50.0	64.3	58.1	53.7	48.0	45.9	42.7	39.0	31.1	14.6
10:00 - 11:00	53.6	75.8	50.0	64.8	58.7	53.5	49.0	47.9	46.1	43.2	35.4	14.8
11:00 - 12:00	52.8	73.7	50.0	65.2	58.6	53.3	48.2	46.7	44.4	43.3	36.1	17.5
12:00 - 13:00	51.8	68.8	50.0	65.1	59.1	53.3	48.1	46.1	43.0	38.2	30.5	14.4
13:00 - 14:00	51.9	66.7	50.0	65.1	59.5	53.8	48.4	45.9	42.8	37.5	30.2	13.6
14:00 - 15:00	52.5	67.8	50.0	66.3	60.0	54.6	49.3	46.1	42.8	38.5	31.5	16.1
15:00 - 16:00	53.5	65.8	51.0	66.4	59.3	55.7	51.5	46.3	43.0	38.4	31.4	13.6
16:00 - 17:00	52.0	70.4	49.0	66.5	59.9	53.1	47.4	46.0	43.3	40.1	33.7	14.5
17:00 - 18:00	52.6	72.4	49.0	66.6	60.8	54.1	46.9	47.4	42.9	39.5	29.0	12.5
18:00 - 19:00	53.8	74.5	50.0	66.7	60.6	55.6	50.4	49.1	42.6	35.8	29.3	13.9
19:00 - 20:00	50.5	72.0	49.0	66.0	59.5	54.0	45.5	43.5	40.0	36.5	31.6	15.2
20:00 - 21:00	50.4	68.0	49.0	66.1	59.6	53.6	45.7	43.4	39.7	34.7	27.3	13.8
21:00 - 22:00	49.7	63.5	49.0	66.3	60.1	52.6	45.1	42.2	38.8	34.4	27.1	12.7
22:00 - 23:00	49.7	64.0	49.0	66.5	59.8	52.8	45.1	42.0	39.3	35.0	28.1	13.1

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	49.8	58.3	49.0	66.7	60.3	53.0	44.9	41.7	39.0	34.8	27.5	14.5
23:15 - 23:30	50.8	59.4	49.0	67.1	60.5	53.2	45.7	44.6	40.4	35.2	28.0	17.0
23:30 - 23:45	50.0	59.5	49.0	66.7	59.7	53.2	45.2	42.5	39.4	35.0	27.8	17.0
23:45 - 00:00	49.8	61.5	49.0	66.7	59.8	53.1	45.0	41.7	39.3	35.2	28.0	16.0
00:00 - 00:15	50.3	64.1	49.0	67.4	59.9	53.8	45.7	41.9	39.8	35.5	29.2	19.2
00:15 - 00:30	50.1	56.9	49.0	66.8	59.8	53.7	45.4	41.9	39.4	35.3	28.2	15.1
00:30 - 00:45	49.7	62.0	49.0	66.6	59.5	53.1	45.0	41.3	39.6	35.3	28.8	16.7
00:45 - 01:00	50.0	61.0	49.0	66.7	59.4	53.4	45.8	41.9	39.4	35.5	28.5	15.8
01:00 - 01:15	50.2	64.9	49.0	66.7	59.4	53.9	45.6	42.2	39.6	35.5	28.3	16.1
01:15 - 01:30	49.9	56.4	49.0	66.7	59.9	53.6	45.2	41.3	39.3	35.5	28.3	14.0
01:30 - 01:45	49.7	58.7	49.0	66.8	59.4	53.6	44.7	41.0	39.2	35.5	28.4	17.7
01:45 - 02:00	50.5	67.6	49.0	67.4	59.7	53.9	46.4	42.0	39.7	36.8	30.1	20.4
02:00 - 02:15	50.1	62.1	49.0	67.0	59.8	54.0	45.5	41.2	39.4	35.7	28.8	17.3
02:15 - 02:30	50.7	60.7	49.0	67.4	60.3	54.6	46.0	41.8	39.8	36.2	29.4	21.4
02:30 - 02:45	50.8	60.7	50.0	68.0	60.3	55.0	46.0	41.5	39.5	35.9	29.2	22.1
02:45 - 03:00	50.7	62.4	50.0	67.5	60.3	54.5	46.1	41.8	39.8	36.1	29.2	20.7
03:00 - 03:15	50.4	60.6	49.0	67.3	60.2	54.4	45.4	41.4	39.6	36.1	29.0	19.4
03:15 - 03:30	50.7	59.3	50.0	67.4	60.2	54.3	46.1	41.9	39.9	38.6	30.7	20.1
03:30 - 03:45	50.7	64.3	50.0	67.5	60.3	54.4	45.5	41.4	40.1	39.0	30.5	20.2
03:45 - 04:00	50.6	68.2	49.0	67.2	60.3	53.8	45.7	41.8	40.2	39.0	30.8	19.1
04:00 - 04:15	50.8	61.3	49.0	67.1	59.6	53.7	45.6	41.2	40.8	41.7	32.8	17.9
04:15 - 04:30	50.7	60.0	49.0	66.6	59.0	53.1	45.4	41.4	42.7	40.6	30.7	14.4
04:30 - 04:45	50.0	58.7	49.0	66.5	59.3	53.0	44.4	40.9	41.1	38.6	29.8	13.7
04:45 - 05:00	50.6	60.7	49.0	66.7	59.6	53.4	45.4	41.5	40.5	41.4	32.4	14.8
05:00 - 05:15	50.5	58.7	49.0	66.6	59.9	53.1	44.7	41.3	40.6	42.0	32.5	13.3
05:15 - 05:30	50.5	57.3	49.0	66.5	59.7	52.9	45.1	41.6	39.9	42.1	33.4	13.7
05:30 - 05:45	50.8	60.2	50.0	67.3	59.6	54.2	45.6	42.5	40.7	38.8	32.9	19.6
05:45 - 06:00	51.2	63.4	50.0	67.6	59.8	54.3	46.2	43.1	42.2	37.9	30.1	21.6
06:00 - 06:15	51.8	61.1	50.0	67.5	61.0	55.0	45.8	43.2	41.2	40.4	34.6	21.1
06:15 - 06:30	52.3	62.2	51.0	67.3	60.9	55.1	46.7	45.4	41.8	40.4	31.7	20.4
06:30 - 06:45	53.5	79.1	51.0	67.4	60.3	54.7	47.1	49.0	44.8	39.2	31.0	20.1
06:45 - 07:00	52.6	66.3	51.0	67.4	59.9	54.8	47.5	47.4	43.0	37.5	30.6	20.5

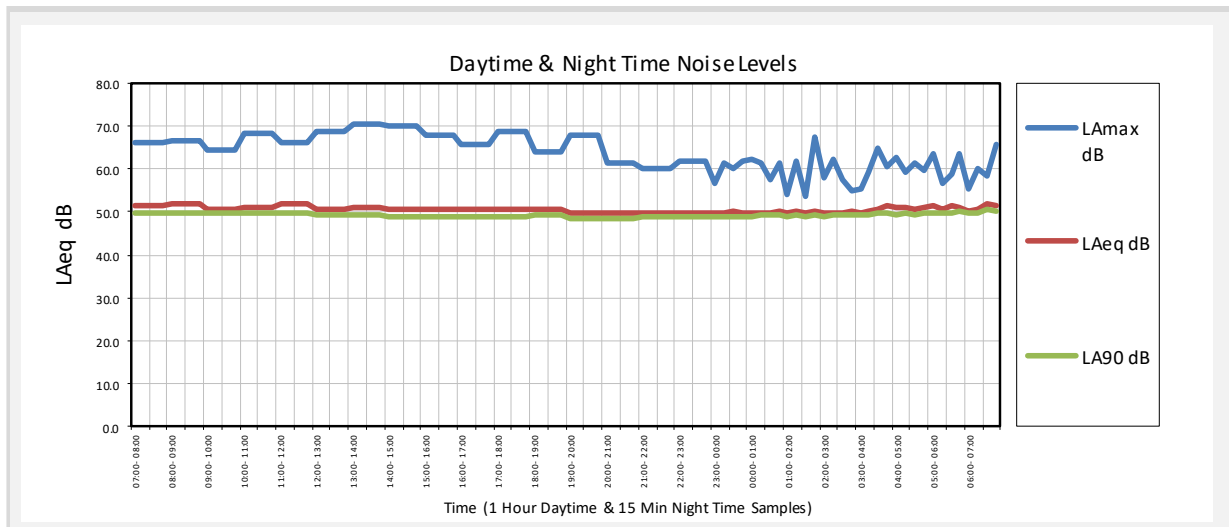


19.7 5th – 6th April 2025 Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	50.7	70.7	49.0	66.7	58.9	53.6	46.0	44.3	40.7	36.6	28.7	15.1
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	50.4	67.4	49.0	66.5	59.1	53.4	45.4	42.2	41.2	38.8	30.4	12.5

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	514	66.1	50.0	67.1	59.1	54.3	46.8	44.8	41.3	38.6	30.6	20.0
08:00 - 09:00	519	66.4	50.0	66.6	59.5	54.1	47.1	46.0	42.0	39.8	30.4	14.3
09:00 - 10:00	50.8	64.3	50.0	66.5	58.5	53.9	46.0	44.1	40.5	38.1	30.9	13.7
10:00 - 11:00	512	68.4	50.0	67.0	58.6	53.7	46.2	45.0	418	37.8	30.4	16.2
11:00 - 12:00	519	66.0	50.0	67.4	59.5	54.4	46.5	46.2	417	38.2	29.0	16.7
12:00 - 13:00	50.5	68.5	49.0	67.2	58.7	53.8	45.7	43.4	40.1	35.9	30.3	15.3
13:00 - 14:00	512	70.7	50.0	67.2	60.1	54.2	46.8	44.2	39.8	35.0	27.3	15.3
14:00 - 15:00	50.5	70.2	49.0	67.4	59.1	53.4	46.0	43.8	40.0	35.1	27.5	16.6
15:00 - 16:00	50.8	67.8	49.0	67.0	58.4	53.3	45.9	44.7	416	35.9	27.1	14.1
16:00 - 17:00	50.6	65.9	49.0	66.7	58.3	52.8	46.0	44.6	417	36.7	28.6	12.9
17:00 - 18:00	50.6	68.6	49.0	66.3	58.2	53.4	45.5	44.6	40.9	36.1	26.5	13.1
18:00 - 19:00	50.6	64.1	49.0	66.1	58.7	53.8	45.7	44.5	40.3	34.8	27.2	13.1
19:00 - 20:00	49.9	67.7	49.0	65.9	58.5	52.8	45.2	43.3	39.9	35.4	29.4	13.3
20:00 - 21:00	49.7	61.5	49.0	66.0	58.6	52.7	45.2	42.4	39.7	35.2	27.1	12.2
21:00 - 22:00	49.8	60.1	49.0	66.2	58.9	53.3	45.6	42.3	38.9	33.6	26.2	14.1
22:00 - 23:00	49.6	618	49.0	66.3	59.0	53.3	45.3	415	38.8	33.6	26.4	13.0

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	49.7	56.5	49.0	66.4	59.2	53.3	44.9	419	39.2	33.9	25.8	12.2
23:15 - 23:30	49.8	615	49.0	66.4	58.9	53.5	45.5	415	39.4	34.3	26.8	11.9
23:30 - 23:45	50.0	60.1	49.0	66.3	59.1	53.7	45.7	42.0	39.0	34.4	26.3	11.7
23:45 - 00:00	49.7	617	49.0	66.3	59.0	53.2	45.3	413	39.6	35.0	27.6	13.2
00:00 - 00:15	49.7	62.3	49.0	66.4	58.3	53.7	45.4	413	38.9	34.9	26.9	11.9
00:15 - 00:30	49.9	616	49.0	66.3	58.4	53.8	45.5	418	39.9	35.2	27.8	11.8
00:30 - 00:45	49.8	57.7	49.0	66.4	59.0	53.8	45.2	416	39.2	35.1	27.1	11.8
00:45 - 01:00	50.1	616	49.0	66.5	59.4	53.6	45.6	417	39.7	35.3	28.1	13.7
01:00 - 01:15	49.7	54.0	49.0	66.5	59.1	53.4	45.0	416	39.1	35.0	27.2	11.8
01:15 - 01:30	50.0	619	49.0	66.4	59.7	53.4	45.4	416	39.8	35.5	28.2	11.9
01:30 - 01:45	49.6	53.6	49.0	66.4	59.6	53.0	44.6	411	39.0	35.3	27.3	11.8
01:45 - 02:00	50.0	67.4	49.0	66.6	59.3	53.4	45.3	417	40.0	36.9	29.9	14.1
02:00 - 02:15	49.6	58.0	49.0	66.3	59.5	53.1	44.8	414	39.2	35.6	27.7	13.1
02:15 - 02:30	49.8	62.1	49.0	66.3	59.4	53.0	45.1	414	39.8	35.9	28.5	12.1
02:30 - 02:45	49.7	57.6	49.0	66.6	59.1	53.3	45.0	415	39.3	35.7	27.8	12.5
02:45 - 03:00	50.1	54.9	50.0	66.6	59.8	53.5	45.6	418	39.6	35.9	28.0	11.9
03:00 - 03:15	49.9	55.2	49.0	66.3	59.3	53.3	44.7	412	39.5	37.4	29.1	12.0
03:15 - 03:30	50.3	59.3	50.0	66.5	58.8	53.5	45.4	419	40.5	39.5	30.3	12.1
03:30 - 03:45	50.7	65.0	50.0	66.5	58.9	53.3	45.1	413	414	42.3	32.2	13.1
03:45 - 04:00	513	60.6	50.0	66.5	59.0	53.3	45.4	416	44.0	42.5	32.1	12.3
04:00 - 04:15	510	62.9	50.0	66.6	58.4	53.5	45.1	413	43.8	40.8	31.0	12.3
04:15 - 04:30	50.9	59.2	50.0	66.7	58.6	53.4	45.3	416	43.5	40.1	32.2	12.8
04:30 - 04:45	50.8	612	49.0	66.4	58.8	53.5	45.3	413	42.2	414	312	12.2
04:45 - 05:00	510	59.5	50.0	66.5	58.8	53.5	45.6	417	43.1	40.9	31.3	12.4
05:00 - 05:15	514	63.6	50.0	66.5	59.3	53.3	45.2	416	43.6	43.1	32.8	14.0
05:15 - 05:30	50.7	56.8	50.0	66.5	59.4	53.2	45.6	42.0	411	413	32.5	12.4
05:30 - 05:45	514	58.7	50.0	66.4	59.2	53.4	45.6	42.0	44.0	418	34.3	12.5
05:45 - 06:00	512	63.6	50.0	66.5	59.0	54.0	45.8	42.9	43.5	39.7	34.1	12.5
06:00 - 06:15	50.3	55.5	50.0	66.5	59.3	53.2	45.2	42.3	40.8	38.6	32.1	12.3
06:15 - 06:30	50.8	59.9	50.0	66.5	59.2	53.3	45.8	43.9	413	38.5	312	12.4
06:30 - 06:45	519	58.6	51.0	66.7	58.6	53.8	46.9	46.6	42.4	39.9	32.7	12.7
06:45 - 07:00	514	65.7	50.0	66.6	58.8	53.5	46.4	45.8	419	38.1	310	12.3

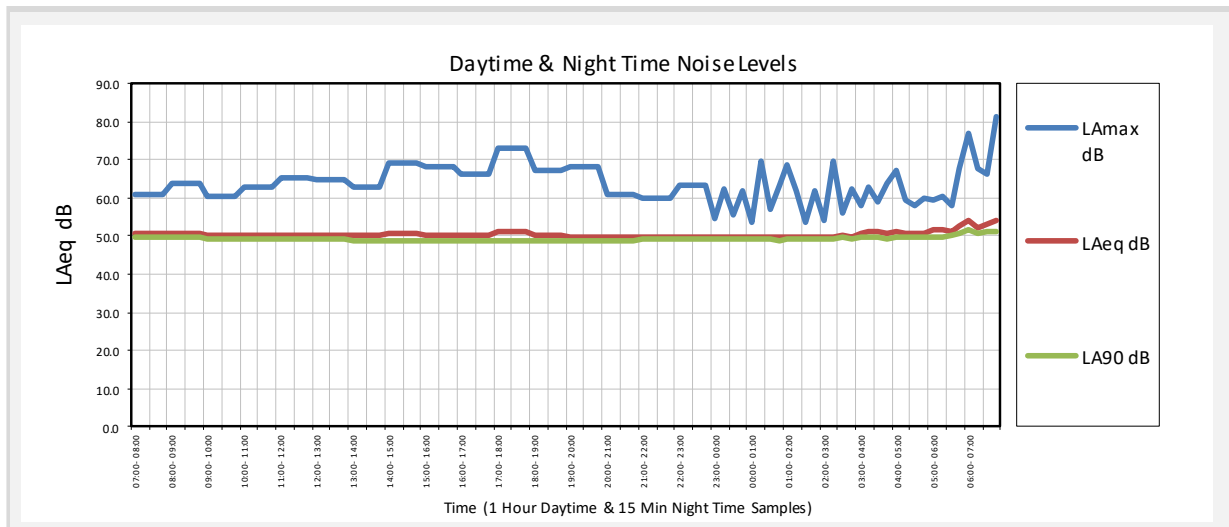


19.8 6th – 7th April 2025 Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	50.2	73.2	49.0	66.6	58.7	53.3	45.8	43.2	40.1	35.8	28.2	12.4
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	50.8	81.4	49.0	66.2	58.6	53.5	46.1	43.5	41.8	39.2	30.2	14.2

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	50.8	60.7	50.0	66.3	59.2	53.6	46.3	43.7	40.6	38.4	30.6	12.2
08:00 - 09:00	50.8	63.5	50.0	66.3	58.3	53.8	46.4	44.3	40.7	37.5	29.9	12.4
09:00 - 10:00	50.1	60.2	49.0	66.4	57.8	53.2	45.8	43.0	39.9	37.3	29.4	12.1
10:00 - 11:00	50.0	62.9	49.0	66.6	57.6	53.0	45.6	42.7	40.4	36.6	28.6	12.0
11:00 - 12:00	50.3	65.2	49.0	66.9	57.7	53.2	46.2	43.6	40.0	35.9	28.4	12.9
12:00 - 13:00	50.3	64.9	49.0	66.9	58.9	53.0	45.7	43.4	40.1	36.0	28.4	12.4
13:00 - 14:00	50.1	62.6	49.0	67.0	58.7	53.0	45.7	43.3	40.1	34.9	27.2	12.4
14:00 - 15:00	50.5	69.2	49.0	67.1	59.0	53.2	46.7	43.9	39.9	35.0	27.2	12.0
15:00 - 16:00	50.1	68.3	49.0	66.9	58.5	52.8	45.6	43.5	40.1	34.8	26.6	11.9
16:00 - 17:00	50.1	66.4	49.0	66.9	59.5	53.3	45.5	42.6	39.7	34.3	26.3	12.0
17:00 - 18:00	50.9	73.2	49.0	66.1	59.0	54.3	46.2	43.8	41.9	35.4	27.8	12.2
18:00 - 19:00	50.2	67.0	48.0	66.5	58.9	52.7	45.6	44.1	40.3	34.6	27.8	13.0
19:00 - 20:00	49.8	67.9	48.0	66.1	59.0	52.6	45.5	42.3	39.9	34.7	29.5	13.3
20:00 - 21:00	49.8	60.8	49.0	66.2	59.3	53.0	45.3	42.3	39.5	35.2	27.6	13.1
21:00 - 22:00	49.7	60.0	49.0	66.4	59.1	53.4	45.4	41.7	39.1	34.2	26.4	11.8
22:00 - 23:00	49.9	63.2	49.0	66.3	59.0	53.6	45.4	42.1	39.5	34.8	27.1	12.4

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	49.8	54.6	49.0	66.3	59.0	53.5	45.4	41.6	39.2	34.7	26.7	11.8
23:15 - 23:30	49.6	62.3	49.0	66.2	58.9	53.4	44.8	41.3	39.5	34.9	27.4	11.8
23:30 - 23:45	49.8	55.7	49.0	66.2	58.7	53.3	45.8	41.8	39.2	34.9	26.8	11.8
23:45 - 00:00	49.6	61.9	49.0	66.0	59.0	53.3	44.7	41.3	39.5	35.1	27.4	11.8
00:00 - 00:15	49.6	53.4	49.0	66.1	58.5	53.0	45.3	41.6	39.3	35.3	27.1	11.8
00:15 - 00:30	49.8	69.8	49.0	66.3	58.4	53.4	45.1	41.4	39.9	37.2	29.9	14.1
00:30 - 00:45	49.6	57.1	49.0	66.1	58.2	53.1	45.1	41.6	39.3	35.4	27.3	12.8
00:45 - 01:00	49.5	63.2	49.0	66.1	57.9	53.2	44.6	41.2	39.7	35.3	27.9	11.9
01:00 - 01:15	49.9	68.8	49.0	66.3	58.5	53.4	45.5	41.7	39.6	36.9	29.3	13.6
01:15 - 01:30	49.5	61.9	49.0	66.0	58.6	53.2	44.7	41.1	39.5	35.2	27.8	11.8
01:30 - 01:45	49.8	53.7	49.0	66.1	58.9	53.2	45.6	41.7	39.4	35.2	27.5	11.8
01:45 - 02:00	49.6	61.9	49.0	66.1	57.8	53.6	44.9	41.5	39.5	35.2	27.9	11.9
02:00 - 02:15	49.7	53.8	49.0	65.9	57.8	53.3	45.5	41.9	39.6	35.4	27.6	11.9
02:15 - 02:30	49.9	69.7	49.0	66.0	58.1	53.2	44.9	41.8	40.1	37.6	31.6	16.8
02:30 - 02:45	50.0	56.2	50.0	66.0	58.4	53.6	45.6	42.2	39.5	35.5	27.8	11.9
02:45 - 03:00	49.8	62.3	49.0	66.1	58.8	53.4	44.7	41.5	40.5	35.7	28.5	12.0
03:00 - 03:15	50.8	57.8	50.0	66.3	59.0	53.4	45.7	41.9	43.4	37.2	28.1	12.0
03:15 - 03:30	51.1	62.8	50.0	66.3	58.3	53.5	44.9	41.6	44.5	40.1	30.6	12.2
03:30 - 03:45	51.1	58.8	50.0	66.3	58.0	53.5	45.6	42.1	43.8	40.7	31.0	12.2
03:45 - 04:00	50.6	63.9	49.0	66.3	58.1	53.3	44.8	41.5	42.0	41.6	32.0	13.8
04:00 - 04:15	51.0	67.1	50.0	66.3	58.0	53.5	46.1	43.1	41.9	41.1	31.1	12.5
04:15 - 04:30	50.4	59.3	50.0	66.2	57.9	53.7	45.4	42.3	40.2	40.1	30.5	12.2
04:30 - 04:45	50.6	57.8	50.0	66.3	58.0	53.4	46.0	42.7	40.0	40.5	31.5	12.3
04:45 - 05:00	50.7	60.0	50.0	66.3	57.9	53.5	45.0	42.1	42.7	39.9	30.0	12.2
05:00 - 05:15	51.4	59.5	50.0	66.4	58.1	53.5	45.9	42.7	42.9	42.9	32.8	12.4
05:15 - 05:30	51.4	60.3	50.0	66.4	58.8	53.3	45.3	43.4	44.2	41.5	32.2	12.8
05:30 - 05:45	51.2	58.1	50.0	66.5	59.3	53.3	46.2	43.5	43.3	38.5	30.7	12.5
05:45 - 06:00	52.5	67.6	51.0	66.9	59.1	53.9	46.9	46.3	44.7	41.2	33.1	12.8
06:00 - 06:15	53.8	76.7	52.0	66.1	58.7	54.0	50.7	48.8	44.1	42.0	31.5	12.3
06:15 - 06:30	52.1	67.4	51.0	66.1	59.6	53.6	48.2	46.2	42.0	39.4	32.0	19.3
06:30 - 06:45	53.0	66.0	51.0	65.9	60.0	54.1	48.8	47.7	44.3	40.2	33.3	22.9
06:45 - 07:00	53.8	81.4	51.0	66.1	59.6	54.0	48.7	48.2	45.0	45.1	32.6	13.5

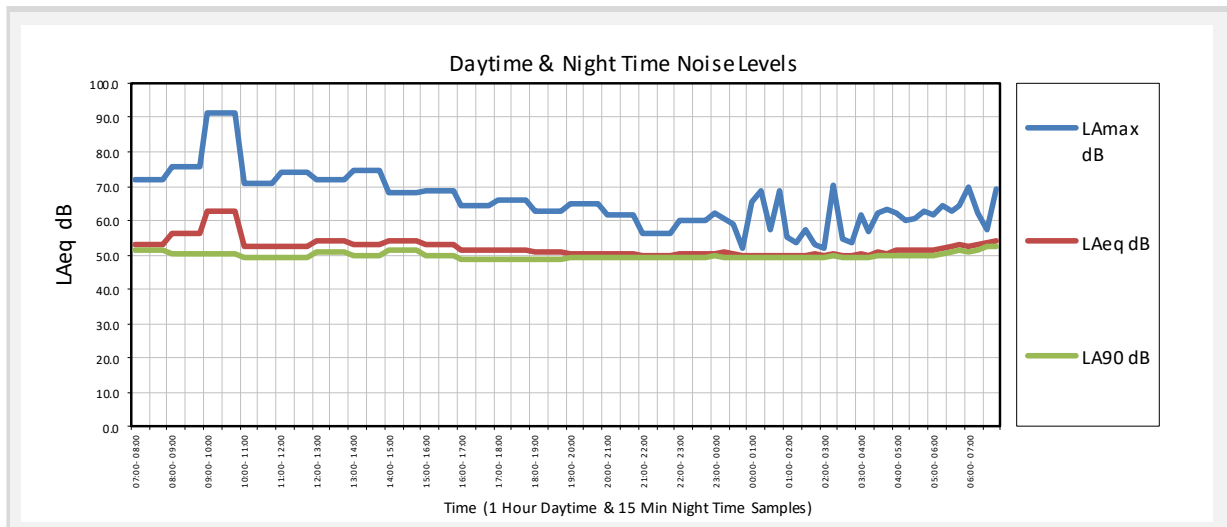


19.9 7th – 8th April 2025 Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	54.5	91.2	49.0	65.9	59.3	54.2	49.1	47.7	47.1	46.1	39.4	24.0
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	51.1	70.5	50.0	66.2	59.1	53.7	46.6	43.6	41.9	39.0	30.7	14.5

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	53.3	71.7	51.0	65.4	59.9	54.6	49.6	47.6	44.3	40.6	33.5	32.8
08:00 - 09:00	56.4	75.8	50.0	65.7	59.9	55.4	50.9	49.4	48.6	49.3	44.1	28.4
09:00 - 10:00	62.5	91.2	50.0	65.2	60.0	56.5	52.1	55.2	56.7	56.5	49.6	30.5
10:00 - 11:00	52.5	70.6	49.0	64.5	58.3	53.0	47.9	47.5	44.5	40.1	31.6	13.2
11:00 - 12:00	52.7	74.1	49.0	65.2	59.0	54.4	49.8	46.2	44.0	40.0	33.8	17.3
12:00 - 13:00	53.8	71.8	51.0	67.6	62.7	55.1	50.6	47.1	44.9	40.8	33.0	14.2
13:00 - 14:00	52.8	74.6	50.0	64.4	59.1	54.7	51.2	45.6	43.3	39.4	32.1	13.8
14:00 - 15:00	54.2	68.0	51.0	66.0	59.2	54.6	51.3	48.2	45.4	43.4	36.5	15.6
15:00 - 16:00	53.2	68.8	50.0	66.0	58.0	53.7	50.8	47.0	44.6	41.1	33.7	15.6
16:00 - 17:00	51.2	64.3	49.0	66.3	57.3	52.9	46.9	45.6	42.1	37.4	30.5	12.8
17:00 - 18:00	51.2	66.1	49.0	66.4	58.4	53.7	46.7	45.3	41.6	36.1	28.6	12.5
18:00 - 19:00	50.7	62.7	49.0	66.2	58.3	53.5	46.3	43.7	41.1	36.2	27.9	12.7
19:00 - 20:00	50.6	64.9	49.0	66.0	58.9	53.2	45.7	42.6	42.0	38.4	30.0	12.8
20:00 - 21:00	50.1	61.9	49.0	66.4	58.6	53.7	46.2	42.0	38.9	36.0	28.2	12.4
21:00 - 22:00	49.7	56.0	49.0	66.3	58.0	53.4	45.3	41.7	39.2	35.2	27.7	12.2
22:00 - 23:00	50.1	59.9	49.0	66.3	59.4	53.7	45.4	41.7	39.5	35.6	28.3	12.1

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	50.3	62.0	50.0	66.5	59.0	53.7	46.2	42.2	39.9	35.8	29.0	13.4
23:15 - 23:30	50.8	60.8	50.0	66.2	58.5	53.8	46.4	44.4	40.3	35.5	27.8	11.9
23:30 - 23:45	50.2	58.7	50.0	66.3	58.5	53.9	46.0	42.3	39.4	35.4	27.8	11.9
23:45 - 00:00	49.7	52.0	49.0	66.1	57.9	53.8	45.1	41.2	38.8	35.1	27.4	11.8
00:00 - 00:15	50.0	65.5	49.0	66.0	58.1	53.5	45.5	41.9	39.3	35.7	28.3	12.7
00:15 - 00:30	50.0	68.9	49.0	66.1	58.1	53.5	45.5	41.5	39.5	37.1	30.1	16.2
00:30 - 00:45	50.0	57.1	49.0	66.1	57.9	53.7	45.3	42.6	39.3	35.3	27.8	11.9
00:45 - 01:00	50.0	68.5	49.0	66.1	57.9	53.5	45.7	41.5	39.4	37.0	30.0	14.5
01:00 - 01:15	49.7	55.4	49.0	66.1	58.1	53.6	44.8	41.5	38.9	35.2	27.6	11.9
01:15 - 01:30	49.9	53.5	49.0	66.2	57.9	53.6	45.9	41.9	39.0	35.4	27.8	12.0
01:30 - 01:45	49.7	57.5	49.0	66.1	59.2	53.5	44.7	41.1	38.8	35.3	27.8	13.0
01:45 - 02:00	50.2	53.1	50.0	66.1	59.7	53.4	46.3	41.9	39.3	35.4	27.9	12.0
02:00 - 02:15	49.9	52.2	49.0	66.1	59.3	53.7	45.0	41.6	38.9	35.2	27.7	12.0
02:15 - 02:30	50.3	70.5	50.0	66.2	59.8	53.5	45.8	42.0	39.7	37.3	30.5	14.6
02:30 - 02:45	49.8	54.6	49.0	66.2	58.7	53.5	45.2	41.4	39.0	35.2	27.6	12.0
02:45 - 03:00	49.9	53.7	49.0	66.3	58.9	53.6	45.3	41.6	39.1	35.3	27.7	12.0
03:00 - 03:15	50.1	61.9	49.0	66.3	58.6	53.4	46.1	41.9	39.6	35.5	28.5	12.0
03:15 - 03:30	50.0	56.6	49.0	66.5	59.6	53.5	44.8	41.0	39.1	37.5	29.2	12.1
03:30 - 03:45	50.8	62.1	50.0	66.5	59.9	53.6	46.4	42.3	40.5	38.9	31.0	12.2
03:45 - 04:00	50.4	63.4	50.0	66.6	59.1	53.6	45.2	41.5	40.3	40.1	30.8	12.9
04:00 - 04:15	51.5	62.3	50.0	66.6	59.8	53.5	46.7	42.1	43.9	40.4	31.3	12.3
04:15 - 04:30	51.2	59.9	50.0	66.6	60.1	53.6	45.2	41.4	44.2	39.4	29.9	12.2
04:30 - 04:45	51.2	60.6	50.0	66.6	59.2	53.8	45.8	41.9	43.2	40.2	30.3	12.2
04:45 - 05:00	51.3	62.7	50.0	66.6	59.2	53.7	45.8	42.1	42.7	41.9	31.6	12.3
05:00 - 05:15	51.3	61.6	50.0	66.5	59.0	53.5	45.0	41.6	43.2	42.6	32.0	12.3
05:15 - 05:30	51.9	64.3	50.0	66.5	59.6	53.5	46.6	43.3	43.7	43.0	33.0	14.6
05:30 - 05:45	52.5	62.7	51.0	66.5	59.8	53.8	46.5	44.1	46.0	42.5	32.9	12.6
05:45 - 06:00	53.1	64.1	51.0	66.4	59.3	53.8	47.9	46.6	46.1	41.7	34.8	12.7
06:00 - 06:15	52.7	69.7	51.0	65.7	60.1	53.7	48.4	46.6	44.4	40.4	32.6	16.7
06:15 - 06:30	52.8	62.3	51.0	65.6	60.0	53.8	49.6	47.1	43.2	40.4	33.7	13.3
06:30 - 06:45	53.8	57.4	53.0	65.6	59.1	54.9	51.0	48.6	43.7	40.3	30.7	12.4
06:45 - 07:00	54.2	69.3	52.0	65.8	60.5	54.3	50.7	49.3	44.8	42.8	36.0	24.6

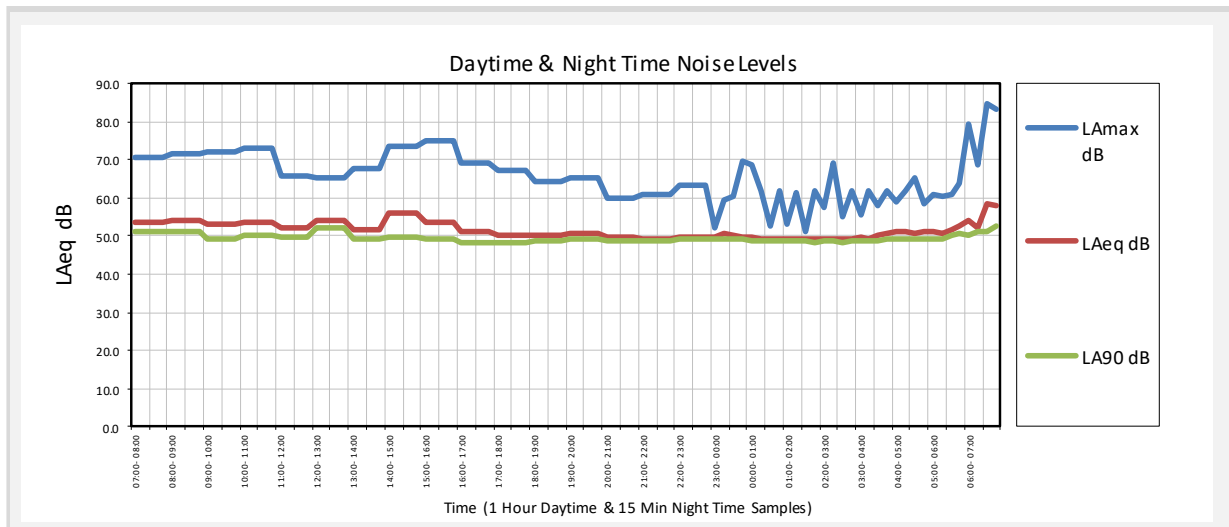


19.10 8th – 9th April 2025 Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	52.5	75.1	49.0	65.6	59.0	53.0	48.5	46.2	44.2	41.6	34.0	16.7
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	51.6	84.8	49.0	66.3	58.1	52.4	46.8	44.6	43.1	42.2	34.6	15.4

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	53.3	70.4	51.0	65.6	60.2	54.0	49.3	47.9	44.1	42.2	34.2	22.4
08:00 - 09:00	54.0	71.6	51.0	65.0	59.9	54.5	50.4	47.9	45.3	44.1	36.4	16.0
09:00 - 10:00	53.3	71.9	49.0	64.3	59.0	53.3	48.7	47.5	44.8	43.6	38.6	18.5
10:00 - 11:00	53.6	73.0	50.0	64.7	58.6	53.2	49.1	47.8	46.1	43.3	35.7	15.4
11:00 - 12:00	52.1	65.9	50.0	64.7	58.1	52.7	48.3	45.7	43.9	42.0	34.2	15.9
12:00 - 13:00	53.9	65.4	52.0	64.7	57.6	53.0	49.8	47.0	46.2	46.1	36.8	17.6
13:00 - 14:00	51.8	67.5	49.0	64.7	58.2	53.2	48.7	45.8	42.9	39.0	31.9	14.2
14:00 - 15:00	55.9	73.4	49.0	65.9	60.3	53.7	52.0	48.8	50.2	45.0	36.7	21.2
15:00 - 16:00	53.8	75.1	49.0	66.8	59.7	54.2	50.5	48.1	45.0	41.9	35.0	16.6
16:00 - 17:00	51.1	69.2	48.0	66.6	58.5	52.2	47.1	45.5	41.5	37.7	30.8	13.5
17:00 - 18:00	50.3	67.1	48.0	66.2	59.1	51.6	45.8	45.0	40.7	35.4	27.9	12.3
18:00 - 19:00	50.2	64.1	49.0	66.0	58.9	52.0	45.9	44.0	40.2	36.4	28.2	12.2
19:00 - 20:00	50.5	65.0	49.0	65.7	59.5	52.6	46.4	43.9	39.9	38.2	29.2	12.1
20:00 - 21:00	49.6	59.8	49.0	65.8	59.0	51.6	45.3	42.3	40.3	35.9	28.2	12.4
21:00 - 22:00	49.4	61.0	49.0	65.7	58.6	51.8	45.5	42.4	39.1	35.3	27.9	11.9
22:00 - 23:00	49.7	63.5	49.0	66.0	58.2	52.8	45.6	41.8	39.3	35.6	28.3	12.9

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	49.8	52.3	49.0	66.1	59.3	52.9	45.0	41.1	39.2	35.3	27.9	11.9
23:15 - 23:30	50.7	59.4	49.0	66.3	59.3	53.0	45.5	44.4	40.6	35.5	27.9	11.8
23:30 - 23:45	50.1	60.3	49.0	66.1	59.2	53.0	45.1	42.7	39.6	35.4	27.9	11.9
23:45 - 00:00	49.7	69.8	49.0	66.1	58.8	52.6	44.7	40.9	39.5	37.2	29.8	13.4
00:00 - 00:15	49.6	68.7	49.0	66.1	57.8	52.5	45.0	41.4	39.4	36.9	30.0	14.0
00:15 - 00:30	49.2	61.6	49.0	66.0	56.6	51.9	45.6	41.5	39.3	35.4	28.5	11.9
00:30 - 00:45	49.0	52.4	49.0	66.1	57.4	51.6	45.3	41.4	39.0	35.1	27.4	11.8
00:45 - 01:00	49.4	61.6	49.0	66.3	57.9	51.7	45.7	41.5	39.7	35.5	28.7	11.9
01:00 - 01:15	49.0	52.9	49.0	66.2	58.5	51.5	45.1	41.0	38.8	35.1	27.5	11.8
01:15 - 01:30	49.3	61.1	49.0	66.1	58.1	51.7	45.5	41.3	39.4	35.4	28.4	11.9
01:30 - 01:45	49.0	51.3	49.0	66.0	57.4	51.7	45.3	41.3	38.9	35.1	27.6	11.8
01:45 - 02:00	49.0	61.6	48.0	66.1	57.6	51.5	45.2	41.1	39.2	35.2	28.2	11.9
02:00 - 02:15	49.4	57.3	49.0	66.2	58.3	51.8	45.4	41.6	39.5	35.4	28.0	12.8
02:15 - 02:30	49.3	68.9	49.0	66.3	58.2	51.7	45.3	41.3	39.1	36.9	30.1	15.5
02:30 - 02:45	49.0	54.8	48.0	66.2	57.0	51.6	45.2	41.2	38.9	35.2	27.7	11.9
02:45 - 03:00	49.1	61.8	49.0	66.2	57.0	51.4	45.4	41.4	39.6	36.1	28.8	12.0
03:00 - 03:15	49.5	55.6	49.0	66.3	57.2	52.1	46.0	41.4	38.9	37.4	28.7	11.9
03:15 - 03:30	49.4	61.9	49.0	66.3	57.1	51.5	45.6	41.6	39.9	38.0	30.0	12.1
03:30 - 03:45	50.1	57.8	49.0	66.4	57.3	51.5	45.3	41.5	42.5	40.3	30.2	12.1
03:45 - 04:00	50.8	61.6	49.0	66.4	58.4	51.8	45.6	41.8	43.7	41.1	31.7	12.3
04:00 - 04:15	51.0	58.8	49.0	66.4	57.0	52.4	46.5	42.2	42.3	43.0	32.5	12.3
04:15 - 04:30	51.1	61.6	49.0	66.4	58.0	52.0	45.7	41.7	43.5	42.8	32.3	12.3
04:30 - 04:45	50.7	65.4	49.0	66.5	57.8	52.3	46.0	42.0	41.3	42.6	32.4	13.3
04:45 - 05:00	50.9	58.4	49.0	66.6	58.0	51.7	45.6	42.0	43.2	42.5	31.9	12.3
05:00 - 05:15	50.9	60.6	49.0	66.5	57.7	51.9	45.4	42.3	42.5	43.2	32.7	12.5
05:15 - 05:30	50.8	60.3	49.0	66.5	57.5	51.9	46.1	43.5	40.6	42.8	32.3	13.7
05:30 - 05:45	51.7	60.8	50.0	66.5	58.4	52.0	47.1	44.6	43.6	42.2	34.9	13.5
05:45 - 06:00	52.7	63.5	51.0	66.7	58.0	52.5	47.7	46.5	45.4	42.2	35.0	13.0
06:00 - 06:15	53.9	79.5	50.0	66.8	57.9	52.5	48.2	46.2	44.2	48.2	41.8	23.0
06:15 - 06:30	52.3	68.7	51.0	66.1	57.9	52.7	48.8	47.0	43.4	40.9	34.3	13.7
06:30 - 06:45	58.4	84.8	51.0	66.7	59.7	55.5	52.1	52.8	51.7	50.4	42.9	20.9
06:45 - 07:00	57.9	83.1	52.0	66.2	60.1	56.2	52.6	52.5	50.1	50.1	43.7	23.9



20 APPENDIX B - L_Amax 1 MINUTE DATA

20.1.1 World Health Organisations 'Guidelines For Community Noise'.

The WHO Guideline for Community Noise suggests that levels of L_AF_{max} 45 dB should not exceed more than 10 events within any one night time period 23:00 – 07:00. Therefore, calculations and assessments are to be made against this criteria to ascertain if the proposed glazing and ventilation specification will be suitable to achieve that of the assessed 11th highest recorded L_AF_{max} dB level.

20.2 Results

Therefore, the following tabulated results from the worst night have been calculated and demonstrate compliance with the requirements of PROPG. The following 1 minute data is detailed below together with the number above or below the L_Amax 80 & 85 dB threshold.

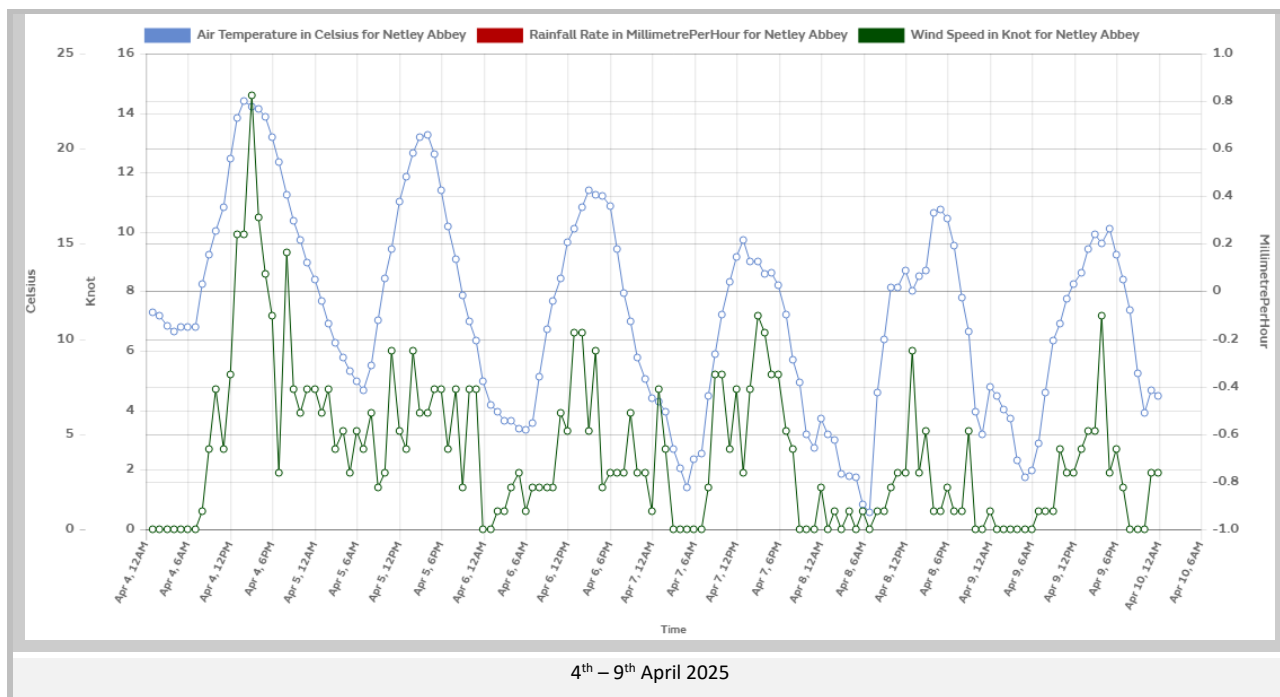
20.2.1 Professional Practice Guidance on Planning & Noise.

L _A F _{max} dB	82.1	80.7	81.9	84.5	85.0	L _A F _{max} dB	82.1	80.7	81.9	84.5	85.0	L _A F _{max} dB	82.1	80.7	81.9	84.5	85.0
Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5	Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5	Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5
23:00:59	51.0	47.5	46.0	48.8	46.3	23:49:59	53.1	46.8	47.2	64.7	45.8	00:38:59	46.6	47.4	51.6	45.9	48.8
23:01:59	49.9	48.2	50.4	57.2	51.7	23:50:59	53.7	62.8	56.0	47.4	52.0	00:39:59	68.1	51.2	65.3	45.0	51.9
23:02:59	53.9	66.7	52.3	50.4	50.3	23:51:59	75.0	72.3	53.4	62.3	46.4	00:40:59	47.7	67.9	45.7	54.9	44.8
23:03:59	47.8	51.3	45.8	53.3	49.5	23:52:59	61.7	56.0	55.9	65.7	51.1	00:41:59	47.2	47.4	45.5	77.8	44.6
23:04:59	49.4	50.1	49.2	68.0	45.7	23:53:59	48.7	52.0	64.0	45.9	50.5	00:42:59	74.3	55.2	45.4	46.7	45.1
23:05:59	46.4	61.7	73.7	59.8	53.8	23:54:59	51.0	45.2	57.4	45.5	49.0	00:43:59	58.7	66.4	46.7	46.0	44.7
23:06:59	66.4	55.3	52.4	66.9	47.9	23:55:59	56.9	54.6	55.5	45.5	45.3	00:44:59	50.1	50.3	45.1	49.1	44.9
23:07:59	64.2	52.6	45.1	55.0	46.3	23:56:59	62.2	67.5	48.8	56.5	46.0	00:45:59	56.5	50.2	46.0	58.1	44.6
23:08:59	50.2	50.6	47.8	55.2	46.7	23:57:59	50.9	50.7	46.9	68.1	52.3	00:46:59	52.4	50.0	46.0	46.7	44.7
23:09:59	48.7	46.9	49.8	53.7	47.2	23:58:59	48.0	64.9	46.6	56.9	52.2	00:47:59	48.3	51.8	53.0	47.1	59.8
23:10:59	75.4	49.3	47.3	50.9	49.4	23:59:59	57.7	49.4	46.8	51.5	45.1	00:48:59	56.9	49.8	46.5	48.3	62.7
23:11:59	49.0	45.3	56.4	45.5	49.9	00:00:59	45.5	45.2	46.6	55.1	45.2	00:49:59	47.6	47.3	45.5	46.5	65.8
23:12:59	48.6	50.0	48.7	47.9	46.8	00:01:59	50.7	54.6	48.1	48.4	56.0	00:50:59	70.1	48.0	45.3	46.4	44.7
23:13:59	47.9	48.7	65.8	80.7	78.9	00:02:59	50.7	47.8	72.9	48.0	62.2	00:51:59	53.2	47.6	45.5	51.5	51.2
23:14:59	82.1	64.7	48.3	79.8	80.8	00:03:59	48.9	50.4	50.5	53.7	49.3	00:52:59	48.7	47.1	45.3	66.5	49.4
23:15:59	81.3	65.4	62.0	77.5	77.8	00:04:59	54.8	56.4	55.3	53.0	47.0	00:53:59	67.8	53.1	45.8	54.3	51.5
23:16:59	78.0	50.4	46.6	84.1	76.3	00:05:59	55.2	72.2	56.3	49.9	50.5	00:54:59	49.7	52.7	50.5	52.5	44.9
23:17:59	49.3	45.4	45.7	55.2	81.9	00:06:59	71.1	53.9	49.8	70.0	62.3	00:55:59	46.0	51.1	47.1	51.6	45.8
23:18:59	68.7	45.4	45.2	75.8	76.8	00:07:59	55.7	49.4	52.2	58.4	52.2	00:56:59	52.2	53.9	64.0	54.2	45.9
23:19:59	58.9	47.7	45.4	77.8	74.1	00:08:59	51.4	57.0	47.0	50.3	55.0	00:57:59	63.9	48.4	55.4	46.3	48.6
23:20:59	75.6	48.6	45.8	78.6	46.3	00:09:59	56.5	53.0	70.7	51.6	48.9	00:58:59	55.2	49.1	51.4	52.1	45.3
23:21:59	67.1	50.4	74.1	49.8	67.9	00:10:59	51.2	45.3	51.2	77.1	54.2	00:59:59	52.4	73.4	50.1	58.8	66.6
23:22:59	55.0	45.0	63.6	48.5	45.6	00:11:59	50.7	49.3	50.3	63.4	53.9	01:00:59	51.5	47.7	46.0	51.9	58.7
23:23:59	73.3	45.0	53.7	51.0	45.1	00:12:59	66.4	53.4	51.7	54.2	45.8	01:01:59	74.7	52.7	45.3	72.2	45.8
23:24:59	50.8	51.3	58.5	52.6	48.7	00:13:59	52.8	51.7	64.6	46.1	49.5	01:02:59	47.4	62.6	45.3	54.6	46.1
23:25:59	75.2	44.8	56.0	46.0	68.5	00:14:59	47.3	46.9	47.1	45.9	66.6	01:03:59	51.0	74.5	45.2	73.8	47.8
23:26:59	77.4	61.1	66.7	47.1	47.2	00:15:59	75.5	51.5	46.9	50.9	48.9	01:04:59	49.4	47.8	45.6	76.5	45.2
23:27:59	51.9	58.0	62.1	75.1	80.7	00:16:59	49.1	49.6	50.7	46.1	45.8	01:05:59	76.7	51.8	73.0	47.2	45.8
23:28:59	67.2	71.0	62.5	73.8	46.5	00:17:59	60.8	48.3	46.9	47.1	62.1	01:06:59	54.0	50.7	66.1	48.9	54.3
23:29:59	72.8	66.3	73.5	61.9	45.6	00:18:59	70.2	49.7	51.4	55.7	66.8	01:07:59	50.6	46.5	45.1	50.0	53.3
23:30:59	50.6	52.1	76.4	80.5	82.6	00:19:59	46.3	59.7	55.2	45.5	45.2	01:08:59	52.2	46.9	48.2	51.6	47.2
23:31:59	82.1	49.3	51.4	55.5	73.7	00:20:59	50.4	65.8	47.4	46.0	71.5	01:09:59	63.2	65.2	47.1	44.9	52.8
23:32:59	73.2	53.3	45.4	46.5	45.9	00:21:59	53.7	48.0	61.3	64.2	47.0	01:10:59	47.2	53.5	47.0	58.4	45.0
23:33:59	56.5	50.7	67.9	47.1	45.4	00:22:59	50.7	76.9	59.8	48.8	47.6	01:11:59	73.4	46.3	52.0	62.1	47.2
23:34:59	51.8	53.6	54.2	52.1	45.7	00:23:59	53.0	50.4	72.7	72.8	67.0	01:12:59	46.8	51.2	45.0	69.5	50.5
23:35:59	75.7	46.4	76.7	46.6	59.9	00:24:59	58.7	71.7	62.6	51.7	51.6	01:13:59	54.5	46.4	45.2	45.3	44.7
23:36:59	49.1	50.1	49.1	47.2	51.3	00:25:59	63.1	48.1	46.7	51.5	54.2	01:14:59	47.7	47.3	44.9	45.0	44.8
23:37:59	54.9	69.2	49.2	63.6	47.5	00:26:59	53.7	50.7	65.9	57.4	52.0	01:15:59	47.0	46.8	45.1	47.7	45.6
23:38:59	48.0	53.4	67.1	51.1	47.5	00:27:59	50.6	46.5	45.6	78.5	45.8	01:16:59	47.4	52.8	51.1	47.6	45.2
23:39:59	48.6	51.2	62.6	55.5	46.0	00:28:59	53.2	66.0	45.3	77.2	71.7	01:17:59	51.3	63.2	45.5	47.8	63.5
23:40:59	51.2	46.6	67.3	46.2	46.8	00:29:59	71.2	67.0	72.0	76.7	54.2	01:18:59	52.0	66.1	45.4	48.1	68.6
23:41:59	52.5	51.5	51.6	46.1	48.2	00:30:59	47.0	66.3	65.4	46.0	50.5	01:19:59	50.3	51.9	45.4	48.1	46.4
23:42:59	47.8	52.4	47.9	47.3	48.0	00:31:59	49.9	65.1	71.5	46.9	45.3	01:20:59	50.0	53.1	45.2	45.8	46.4
23:43:59	48.7	45.1	46.7	64.7	45.5	00:32:59	47.3	70.9	51.1	49.8	44.9	01:21:59	47.5	63.8	46.1	65.1	45.3
23:44:59	51.6	67.6	46.7	70.9	45.4	00:33:59	54.3	60.6	71.0	64.6	46.6	01:22:59	50.9	68.7	46.8	49.9	45.0
23:45:59	58.2	68.8	46.8	46.8	48.4	00:34:59	64.3	65.7	54.6	51.1	51.2	01:23:59	52.8	48.2	58.5	48.6	44.8

23:46:59	51.2	45.6	46.9	46.1	44.9	00:35:59	65.5	65.4	45.7	74.7	53.3	01:24:59	48.7	50.2	45.6	52.7	44.7
23:47:59	52.6	52.5	46.8	49.7	45.6	00:36:59	55.1	62.9	54.8	71.9	66.8	01:25:59	45.0	46.0	46.0	50.0	45.6
23:48:59	74.5	44.7	76.9	45.7	44.5	00:37:59	46.6	58.0	46.0	73.9	44.6	01:26:59	46.2	47.7	45.2	60.4	49.0
LaFmax dB	82.1	80.7	81.9	84.5	85.0	LaFmax dB	82.1	80.7	81.9	84.5	85.0	LaFmax dB	82.1	80.7	81.9	84.5	85.0
Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5	Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5	Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5
01:27:59	46.5	48.2	48.2	53.5	45.2	02:38:59	49.9	46.1	64.4	47.8	45.0	03:49:59	57.5	62.8	66.8	63.1	48.9
01:28:59	70.4	67.7	47.6	65.8	44.9	02:39:59	62.8	47.0	63.2	45.6	45.3	03:50:59	58.3	53.2	58.0	62.0	48.7
01:29:59	67.3	48.9	64.6	46.9	44.7	02:40:59	48.4	45.7	45.2	45.7	54.7	03:51:59	55.7	59.5	53.2	61.2	48.8
01:30:59	45.5	48.4	67.7	51.3	46.0	02:41:59	51.9	46.2	45.1	45.5	66.5	03:52:59	55.0	59.7	64.7	64.2	67.0
01:31:59	48.2	48.8	45.2	49.0	44.7	02:42:59	67.0	45.9	46.2	45.3	49.2	03:53:59	65.7	65.5	46.9	63.4	46.6
01:32:59	46.2	52.7	45.1	59.0	44.8	02:43:59	60.6	48.6	45.4	45.6	47.1	03:54:59	51.1	65.6	46.5	60.7	46.1
01:33:59	68.6	46.8	51.4	45.3	45.5	02:44:59	52.5	45.8	45.1	49.7	51.1	03:55:59	57.7	66.5	45.7	62.0	47.1
01:34:59	47.6	52.7	75.8	45.2	45.7	02:45:59	57.5	48.8	44.9	48.8	66.4	03:56:59	56.1	63.7	61.8	60.3	46.3
01:35:59	47.6	50.2	45.3	45.3	44.9	02:46:59	53.5	48.7	45.0	46.2	71.3	03:57:59	63.6	63.0	60.1	54.8	47.3
01:36:59	61.8	50.3	46.7	45.8	45.9	02:47:59	56.7	45.3	47.5	46.2	57.9	03:58:59	57.4	62.3	60.7	45.7	51.7
01:37:59	49.8	49.2	46.1	45.1	63.7	02:48:59	53.1	45.5	45.3	46.4	57.7	03:59:59	61.8	62.6	58.0	47.3	47.5
01:38:59	56.4	54.8	62.3	45.4	68.1	02:49:59	65.1	48.1	47.7	47.2	67.1	04:00:59	54.8	65.2	63.3	47.6	46.9
01:39:59	66.4	53.4	56.6	56.5	47.5	02:50:59	56.0	51.6	59.7	47.5	61.5	04:01:59	53.9	62.5	64.2	60.9	46.0
01:40:59	52.3	45.2	47.8	52.1	44.8	02:51:59	65.7	49.9	61.6	56.1	51.5	04:02:59	53.2	66.6	46.8	62.1	45.8
01:41:59	56.0	69.5	45.4	57.7	54.5	02:52:59	58.6	65.0	63.9	54.3	64.6	04:03:59	55.5	62.4	47.0	59.1	47.5
01:42:59	46.1	46.2	45.2	65.5	70.6	02:53:59	64.5	76.1	64.2	64.9	48.2	04:04:59	58.5	63.6	46.1	57.8	64.7
01:43:59	70.5	48.8	45.1	70.0	46.7	02:54:59	54.6	58.4	63.9	50.7	52.9	04:05:59	56.2	63.0	46.9	57.2	45.8
01:44:59	47.3	45.1	45.7	45.2	46.6	02:55:59	52.5	51.4	61.4	45.5	56.1	04:06:59	55.2	63.1	50.4	63.0	45.9
01:45:59	45.5	45.1	45.2	47.1	45.6	02:56:59	50.7	47.7	62.5	46.8	65.0	04:07:59	57.0	63.4	47.5	61.5	47.6
01:46:59	45.1	45.7	45.6	46.5	45.6	02:57:59	54.1	46.0	61.2	45.2	64.9	04:08:59	57.2	65.0	51.6	57.8	48.1
01:47:59	46.8	54.9	45.5	45.2	45.7	02:58:59	56.5	46.2	60.3	48.4	45.6	04:09:59	56.2	63.5	62.6	65.0	54.5
01:48:59	47.5	65.9	47.1	46.0	46.5	02:59:59	54.3	51.1	61.7	45.2	47.6	04:10:59	56.2	46.8	58.1	66.6	57.5
01:49:59	55.3	45.1	45.2	45.8	45.9	03:00:59	54.6	50.1	59.2	45.5	45.2	04:11:59	65.1	61.9	64.3	70.6	56.5
01:50:59	68.3	47.3	45.7	46.7	45.8	03:01:59	57.7	45.3	60.6	55.8	44.9	04:12:59	56.1	63.7	63.5	61.4	55.6
01:51:59	65.4	46.8	48.3	46.1	45.4	03:02:59	64.7	45.0	61.0	69.7	57.5	04:13:59	67.1	62.4	58.2	60.9	59.4
01:52:59	54.1	44.8	51.2	46.3	51.3	03:03:59	50.0	49.1	61.6	45.9	78.1	04:14:59	56.6	62.1	60.1	61.9	49.7
01:53:59	51.9	45.0	45.4	46.0	46.9	03:04:59	50.0	53.2	67.1	45.7	66.1	04:15:59	46.2	67.3	53.5	60.6	55.5
01:54:59	49.8	48.9	50.9	46.5	51.4	03:05:59	61.5	45.9	61.8	45.5	54.5	04:16:59	46.0	62.1	47.9	59.8	58.4
01:55:59	52.2	47.1	56.5	47.5	47.4	03:06:59	67.8	46.0	60.2	45.3	55.8	04:17:59	56.1	63.6	54.2	60.4	47.7
01:56:59	47.2	56.0	46.7	45.7	46.0	03:07:59	60.8	46.3	65.2	45.5	45.0	04:18:59	55.3	63.2	46.9	64.6	47.4
01:57:59	46.5	45.6	61.4	70.5	52.8	03:08:59	56.6	48.8	74.1	45.7	45.4	04:19:59	53.4	62.6	53.6	62.6	52.7
01:58:59	46.3	45.1	66.5	52.6	46.3	03:09:59	55.3	56.5	62.3	45.6	46.8	04:20:59	46.2	61.9	56.6	62.8	52.1
01:59:59	56.5	69.5	76.2	45.2	50.0	03:10:59	56.2	62.0	61.4	46.1	50.3	04:21:59	47.2	63.4	53.6	69.9	46.9
02:00:59	69.4	55.4	49.7	44.9	46.5	03:11:59	53.5	62.1	61.7	59.9	47.1	04:22:59	66.8	61.9	57.5	65.8	53.1
02:01:59	47.0	45.4	45.8	44.7	72.8	03:12:59	64.6	62.2	60.8	65.6	47.2	04:23:59	48.1	61.1	54.6	62.8	49.3
02:02:59	49.5	70.8	46.1	45.1	55.5	03:13:59	65.9	63.3	68.4	45.2	46.4	04:24:59	62.0	63.8	78.8	53.1	46.1
02:03:59	46.0	61.7	45.5	45.1	53.0	03:14:59	49.3	61.7	62.5	45.5	45.5	04:25:59	66.2	60.9	49.4	49.1	48.5
02:04:59	45.9	73.4	45.2	45.0	63.9	03:15:59	58.6	60.5	63.0	45.5	46.1	04:26:59	53.8	51.1	63.2	47.8	48.4
02:05:59	45.9	66.6	45.3	44.9	53.2	03:16:59	53.7	55.9	60.8	45.8	45.8	04:27:59	52.4	51.3	79.2	50.9	47.9
02:06:59	45.8	50.9	51.9	46.1	51.5	03:17:59	53.9	72.8	62.8	47.3	45.2	04:28:59	68.2	56.4	47.2	60.7	48.4
02:07:59	49.7	47.0	47.6	46.4	44.7	03:18:59	53.8	62.9	62.3	51.8	46.5	04:29:59	51.3	46.0	46.4	64.7	48.9
02:08:59	46.6	45.2	51.6	52.8	44.8	03:19:59	52.0	61.8	62.0	45.5	45.9	04:30:59	67.3	49.0	56.0	64.8	62.3
02:09:59	46.3	45.0	46.0	47.1	46.8	03:20:59	50.5	62.9	64.2	45.9	48.2	04:31:59	51.6	63.6	62.2	56.2	48.1
02:10:59	46.6	45.2	45.4	46.0	46.4	03:21:59	55.7	60.9	62.4	45.8	46.6	04:32:59	51.8	59.4	51.9	56.1	51.7
02:11:59	52.0	45.2	47.0	70.6	46.1	03:22:59	51.2	62.7	63.0	45.9	46.0	04:33:59	67.7	59.7	50.7	51.2	53.6
02:12:59	47.1	45.3	45.2	55.4	45.5	03:23:59	52.3	62.7	55.9	48.5	47.5	04:34:59	48.7	57.4	46.5	54.4	49.0
02:13:59	63.1	44.8	45.5	46.1	44.9	03:24:59	52.7	61.5	47.5	46.0	46.8	04:35:59	51.9	62.6	48.2	58.1	64.3
02:14:59	66.5	46.3	75.3	50.0	44.7	03:25:59	62.9	53.5	49.0	45.8	47.0	04:36:59	54.2	59.9	56.5	72.3	50.8
02:15:59	46.1	68.9	62.8	65.8	45.6	03:26:59	57.6	48.5	47.0	52.4	61.4	04:37:59	49.9	63.2	46.2	63.1	54.0
02:16:59	52.9	55.1	72.4	65.9	70.1	03:27:59	56.1	54.6	59.1	46.0	46.6	04:38:59	47.8	56.4	51.2	58.1	64.4
02:17:59	64.8	49.8	50.9	65.4	45.7	03:28:59	47.9	61.8	61.0	49.4	46.2	04:39:59	48.2	51.3	51.7	57.6	49.6
02:18:59	54.1	64.8	61.9	69.2	46.5	03:29:59	50.1	63.7	61.2	78.3	52.2	04:40:59	49.1	73.7	52.8	58.3	47.2
02:19:59	52.2	48.1	53.6	49.6	67.2	03:30:59	55.1	65.0	61.7	47.5	49.7	04:41:59	51.5	51.4	54.0	61.4	49.5
02:20:59	50.5	47.2	46.7	47.8	51.5	03:31:59	58.1	61.8	61.5	46.8	67.6	04:42:59	48.3	58.3	53.7	53.5	60.3
02:21:59	50.0	47.2	47.3	54.1	47.1	03:32:59	56.9	62.8	60.4	47.3	52.2	04:43:59	47.5	58.3	63.9	77.8	61.8
02:22:59	50.1	48.4	67.3	50.9	46.2	03:33:59	56.4	63.8	59.1	46.9	47.8	04:44:59	47.5	67.0	52.5	54.2	47.7
02:23:59	47.2	68.5	59.0	45.8	51.6	03:34:59	57.0	63.8	62.7	45.6	48.1	04:45:59	52.0	59.8	56.8	60.0	54.4
02:24:59	53.1	52.1	46.6	69.0	45.7	03:35:59	57.2	60.3	60.4	51.3	46.2	04:46:59	51.7	59.2	60.8	57.3	56.1
02:25:59	49.3	47.5	46.5	50.9	46.4	03:36:59	56.7	61.0	60.7	60.9	46.2	04:47:59	50.4	52.6	56.8	77.0	55.0
02:26:59	48.9	46.0	47.6	51.3	47.9	03:37:59	58.5	64.6	60.4	45.6	46.3	04:48:59	51.5	46.5	56.6	59.5	49.5
02:27:59	50.0	45.0	48.0	51.6	44.5	03:38:59	58.4	62.9	60.3	46.6	63.6	04:49:59	52.7	46.3	55.0	67.5	49.0
02:28:59	49.5	44.9	47.5	51.7	62.7	03:39:59	57.4	59.3	62.0	46.1	59.9	04:50:59	47.5	58.9	57.0	63.8	49.9
02:29:59	48.3	45.4	47.7	52.2	47.7	03:40:59	58.3	57.4	61.0	54.8	66.9	04:51:59	50.5	61.0	66.1	62.2	51.8
02:30:59	46.7	46.3	46.9	47.1	47.8	03:41:59	58.6	61.2	57								

02:35:59	47.3	51.4	46.8	50.9	46.2	03:46:59	59.5	64.3	58.7	62.2	47.1	04:57:59	45.9	46.0	70.9	62.4	48.0
02:36:59	49.3	47.1	46.7	49.0	45.8	03:47:59	57.5	65.1	59.7	63.3	52.0	04:58:59	65.3	46.9	63.8	62.3	51.0
02:37:59	50.8	65.4	56.0	55.3	45.0	03:48:59	56.9	64.9	59.5	63.3	48.1	04:59:59	47.4	50.1	47.0	69.9	50.2
LAfmax dB	##	54.9	45.5	45.2	45.7	LAfmax dB	56.5	##	##	##	45.6	LAfmax dB	56.2	63.5	##	65.0	54.5
Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5	Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5	Time	Fig 1	Fig 2	Fig 3	Fig 4	Fig 5
05:00:59	49.0	47.1	47.1	62.0	69.5	05:40:59	50.8	60.1	67.2	63.2	53.2	06:20:59	75.8	68.7	72.9	78.1	74.8
05:01:59	52.5	45.9	47.6	60.4	47.2	05:41:59	50.2	63.2	73.7	75.5	70.1	06:21:59	69.4	63.9	71.7	73.6	76.5
05:02:59	50.7	46.7	50.0	60.4	48.1	05:42:59	57.1	62.6	72.0	72.0	70.1	06:22:59	65.1	67.0	70.7	77.0	74.4
05:03:59	47.7	58.3	53.9	61.7	50.5	05:43:59	58.5	61.0	74.8	63.0	63.9	06:23:59	67.0	74.5	77.9	74.0	74.7
05:04:59	52.1	59.0	56.9	57.5	49.3	05:44:59	61.0	77.1	70.4	74.2	48.3	06:24:59	75.9	70.1	71.0	77.1	74.5
05:05:59	54.0	53.8	60.1	61.0	51.4	05:45:59	64.9	54.7	67.7	79.6	80.6	06:25:59	63.6	66.0	80.2	70.8	77.4
05:06:59	56.2	55.4	61.4	57.8	52.3	05:46:59	69.4	64.7	67.8	63.5	52.1	06:26:59	68.7	70.9	72.7	72.5	72.2
05:07:59	48.6	55.1	59.6	51.2	49.8	05:47:59	65.4	53.1	70.4	71.7	74.2	06:27:59	68.5	67.2	74.5	72.3	74.8
05:08:59	49.8	58.2	60.6	48.2	60.6	05:48:59	51.6	46.3	71.8	73.5	68.9	06:28:59	79.3	74.1	77.4	75.5	76.3
05:09:59	58.8	65.7	60.7	49.0	50.2	05:49:59	54.3	46.9	58.9	58.6	54.5	06:29:59	69.5	67.2	76.7	71.5	66.0
05:10:59	65.3	60.2	62.2	63.0	57.4	05:50:59	73.7	76.4	78.6	58.5	72.4	06:30:59	71.6	70.2	72.2	71.9	71.1
05:11:59	53.5	46.3	62.4	61.6	48.0	05:51:59	65.8	57.6	70.4	59.0	73.7	06:31:59	67.8	70.2	72.7	75.5	73.8
05:12:59	51.7	62.6	67.3	61.6	59.1	05:52:59	77.0	61.4	59.7	72.4	69.2	06:32:59	74.9	67.1	73.8	73.6	79.0
05:13:59	61.6	66.5	60.9	64.1	55.7	05:53:59	52.1	50.9	73.9	76.7	67.0	06:33:59	73.4	73.7	71.9	84.5	74.3
05:14:59	54.1	48.6	73.6	61.1	66.1	05:54:59	62.6	53.2	62.7	53.9	63.4	06:34:59	73.1	70.7	73.0	70.8	73.1
05:15:59	71.0	45.8	59.8	59.7	57.5	05:55:59	54.3	60.4	74.6	75.6	55.1	06:35:59	63.5	72.8	68.3	77.6	71.2
05:16:59	50.2	45.4	60.1	63.7	48.9	05:56:59	56.6	66.9	53.2	70.5	68.6	06:36:59	69.2	66.5	73.9	73.8	72.1
05:17:59	47.5	46.8	72.2	61.5	51.6	05:57:59	57.1	49.7	74.8	68.8	76.4	06:37:59	69.8	70.8	76.1	74.1	73.2
05:18:59	48.0	49.3	55.5	61.5	54.0	05:58:59	64.6	51.9	52.8	65.4	66.6	06:38:59	78.5	77.1	75.1	72.5	67.3
05:19:59	49.6	50.6	59.5	74.9	73.9	05:59:59	73.8	60.8	76.3	66.6	78.4	06:39:59	75.2	78.7	71.9	75.2	72.2
05:20:59	49.3	56.8	75.3	72.2	53.6	06:00:59	66.6	67.1	70.7	76.1	61.4	06:40:59	81.2	72.6	71.3	74.4	76.3
05:21:59	53.9	71.2	61.9	63.3	55.5	06:01:59	66.8	55.6	59.0	71.0	53.4	06:41:59	76.8	73.7	74.0	80.0	71.8
05:22:59	47.7	58.1	73.6	76.0	71.9	06:02:59	55.9	63.8	75.0	76.4	57.4	06:42:59	76.4	69.4	75.2	73.1	85.0
05:23:59	54.3	57.3	60.0	61.7	55.8	06:03:59	64.9	67.5	69.8	55.7	55.2	06:43:59	74.4	70.0	78.7	71.5	74.0
05:24:59	54.3	61.1	63.6	76.5	76.0	06:04:59	53.3	54.0	69.9	63.4	56.8	06:44:59	73.7	70.4	74.9	75.1	75.3
05:25:59	61.1	59.7	71.5	63.9	75.5	06:05:59	63.6	63.4	70.3	69.3	80.2	06:45:59	73.6	79.6	80.0	75.8	69.2
05:26:59	57.1	71.3	64.3	63.9	58.7	06:06:59	68.8	56.6	65.7	61.0	76.2	06:46:59	73.5	76.5	72.5	72.2	76.5
05:27:59	68.1	49.9	63.8	73.7	60.6	06:07:59	63.6	62.5	81.9	77.7	67.6	06:47:59	71.9	73.4	72.2	74.5	75.6
05:28:59	64.0	56.3	63.2	65.6	64.2	06:08:59	63.4	72.0	67.1	73.1	79.2	06:48:59	76.2	73.2	73.7	66.9	82.4
05:29:59	61.9	55.8	67.5	75.4	61.9	06:09:59	61.7	65.1	77.1	57.6	74.1	06:49:59	73.2	65.9	74.9	73.3	77.1
05:30:59	55.8	56.3	67.6	64.1	54.0	06:10:59	55.1	63.5	60.4	78.2	55.7	06:50:59	76.1	57.9	73.5	75.1	74.3
05:31:59	56.7	58.4	68.3	68.8	67.0	06:11:59	73.1	68.3	72.3	72.3	70.9	06:51:59	74.0	80.7	77.1	73.1	74.2
05:32:59	64.0	61.9	67.1	69.6	66.0	06:12:59	68.4	73.1	63.9	73.7	74.8	06:52:59	73.0	71.1	74.8	75.7	77.0
05:33:59	59.8	63.0	65.0	65.6	67.1	06:13:59	53.2	55.3	75.2	64.8	75.0	06:53:59	70.5	76.4	71.0	75.5	74.7
05:34:59	60.2	61.7	65.7	65.4	55.7	06:14:59	67.8	64.7	72.0	66.7	50.9	06:54:59	57.9	78.7	78.1	76.0	77.9
05:35:59	58.7	60.9	66.5	55.3	66.0	06:15:59	51.7	74.7	64.3	77.8	73.8	06:55:59	75.2	69.6	75.1	74.2	71.2
05:36:59	67.8	61.5	65.1	57.0	47.1	06:16:59	66.3	71.6	71.7	72.2	67.3	06:56:59	66.6	73.8	57.0	77.7	71.2
05:37:59	52.0	68.4	63.5	64.1	65.9	06:17:59	67.1	67.0	78.2	74.8	74.0	06:57:59	77.0	74.4	72.8	74.5	77.3
05:38:59	66.2	61.2	66.2	63.8	56.4	06:18:59	72.8	70.6	69.2	74.0	74.2	06:58:59	77.3	58.2	73.2	74.5	71.6
05:39:59	79.8	75.8	64.5	63.9	76.3	06:19:59	78.8	73.1	73.7	72.6	77.8	06:59:59	59.2	77.7	75.2	78.1	72.5

21 APPENDIX C - ENVIRONMENTAL CONDITIONS



#END OF REPORT#