



REPORT REFERENCE:

SA – 7440

ENVIRONMENTAL NOISE IMPACT ASSESSMENT

Planning Conditions 13 & 15

British Standard 8233: 2014

CLIENT:

Baytree Securities Ltd

SITE:

78 Havant Road

Emsworth

Hampshire

PO10 7LH

SURVEY DATES:

12th – 17th May 2023

Report By	
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1 EXECUTIVE SUMMARY

1.1 Instruction

Sound Advice Acoustics Ltd have been instructed by Baytree Securities Ltd 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 78 Havant Road, Emsworth, Hampshire, PO10 7LH.

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.
- Review Planning Conditions 13 & 15.
- Set a maximum plant criteria for any external plant

1.3 Summary of Results

1.3.1 Background Noise Levels

A 120 hour background noise survey was undertaken from 12th – 17th May 2023 at two positions at the front and rear of the site in order to establish the underlying background noise levels. The maximum day time levels were found to be $L_{Aeq, 16 \text{ hour}}$ 67.2 dB and the maximum night time levels were found to be $L_{Aeq, 8 \text{ hours}}$ 59.9 dB at position 1. The background noise level was established as L_{A90} 45.0 dB for daytime and L_{A90} 26.0 dB at position 2 at the rear of the development.

Assessment Position	Date Start	Date Finish	Daytime LAeq	Night Time LAeq
Position 1 Front	12/05/2023	17/05/2023	67.2	59.9
Position 2 Rear	12/05/2023	17/05/2023	55.6	53.5

Assessment Position	Date Start	Date Finish	Daytime LA90	Night time LA90
Position 1 Front	12/05/2023	17/05/2023	59.0	39.0
Position 2 Rear	12/05/2023	17/05/2023	45.0	26.0

1.4 Glazing & Ventilation Specification

The flats should be designed with a 4mm glass / 16mm air gap / 4mm glass double glazed windows and a Titon V75/C75 vent or similarly approved to all rooms to ensure the internal noise levels are acceptable in terms of the assessment to British Standard 8233: 2014.

1.5 Proposed Plant Criteria

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

The following calculations have been based on the recorded LA90 background noise level over a typical 24 hour period at the measurement position 2 and include the possibility of night time operations.

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

1.5.1 DAYTIME 07:00 – 23:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
40.3	34.8	27.6	27.3	29.8	26.9	24.5	22.2	3.9	34	Calculated Noise Source Level @ 1.0m
20.3	14.8	7.6	7.3	9.8	6.9	4.5	2.2	-16.1	14	Calculated Noise Source Level @ 10.0m
Sound Pressure Level at 1.0m from plant (ref 2 x 10 ⁻⁵ Pa)										

1.5.2 NIGHT TIME 23:00 – 07:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
16.2	8.3	6.0	8.2	9.8	6.6	7.0	8.2	-16.7	15	Calculated Noise Source Level @ 1.0m
-3.8	-11.7	-14.0	-11.8	-10.2	-13.4	-13.0	-11.8	-36.7	-5	Calculated Noise Source Level @ 10.0m
Sound Pressure Level at 1.0m from plant (ref 2 x 10 ⁻⁵ Pa)										

1.5.3 Assessments

1.5.3.1 Daytime (07:00 – 23:00)

Rating Level	45 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level LA90,1 hour	45 dB	8.1	Modal Background Noise Level (07:00 – 23:00)
Assessment Level	+/- 0 dB	11	The background level is subtracted from the rating level.
Conclusion BS 4142:2014 _[1]	+10 dB Significant Adverse Effects, +5 dB Adverse Effects, +0 dB Low Impact		
Assessment	+/- 0 dB		
Conclusion	The assessment level is 'Low Impact'		

1.5.3.2 Night Time (23:00 – 07:00)

Rating Level	26 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	26 dB	8.1	Modal Background Noise Level (23:00 – 07:00)
Assessment Level	+/- 0 dB	11	The background level is subtracted from the rating level.
Conclusion BS 4142:2014 ^[1]	+10 dB Significant Adverse Effects, +5 dB Adverse Effects, +0 dB Low Impact		
Assessment	+/- 0 dB		
Conclusion	The assessment level is 'Low Impact'		

1.6 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 residential dwellings and satisfy the local council's requirements.

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 and planning condition 15 can be discharged accordingly.

The operation of any proposed 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 no conflict with 'low impact' criteria and give a strong indication that complaint and impact on the local amenity is unlikely, provided the recommended maximum noise levels plant criteria is achieved as detailed within this report.

The plant criteria was set, as the new plant is yet to be designed and if adhered to, could discharge condition 13 accordingly.

Based on the calculations and assessments made within this report it is the professional opinion of Sound Advice Acoustics Ltd that the proposed development can demonstrate compliance with the National Planning Policy Framework 2021, NPPF & NPSE and that, with regards to sound, planning conditions 13 & 15 can be discharged.

2 INTRODUCTION

Sound Advice Acoustics Ltd have been instructed by Baytree Securities Ltd 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 78 Havant Road, Emsworth, Hampshire, PO10 7LH.

Ambient noise levels were measured between 12th – 17th May 2023. 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 to be monitored at the site in accordance with British Standard 7445: 2003 'Description and measurement of environmental noise assessments and assessments made to ensure planning conditions 13 & 15 can be discharged accordingly.

2.1 Planning Conditions 13 & 15

2.1.1 Planning Condition 13

No external air moving plant or equipment, such as air conditioning units, air source heat pumps and the like shall be installed or mounted, as part of this development, unless and until a scheme for such provision has been submitted to and approved in writing by the Local Planning Authority, which specifies the provisions to be made for the control of noise and / or vibration that may emanate from such plant /equipment, prior to any development taking place. The approved scheme shall be fully implemented prior to occupation of the development and thereafter maintained and retained.

Reason: To protect the occupants of nearby residential properties from any noise and / or vibration nuisance having due regard to policies CS16 and DM10 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

2.1.2 Planning Condition 15

No above ground construction works shall take place until details have been submitted to the Local Planning Authority, that confirm that the acoustic mitigation measures to be employed with regard to the building envelope, including fenestration and ventilation, will meet BS8223:2014 standards as recommended for indoor ambient noise levels for dwellings, especially in relation to living rooms and bedrooms i.e. during the day (07:00 to 23:00) 35 dB LAeq,16 hour and at night (23:00 to 07:00) 30 dB LAeq,8 hour for bedrooms.

Reason: To protect the amenities of the future occupants of the proposed dwellings and to ensure the residential amenity of the properties is not impacted upon by any external noise levels, including road traffic noise having due regard to policies CS16 and DM10 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.

Therefore, this assessment and report has been undertaken to mitigate and discharge the above planning conditions 13 & 15 accordingly.

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 BS8233: 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 2019(NPPF) and Noise Policy Statement for England 2010 (NPSE).

References and evaluations are to be made to the National Planning Policy Framework 2019(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.

“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:

NOEL – No Observed Effect Level

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

LOAEL – Lowest Observed Adverse Effect Level

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

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

SOAEL – Significant Observed Adverse Effect Level

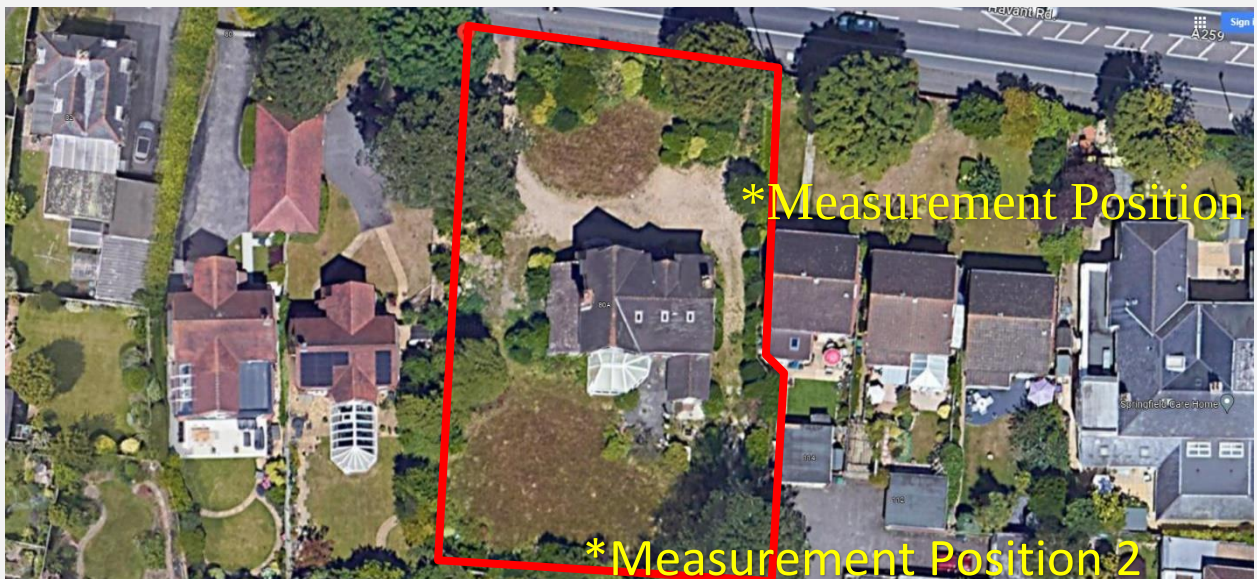
This is the level above which significant adverse effects on health and quality of life occur.

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

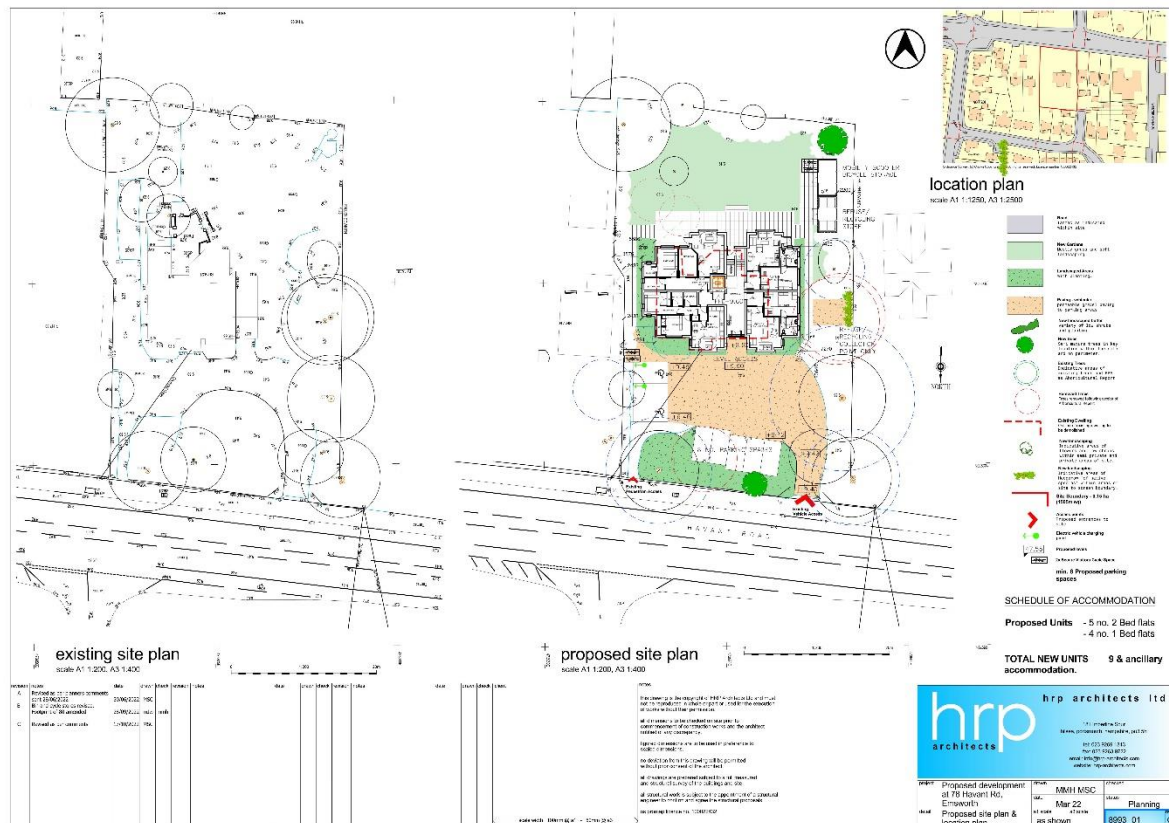
Position of Site in Wider Area

The site is located in Emsworth, Hampshire. The dominant noise source is road traffic noise.

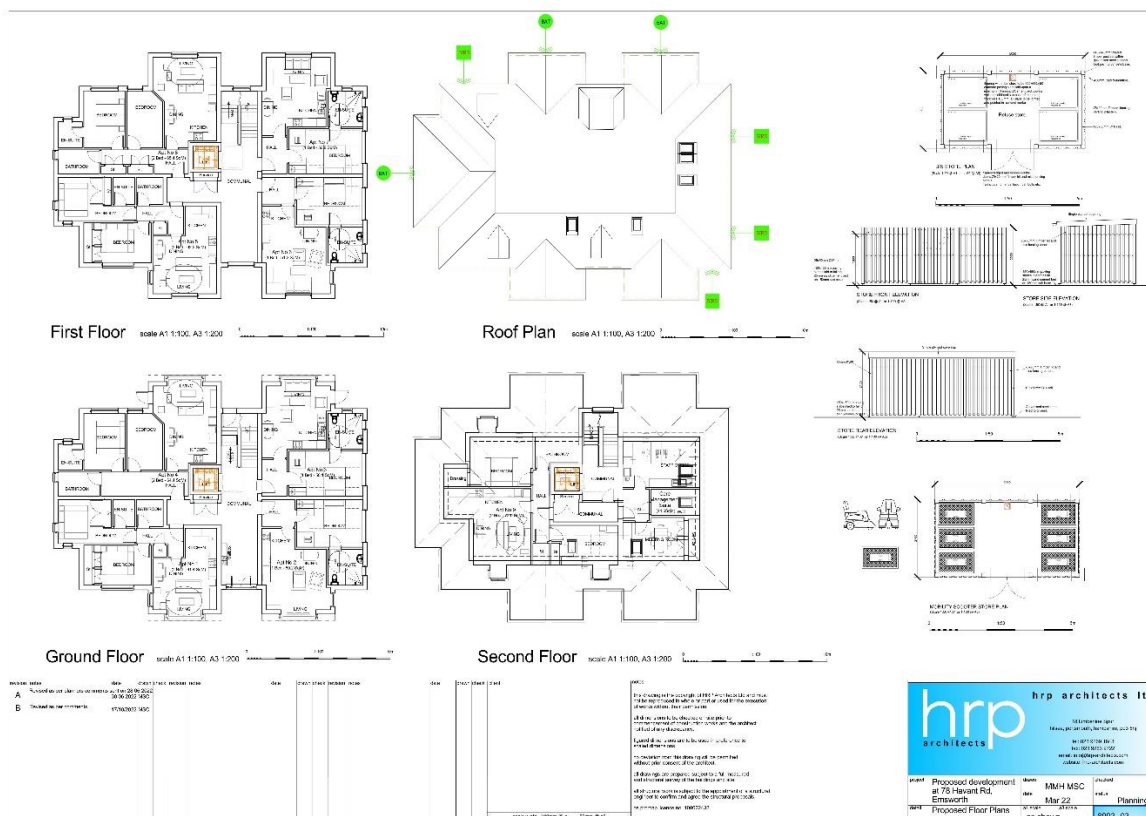


3.1 Proposed Development

The proposed development is shown below.



Proposed Site Plan



Proposed Floor Plans



Proposed front (North) elevation scale A1 1:50, A3 1:100



Proposed side (East) elevation scale A1 1:50, A3 1:100

revision	notes	date	drawn	checked	approved	scale	date	drawn	checked	approved	scale
A	Revised to include acoustic details for the front elevation	17/02/2022	MSC								
B	Revised to include acoustic details for the side elevation	17/02/2022	MSC								

hrp architects ltd		hrp architects ltd	
18 Gifford Way Riverside, South Shields, Tyne and Wear NE15 6JF	0191 5089 462 0191 5089 4722 0191 5089 4722 hrp@hrparchitects.co.uk	Proposed development at 78 Havant Rd, Emsworth Proposed Elevations (1 of 2)	Client: M&H MSC Date: Mar 22 As shown Status: Planning Reference: 6993 04 B

Proposed Elevations North & East



Proposed rear (South) elevation scale A1 1:50, A3 1:100



Proposed side (West) elevation scale A1 1:50, A3 1:100

revision	notes	date	drawn	checked	approved	scale	date	drawn	checked	approved	scale
A	Revised to include acoustic details for the rear elevation	17/02/2022	MSC								
B	Revised to include acoustic details for the side elevation	17/02/2022	MSC								

hrp architects ltd		hrp architects ltd	
18 Gifford Way Riverside, South Shields, Tyne and Wear NE15 6JF	0191 5089 462 0191 5089 4722 0191 5089 4722 hrp@hrparchitects.co.uk	Proposed development at 78 Havant Rd, Emsworth Proposed Elevations (2 of 2)	Client: M&H MSC Date: Mar 22 As shown Status: Planning Reference: 6993 04 B

Proposed Elevations South & West

4 PROCEDURE

External noise levels were recorded over a typical period and analysis date extrapolated between 07:00 hrs 12th May and 07:00 hrs on 17th May 2023 at positions 1 & 2 as detailed within this report.

Position 1 was located at the Northern boundary to capture the noise levels associated with Havant Road and position 2 was located at the Southern boundary of the site in order to capture the noise levels associated with the background. Sample measurements were recorded over continuous 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 1403140

Description	Make	Type	Serial No.	Calibration Intervals	Last Calibrated	Next Due Calibration
Integrated Sound Level Meter	Norsonic	140	1403140	2 YEARS	12.04.2023	12.04.2025
12.5mm Microphone (with windshield)	Norsonic	1225	413206	2 YEARS	12.04.2023	12.04.2025
Microphone Pre – Amplifier	Norsonic	1209	12245	2 YEARS	12.04.2023	12.04.2025

5.2 118 noise meter s/n 31632

Description	Make	Type	Serial No.	Calibration Intervals	Last Calibrated	Next Due Calibration
Integrated Sound Level Meter	Norsonic	118	31632	2 YEARS	25.07.2022	25.07.2024
12.5mm Microphone (with windshield)	Norsonic	1225	91720	2 YEARS	25.07.2022	25.07.2024
Microphone Pre – Amplifier	Norsonic	1201	29307	2 YEARS	25.07.2022	25.07.2024

Full calibration certificates are available upon request.

6 RESULTS

6.1 Downloaded results, and averages.

6.2 07:00 – 07:00 12th – 13th May 2023 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 LA90 1 HOUR & Corresponding LAeq 1 HOUR	67.2	96.5	62.0	68.1	63.2	58.9	59.5	65.2	59.7	48.5	39.3	28.1
NIGHT TIME 23:00 - 07:00 LA90 15 MIN & Corresponding LAeq 15 MIN	58.4	84.8	51.0	59.2	52.8	49.3	50.4	56.2	50.7	45.2	41.4	26.7

6.3 07:00 – 07:00 13th – 14th May 2023 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 LA90 1 HOUR & Corresponding LAeq 1 HOUR	65.9	95.5	60.0	67.0	63.6	58.7	58.0	64.1	57.9	47.0	39.2	25.2
NIGHT TIME 23:00 - 07:00 LA90 15 MIN & Corresponding LAeq 15 MIN	58.7	87.8	43.0	55.6	50.3	47.3	48.7	55.5	49.8	49.2	50.7	25.9

6.4 07:00 – 07:00 14th – 15th May 2023 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 LA90 1 HOUR & Corresponding LAeq 1 HOUR	65.0	94.1	59.0	66.3	63.4	58.4	57.5	63.0	56.7	48.9	46.8	27.0
NIGHT TIME 23:00 - 07:00 LA90 15 MIN & Corresponding LAeq 15 MIN	59.9	92.5	39.0	57.6	53.0	49.6	51.0	57.2	51.6	49.9	49.2	26.2

6.5 07:00 – 07:00 15th – 16th May 2023 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 LA90 1 HOUR & Corresponding LAeq 1 HOUR	65.7	98.6	59.0	67.5	62.7	57.9	58.3	63.8	57.5	47.5	41.0	27.3
NIGHT TIME 23:00 - 07:00 LA90 15 MIN & Corresponding LAeq 15 MIN	59.1	86.9	51.0	57.8	53.0	49.6	51.6	57.1	50.9	44.8	43.1	21.5

6.6 07:00 – 07:00 16th – 17th May 2023 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 LA90 1 HOUR & Corresponding LAeq 1 HOUR	66.4	102.0	60.0	67.7	63.0	58.3	58.7	64.4	58.9	48.2	41.3	25.8
NIGHT TIME 23:00 - 07:00 LA90 15 MIN & Corresponding LAeq 15 MIN	59.9	89.2	39.0	57.8	53.0	49.3	51.4	56.9	51.2	50.7	49.4	29.8

The following noise levels have been corrected for the highest recorded levels and used within the BS 8233: 2014 calculations at 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 LA90 1 HOUR & Corresponding LAeq 1 HOUR	67.2	96.5	62.0	68.1	63.2	58.9	59.5	65.2	59.7	48.5	39.3	28.1
NIGHT TIME 23:00 - 07:00 A90 15 MIN & Corresponding LAeq 15 MIN	59.9	92.5	39.0	57.6	53.0	49.6	51.0	57.2	51.6	49.9	49.2	26.2

6.7 07:00 – 07:00 12th – 13th May 2023 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 LA90 1 HOUR & Corresponding LAeq 1 HOUR	55.6	88.3	51.0	61.5	54.5	49.0	50.0	52.9	46.9	44.0	40.2	24.0
NIGHT TIME 23:00 - 07:00 LA90 15 MIN & Corresponding LAeq 15 MIN	53.5	96.6	38.0	54.2	46.9	43.8	43.7	45.3	41.4	49.7	46.8	25.6

6.8 07:00 – 07:00 13th – 14th May 2023 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 LA90 1 HOUR & Corresponding LAeq 1 HOUR	53.4	78.4	49.0	59.7	54.7	48.7	47.5	50.6	44.7	41.2	37.9	19.7
NIGHT TIME 23:00 - 07:00 LA90 15 MIN & Corresponding LAeq 15 MIN	48.4	71.7	36.0	48.7	41.4	35.7	38.2	41.6	37.7	42.5	43.9	18.7

6.9 07:00 – 07:00 14th – 15th May 2023 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 LA90 1 HOUR & Corresponding LAeq 1 HOUR	52.3	81.0	45.0	58.6	53.1	45.9	45.6	48.1	45.2	42.8	40.5	22.2
NIGHT TIME 23:00 - 07:00 LA90 15 MIN & Corresponding LAeq 15 MIN	51.4	85.0	31.0	50.9	43.6	40.4	42.6	45.3	41.7	44.8	46.4	21.9

6.10 07:00 – 07:00 15th – 16th May 2023 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 LA90 1 HOUR & Corresponding LAeq 1 HOUR	54.0	79.9	50.0	60.7	53.1	47.9	49.0	51.1	46.3	40.1	35.2	20.0
NIGHT TIME 23:00 - 07:00 LA90 15 MIN & Corresponding LAeq 15 MIN	49.8	76.5	26.0	51.0	43.1	40.8	43.0	44.6	41.4	41.8	43.0	18.1

6.11 07:00 – 07:00 16th – 17th May 2023 Position 2

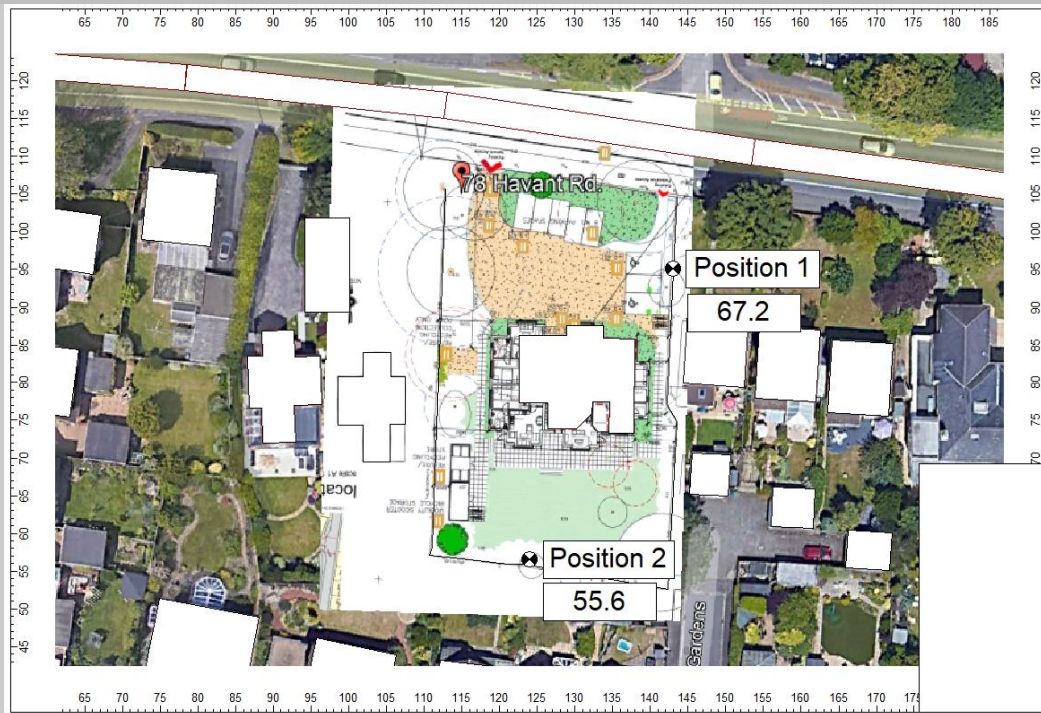
NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LA90 1 HOUR & Corresponding LAeq 1 HOUR	53.7	77.2	49.0	60.3	52.6	46.2	48.0	50.6	46.6	41.0	37.9	18.1
NIGHT TIME 23:00 - 07:00 A90 15 MIN & Corresponding LAeq 15 MIN	50.7	74.5	48.0	51.0	43.8	41.0	43.3	44.7	41.7	43.9	44.6	19.3

7 INTERNAL NOISE LEVEL GUIDELINES

7.1 Discussion of Results

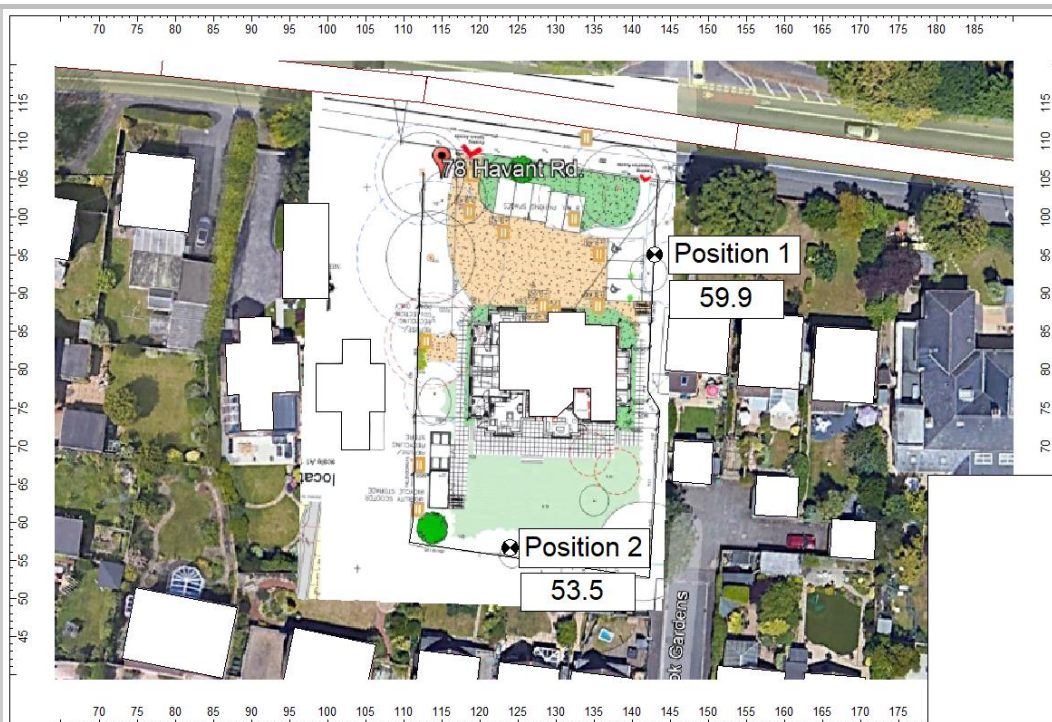
It can be seen from the attached graph and downloaded results that the external noise levels have followed the expected path and remained fairly constant throughout the day. The levels then gradually dropped off as the evening progressed and began to rise when morning traffic levels increased.

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



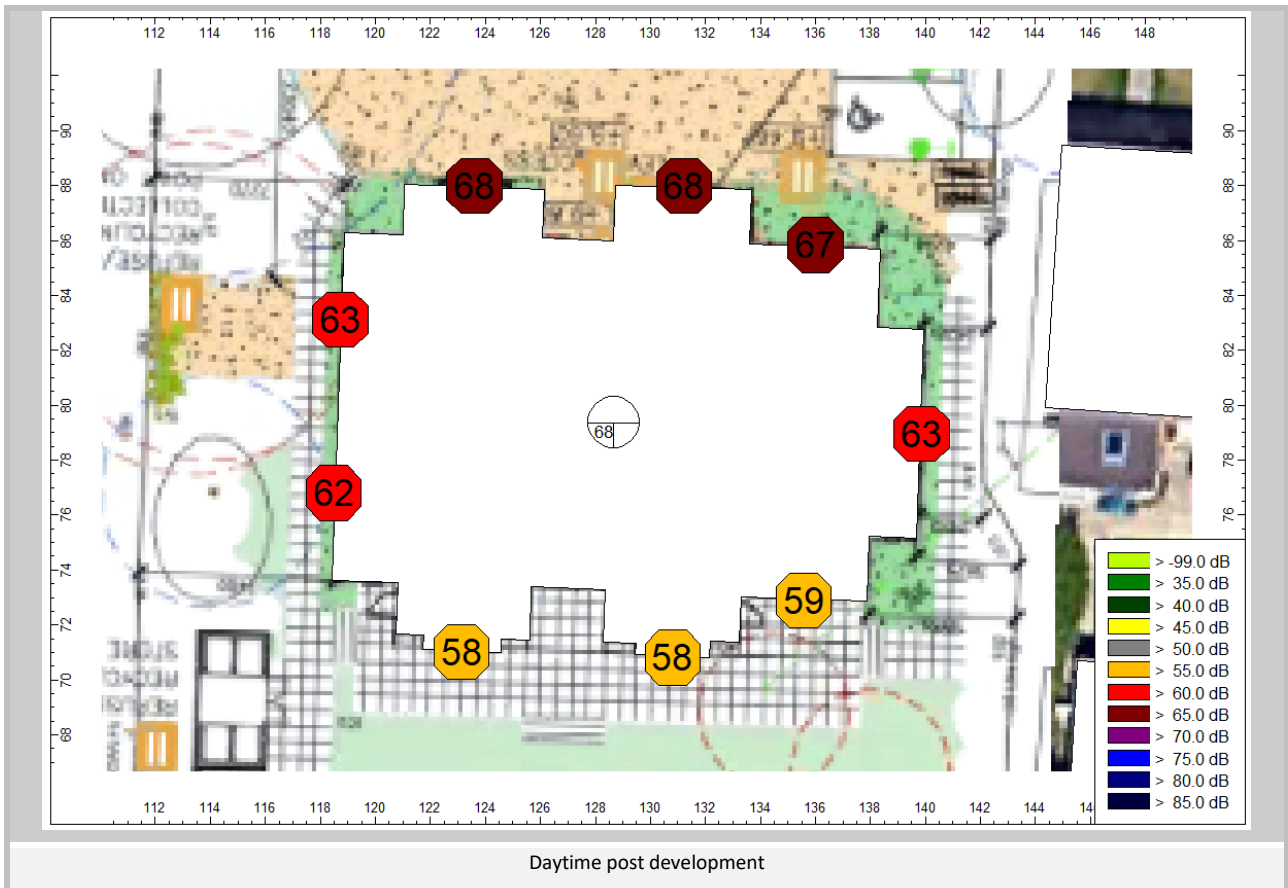
Daytime prior to development

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

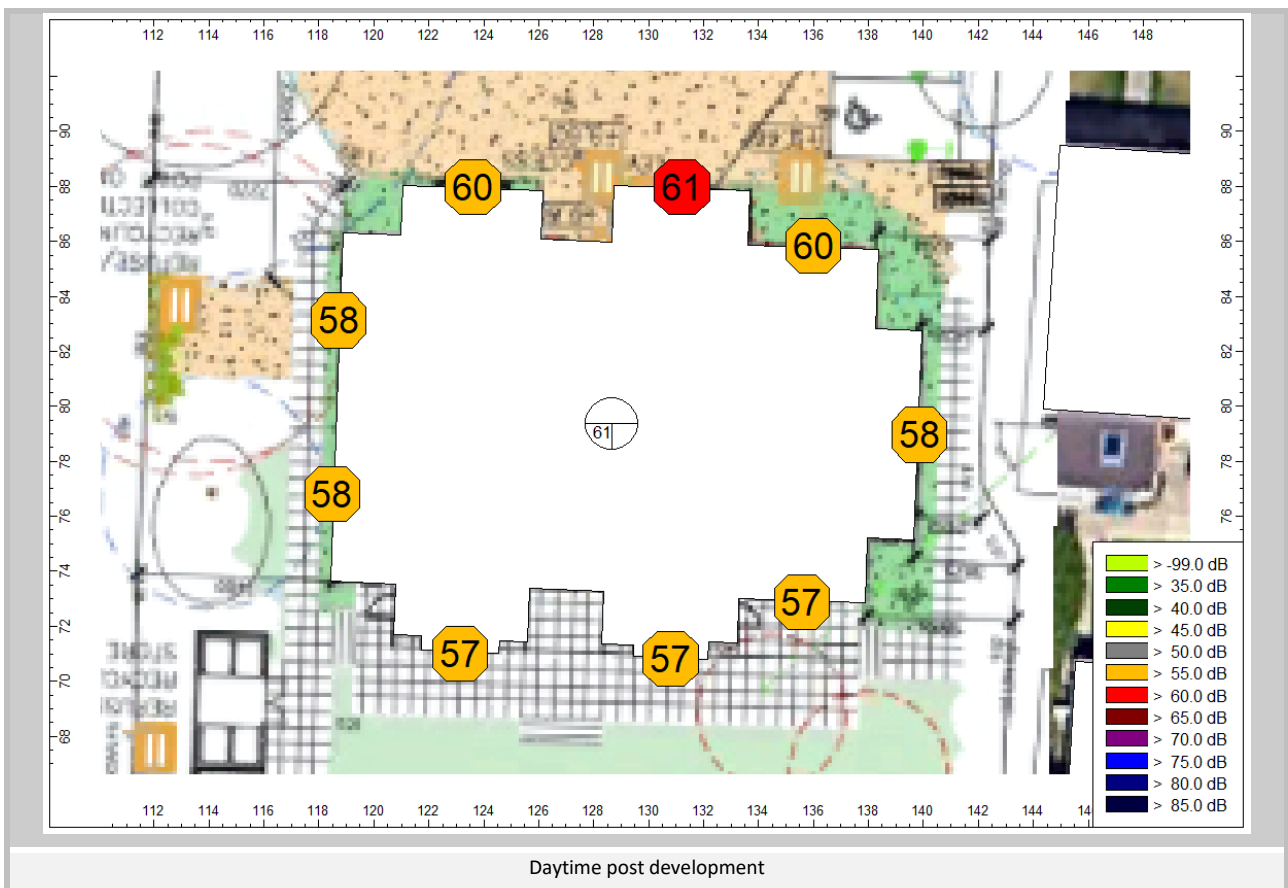


Night time prior to development

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



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



7.6 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.

7.7 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.

7.8 Flat 5 – Living/Kitchen

Figure No.	11					
Floor	First					
Room	5 - Living/Kitchen					
Recorded Site Data (Corrected for Free Field)	Octave Band Centre Frequency (Hz)					
	125	250	500	1000	2000	4000
	Daytime Leqff	64.0	59.7	60.3	66.0	60.5
Night time Leqff	54.1	50.7	52.1	58.3	52.7	51.0
Room Data	Sf	Sr	Swi	Sew	Srr	Volume
Area m²	11	0	2	9	0	53
Specification Summary	Site Specific Specification			Attenuation Required		
Glazing Specification	4mm / (6-16mm) / 4mm			Rw(C; Ctr)	29(-1,-4) dB	
Ventilation Strategy	Titon V75 / C75			Dne'w	44 dB	
Wall Specification	Brick & Block Cavity Wall			Rw	54 dB	
Roof Specification	Standard Roof			Rw	43 dB	
Detailed Specification	Octave Band Centre Frequency (Hz)					
	125	250	500	1000	2000	4000
Glazing Specification (Rwi)	21.0	17.0	25.0	35.0	37.0	31.0
Ventilation Strategy (Dne)	37.0	37.0	36.1	46.9	49.2	55.2
Wall Specification (Rew)	40.0	44.0	45.0	51.0	56.0	56.0
Roof Specification (Rrr)	28.0	34.0	40.0	45.0	49.0	49.0
Calculation Results						
Daytime Hours (07:00-23:00)			L _{Aeq} 16 HOUR	33.2	dB(A)	
Night Time Hours (23:00-07:00)			L _{Aeq} 8 HOUR	25.2	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.					

7.9 Flat 5 - Bedroom

Figure No.	12						
Floor	First						
Room	5 - Bedroom						
Recorded Site Data (Corrected for Free Field)	Octave Band Centre Frequency (Hz)						
	125	250	500	1000	2000	4000	
	Daytime Leqff	64.0	59.7	60.3	66.0	60.5	49.3
	Night time Leqff	54.1	50.7	52.1	58.3	52.7	51.0
Room Data	Sf	Sr	Swi	Sew	Srr	Volume	
Area m²	9	0	2	7	0	26	
Specification Summary	Site Specific Specification			Attenuation Required			
Glazing Specification	4mm / (6-16mm) / 4mm			Rw(C; Ctr)	29(-1,-4) dB		
Ventilation Strategy	Titon V75 / C75			Dne'w	44 dB		
Wall Specification	Brick & Block Cavity Wall			Rw	54 dB		
Roof Specification	Standard Roof			Rw	43 dB		
Detailed Specification	Octave Band Centre Frequency (Hz)						
	125	250	500	1000	2000	4000	
Glazing Specification (Rwi)	21.0	17.0	25.0	35.0	37.0	31.0	
Ventilation Strategy (Dne)	37.0	37.0	36.1	46.9	49.2	55.2	
Wall Specification (Rew)	40.0	44.0	45.0	51.0	56.0	56.0	
Roof Specification (Rrr)	28.0	34.0	40.0	45.0	49.0	49.0	
Calculation Results							
Daytime Hours (07:00-23:00)			L _{Aeq} 16 HOUR	33.2	dB(A)		
Night Time Hours (23:00-07:00)			L _{Aeq} 8 HOUR	25.2	dB(A)		
Formula	Leq2=Leqff+10log[A0/S*10^(-Dne/10)+Swi/S*10^(-Rwi/10)+Sew/10*10^(-Rew/10)+Srr/S*10^(-Rrr/10)] +10log(S/A) +3						
Note	The expected precision of this calculation is ±2 dB.						

7.10 Flat 9 – Living/Kitchen

Figure No.	13						
Floor	Top						
Room	9 - Living/Kitchen						
Recorded Site Data (Corrected for Free Field)	Octave Band Centre Frequency (Hz)						
	125	250	500	1000	2000	4000	
	Daytime Leqff	64.0	59.7	60.3	66.0	60.5	49.3
	Night time Leqff	54.1	50.7	52.1	58.3	52.7	51.0
Room Data	Sf	Sr	Swi	Sew	Srr	Volume	
Area m²	9	0	2	7	0	26	
Specification Summary	Site Specific Specification			Attenuation Required			
Glazing Specification	4mm / (6-16mm) / 4mm			Rw(C; Ctr)	29(-1,-4) dB		
Ventilation Strategy	Titon V75 / C75			Dne'w	44 dB		
Wall Specification	Roof			Rw	57 dB		
Roof Specification	Standard Pitched Roof			Rw	57 dB		
Detailed Specification	Octave Band Centre Frequency (Hz)						
	125	250	500	1000	2000	4000	
Glazing Specification (Rwi)	21.0	17.0	25.0	35.0	37.0	31.0	
Ventilation Strategy (Dne)	37.0	37.0	36.1	46.9	49.2	55.2	
Wall Specification (Rew)	39.0	48.0	55.0	60.0	59.0	61.0	
Roof Specification (Rrr)	39.0	48.0	55.0	60.0	59.0	61.0	
Calculation Results							
Daytime Hours (07:00-23:00)			L _{Aeq} 16 HOUR	33.1	dB(A)		
Night Time Hours (23:00-07:00)			L _{Aeq} 8 HOUR	25.1	dB(A)		
Formula	Leq2=Leqff+10log[A0/S*10^(-Dne/10)+Swi/S*10^(-Rwi/10)+Sew/10*10^(-Rew/10)+Srr/S*10^(-Rrr/10)] +10log(S/A) +3						
Note	The expected precision of this calculation is ±2 dB.						

7.11 Ventilation (D_{ne})

Octave Band Frequency	125	250	500	1000	2000	4000	D _{n,e,w}
Titon V75/C75	37.0	37.0	36.1	46.9	49.2	55.2	44.0

7.12 Glazing (R_{wi})

Octave Band Frequency	125	250	500	1000	2000	4000	R _w (C:Ctr)
4mm glass / 16mm air gap / 4mm glass	21.0	17.0	25.0	35.0	37.0	31.0	29.0 (-1,-4)

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

Octave Band Frequency	125	250	500	1000	2000	4000	R _w
Minimum External Wall Attenuation	40.0	44.0	45.0	51.0	56.0	56.0	54.0

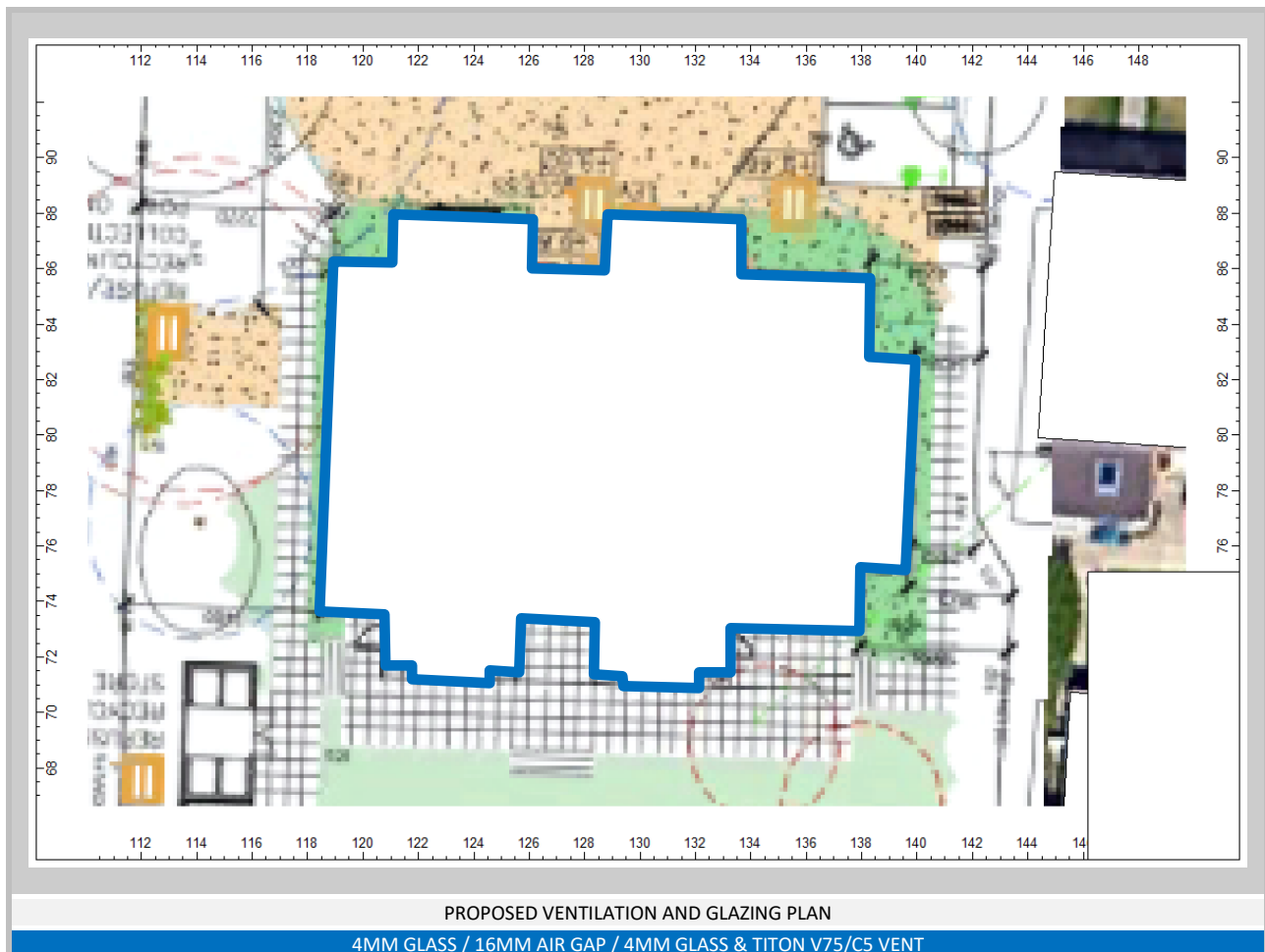
7.14 Roof (R_{rr})

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

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.

7.15 Glazing & Ventilation Assessment



The flats should be designed with a 4mm glass / 16mm air gap / 4mm glass double glazed windows and a Titon V75/C75 vent or similarly approved to all rooms to ensure the internal noise levels are acceptable in terms of the assessment to British Standard 8233: 2014.

8 PLANT CALCULATIONS

The following calculations have been based on the recorded LA90 background noise level over a typical 24 hour period at the measurement position 2 and include the possibility of night time operations.

8.1 DAYTIME 07:00 – 23:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
58.6	53.1	45.9	45.6	48.1	45.2	42.8	40.5	22.2		Recorded Background Noise Levels
3	3	3	3	3	3	3	3	3		Reflection at Residential
5	5	5	5	5	5	5	5	5		BS 4142 : 2014 Corrections
7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3		L _{Aeq} - LA90
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		Distance Correction
0	0	0	0	0	0	0	0	0		Barrier Attenuation
3	3	3	3	3	3	3	3	3		Reflection at Source
46.3	40.8	33.6	33.3	35.8	32.9	30.5	28.2	9.9	40	Target Level at Residential
6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		Reflections
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		Distance and Barriers
40.3	34.8	27.6	27.3	29.8	26.9	24.5	22.2	3.9	34	Calculated Noise Source Level @ 1.0m
20.3	14.8	7.6	7.3	9.8	6.9	4.5	2.2	-16.1	14	Calculated Noise Source Level @ 10.0m

8.2 NIGHT TIME 23:00 – 07:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
51.0	43.1	40.8	43.0	44.6	41.4	41.8	43.0	18.1		Recorded Background Noise Levels
3	3	3	3	3	3	3	3	3		Reflection at Residential
5	5	5	5	5	5	5	5	5		BS 4142 : 2014 Corrections
23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8		L _{Aeq} - LA90
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		Distance Correction
0	0	0	0	0	0	0	0	0		Barrier Attenuation
3	3	3	3	3	3	3	3	3		Reflection at Source
22.2	14.3	12.0	14.2	15.8	12.6	13.0	14.2	-10.7	21	Target Level at Residential
6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		Reflections
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		Distance and Barriers
16.2	8.3	6.0	8.2	9.8	6.6	7.0	8.2	-16.7	15	Calculated Noise Source Level @ 1.0m
-3.8	-11.7	-14.0	-11.8	-10.2	-13.4	-13.0	-11.8	-36.7	-5	Calculated Noise Source Level @ 10.0m

The above calculations have demonstrated that in order to meet the criteria of the background noise level, the following external noise level plant criteria should be achieved at 1.0m and 10.0m from all units operating at the same time under normal load.

8.3 DAYTIME 07:00 – 23:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
40.3	34.8	27.6	27.3	29.8	26.9	24.5	22.2	3.9	34	Calculated Noise Source Level @ 1.0m
20.3	14.8	7.6	7.3	9.8	6.9	4.5	2.2	-16.1	14	Calculated Noise Source Level @ 10.0m
Sound Pressure Level (ref 2 x 10 ⁻⁵ Pa)										

8.4 NIGHT TIME 23:00 – 07:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
16.2	8.3	6.0	8.2	9.8	6.6	7.0	8.2	-16.7	15	Calculated Noise Source Level @ 1.0m
-3.8	-11.7	-14.0	-11.8	-10.2	-13.4	-13.0	-11.8	-36.7	-5	Calculated Noise Source Level @ 10.0m
Sound Pressure Level (ref 2 x 10 ⁻⁵ Pa)										

The above calculations have been made on the worst case scenario with the plant being positioned no closer than 1.0m (linear) to the nearest affected window.

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

9 BS4142: 2014 +A1:2019 NOISE ASSESSMENT

9.1 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.

9.2 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.

9.3 Assessment Position

The assessment position was established as any noise sensitive premise within 1.0m from any and all proposed plant.

9.4 Calculations

The specific noise levels are calculated at the assessment position located at the residential property above the site using the calculations detailed within ISO 9613 Part 1 and 2: 1996. These calculations take the manufacturers sound power levels into account for a variety of factors including source directivity, distance, atmospheric absorption, ground absorption and the effects of any barriers and determine the resultant noise levels at the assessment position.

9.5 Equivalent Position

The background noise levels were measured at the equivalent position, chosen as it most represented the closest noise sensitive façade, located within the existing site between 07:00 on 12th and 07:00 on 17th May 2023.

9.6 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.

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

9.7 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.

BS4142: 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.

BS4142: 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.

BS4142: 2014 +A1:2019– Section 9.2 Subjective Method	Perceptibility to noise sensitive facades	Correction
Readily Distinctive	Is not present	+0
	Is present	+3
Intermittency	Is not present	+0
	Is present	+3

9.8 Assessment Criterion

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

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

9.9 Noise Meter Floor

BS 4142: 2014 +A1:2019 suggests that Care is necessary in circumstances where background sound levels are low to ensure that self-generated and electrical noise within the measurement system does not unduly influence reported values, which might be the case if the measured background sound levels are less than 10 dB above the noise floor of the measuring system. The floor of a typical class 1 noise meter is in the region of 14 dB(A) and therefore measurements of less than 24 dB(A) should be assessed with care.

9.10 Octave Band Frequency Analysis

All calculations carried out are done so on an octave band centre frequency basis and not an overall dB(A) level. This ensures that the tonal element from any proposed plant is minimised. A large majority of manufacturer's data is supplied in the octave band centre frequency (Hz) format.

9.11 BS 4142: 2014 +A1:2019 Penalties

Whilst BS 4142: 2014 +A1:2019 allows receptor assessments to be made to achieve levels equal to prevailing background noise levels, it also ensures that appropriate and more stringent penalties are applied to the specific noise level to ensure the correct level of protection for the local residents.

9.12 Assessments

9.12.1 Daytime (07:00 – 23:00)

Rating Industrial Noise affecting Mixed Industrial and Residential Areas			
British Standard 4142: 2014 +A1:2019 Daytime (07:00 to 23:00)			
Source	Operating Times		Source Position
Case Breakout	07:00 to 23:00 7 days per week Worst case scenario		See Plans
Outlet			
Assessment Position	78 Havant Road, Emsworth		
Background Position	At the assessment position		
Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1\text{ hour}}$	40 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Impulsivity	+3 dB	8.1	Impulsivity Characteristic
Rating Level	45 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 (0700 – 2300)
Assessment Level	+/- 0 dB	11	The background level is subtracted from the rating level.
Conclusion BS 4142:2014 _[1]	+10 dB Significant Adverse Effects, +5 dB Adverse Effects, +0 dB Low Impact		
Assessment	+/- 0 dB		
Conclusion	The assessment level is ‘Low Impact’		

9.12.2 Night Time (23:00 – 07:00)

Rating Industrial Noise affecting Mixed Industrial and Residential Areas			
British Standard 4142: 2014 +A1:2019 Night Time (23:00 to 07:00)			
Source	Operating Times		Source Position
Case Breakout	23:00 to 07:00		See Plans
Outlet	7 days per week Worst case scenario		
Assessment Position	78 Havant Road, Emsworth		
Background Position	At the assessment position		
Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1\text{ hour}}$	21 dB	7	Calculated using ISO 9613:1996 _[3] .
Tonality	+2 dB	8.1	Tonality Characteristic
Impulsivity	+3 dB	8.1	Impulsivity Characteristic
Rating Level	26 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1\text{ hour}}$	26 dB	8.1	Modal Background Noise Level (2300 – 0700)
Assessment Level	+/- 0 dB	11	The background level is subtracted from the rating level.
Conclusion BS 4142:2014 _[1]	+10 dB Significant Adverse Effects, +5 dB Adverse Effects, +0 dB Low Impact		
Assessment	+/- 0 dB		
Conclusion	The assessment level is ‘Low Impact’		

9.13 Tonal Penalty

A +2 dB penalty has been applied to the specific noise level to allow for any minor tonal elements that may be present from the proposed plant. It should be noted that the calculations made within this report have been done so in octave band centre frequency levels in order to minimise tonal element and therefore applying any more than +2 dB would not be appropriate to this assessment. To safeguard the residents from any possible unwanted noise, this penalty has been applied as an extra layer of acoustic protection.

9.14 Impulsivity Penalty

A +3 dB penalty has been applied to the specific noise level to allow for any minor impulsive elements that may be present from the proposed plant. It should be noted that the calculations made within this report have been done so with the assessment conclusion of +/- 0 dB below the background noise levels and therefore, the impulsive nature of the plant should not be audible at the nearest associated noise sensitive preceptors. To safeguard the residents from any possible unwanted noise, this penalty has been applied as an extra layer of acoustic protection.

9.15 Assessment Conclusion

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

10 The National Planning Policy Framework 2021(NPPF)

The National Planning Policy Framework 2021(NPPF) and assessments to the Noise Policy Statement for England 2010 (NPSE) should be made in conjunction with each other. Paragraphs 185 - 188 of the National Planning Policy Framework 2021(NPPF) states the following:

Paragraph 185 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 186 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 187 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 188 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 and planning condition 32 can be discharged accordingly.

11 CONCLUSION

11.1 Background Noise Levels

A 120 hour background noise survey was undertaken from 12th – 17th May 2023 at two positions at the front and rear of the site in order to establish the underlying background noise levels. The maximum day time levels were found to be $L_{Aeq, 16 \text{ hour}}$ 67.2 dB and the maximum night time levels were found to be $L_{Aeq, 8 \text{ hours}}$ 59.9 dB at position 1. The background noise level was established as L_{A90} 45.0 dB for daytime and L_{A90} 26.0 dB at position 2 at the rear of the development.

Assessment Position	Date Start	Date Finish	Daytime LAeq	Night Time LAeq
Position 1 Front	12/05/2023	17/05/2023	67.2	59.9
Position 2 Rear	12/05/2023	17/05/2023	55.6	53.5

Assessment Position	Date Start	Date Finish	Daytime LA90	Night time LA90
Position 1 Front	12/05/2023	17/05/2023	59.0	39.0
Position 2 Rear	12/05/2023	17/05/2023	45.0	26.0

11.2 Glazing & Ventilation Specification

The flats should be designed with a 4mm glass / 16mm air gap / 4mm glass double glazed windows and a Titon V75/C75 vent or similarly approved to all rooms to ensure the internal noise levels are acceptable in terms of the assessment to British Standard 8233: 2014.

11.3 Proposed Plant Criteria

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

The following calculations have been based on the recorded L_{A90} background noise level over a typical 24 hour period at the measurement position 2 and include the possibility of night time operations.

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

DAYTIME 07:00 – 23:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
40.3	34.8	27.6	27.3	29.8	26.9	24.5	22.2	3.9	34	Calculated Noise Source Level @ 1.0m
20.3	14.8	7.6	7.3	9.8	6.9	4.5	2.2	-16.1	14	Calculated Noise Source Level @ 10.0m
Sound Pressure Level at 1.0m from plant (ref 2 x 10 ⁻⁵ Pa)										

NIGHT TIME 23:00 – 07:00

Octave Band Centre Frequency (Hz)									dB(A)	Comments
63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k		
16.2	8.3	6.0	8.2	9.8	6.6	7.0	8.2	-16.7	15	Calculated Noise Source Level @ 1.0m
-3.8	-11.7	-14.0	-11.8	-10.2	-13.4	-13.0	-11.8	-36.7	-5	Calculated Noise Source Level @ 10.0m
Sound Pressure Level at 1.0m from plant (ref 2 x 10 ⁻⁵ Pa)										

11.3.1 Assessments

11.3.1.1 Daytime (07:00 – 23:00)

Rating Level	45 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level LA90,1 hour	45 dB	8.1	Modal Background Noise Level (07:00 – 23:00)
Assessment Level	+/- 0 dB	11	The background level is subtracted from the rating level.
Conclusion BS 4142:2014 _[1]	+10 dB Significant Adverse Effects, +5 dB Adverse Effects, +0 dB Low Impact		
Assessment	+/- 0 dB		
Conclusion	The assessment level is 'Low Impact'		

11.3.1.2 Night Time (23:00 – 07:00)

Rating Level	26 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level LA90,1 hour	26 dB	8.1	Modal Background Noise Level (23:00 – 07:00)
Assessment Level	+/- 0 dB	11	The background level is subtracted from the rating level.
Conclusion BS 4142:2014 _[1]	+10 dB Significant Adverse Effects, +5 dB Adverse Effects, +0 dB Low Impact		
Assessment	+/- 0 dB		
Conclusion	The assessment level is 'Low Impact'		

12 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 residential dwellings and satisfy the local council's requirements.

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 and planning condition 15 can be discharged accordingly.

The operation of any proposed 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 no conflict with 'low impact' criteria and give a strong indication that complaint and impact on the local amenity is unlikely, provided the recommended maximum noise levels plant criteria is achieved as detailed within this report.

The plant criteria was set, as the new plant is yet to be designed and if adhered to, could discharge condition 13 accordingly.

Based on the calculations and assessments made within this report it is the professional opinion of Sound Advice Acoustics Ltd that the proposed development can demonstrate compliance with the National Planning Policy Framework 2021, NPPF & NPSE and that, with regards to sound, planning conditions 13 & 15 can be discharged.

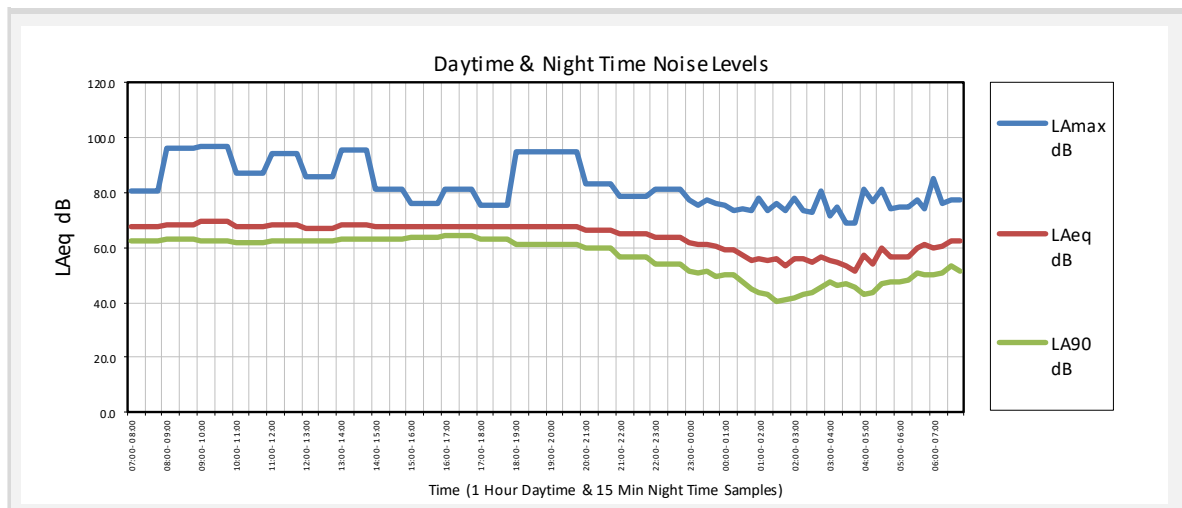
13 APPENDIX A - RESULTS

13.1 12th – 13th May 2023 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	67.2	96.5	62.0	68.1	63.2	58.9	59.5	65.2	59.7	48.5	39.3	28.1
NIGHTTIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	58.4	84.8	51.0	59.2	52.8	49.3	50.4	56.2	50.7	45.2	41.4	26.7

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	67.6	64.9	62.1	68.1	62.4	59.0	60.0	65.7	59.9	49.0	40.6	24.4
08:00 - 09:00	68.3	95.8	63.2	69.2	63.4	59.3	60.0	65.8	62.4	50.5	40.2	27.9
09:00 - 10:00	69.4	96.5	62.1	68.2	63.4	59.1	59.7	67.1	63.1	52.6	43.3	28.1
10:00 - 11:00	67.4	87.0	61.5	68.2	63.9	59.4	59.9	65.3	60.0	50.6	39.7	26.3
11:00 - 12:00	67.9	94.1	62.0	69.2	65.0	61.0	62.5	65.8	59.5	49.5	39.3	29.1
12:00 - 13:00	66.9	85.7	62.4	68.9	65.1	60.0	59.9	65.0	58.7	47.1	38.0	27.8
13:00 - 14:00	68.0	95.2	62.7	69.1	63.8	59.6	61.2	66.1	59.7	48.9	40.5	29.4
14:00 - 15:00	67.3	81.0	63.1	68.4	64.5	59.6	59.7	65.5	59.3	47.4	37.0	25.4
15:00 - 16:00	67.5	76.2	63.6	69.2	63.8	59.8	59.8	65.7	59.6	47.9	38.4	28.7
16:00 - 17:00	67.7	80.9	64.1	69.1	64.4	59.4	59.9	65.9	59.6	47.7	39.2	29.3
17:00 - 18:00	67.5	75.0	63.0	69.1	63.4	59.1	59.5	65.7	59.5	47.4	38.3	28.4
18:00 - 19:00	67.7	95.0	61.0	67.3	61.8	58.4	59.2	65.7	61.0	46.9	37.0	27.2
19:00 - 20:00	66.3	82.8	59.6	67.7	64.0	58.7	58.4	64.5	58.4	46.4	37.7	28.2
20:00 - 21:00	64.7	78.5	56.6	65.2	59.7	55.6	56.6	62.8	57.0	45.8	39.3	30.7
21:00 - 22:00	63.7	80.8	54.2	64.3	58.4	54.6	55.4	61.8	56.1	46.0	39.4	29.1
22:00 - 23:00	62.5	76.7	51.4	61.9	56.3	53.1	54.4	60.7	54.7	42.4	33.4	24.0

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	61.5	76.9	51.1	62.0	57.4	52.8	53.2	59.6	54.0	42.9	36.2	26.8
23:15 - 23:30	61.0	75.0	50.6	61.3	54.4	51.3	52.8	59.0	53.5	42.6	37.0	28.2
23:30 - 23:45	61.0	77.5	51.3	61.9	55.1	52.2	53.3	59.0	53.4	43.8	39.4	30.9
23:45 - 00:00	60.7	76.0	49.4	60.0	54.3	51.9	53.2	58.7	52.9	42.6	37.8	29.2
00:00 - 00:15	59.0	75.3	50.2	61.7	53.6	50.0	51.1	56.9	51.6	42.0	37.9	29.7
00:15 - 00:30	58.8	73.1	50.0	63.1	56.0	50.7	50.9	56.5	51.3	43.4	40.1	31.7
00:30 - 00:45	57.2	73.7	47.7	56.7	53.8	51.4	49.2	55.2	49.5	39.7	35.0	26.0
00:45 - 01:00	55.3	73.2	44.8	55.3	50.8	47.2	48.6	53.2	47.7	38.5	31.9	22.3
01:00 - 01:15	55.9	78.0	43.9	56.6	51.5	48.4	48.6	53.7	48.1	41.0	33.9	24.0
01:15 - 01:30	55.2	73.1	42.7	53.0	48.6	45.8	47.2	53.4	47.3	36.2	30.0	21.1
01:30 - 01:45	56.0	76.1	40.2	54.1	47.7	46.2	47.8	54.4	48.0	35.2	26.5	17.7
01:45 - 02:00	53.5	73.5	40.7	52.7	48.3	44.5	46.0	51.5	46.2	35.4	26.2	16.9
02:00 - 02:15	56.0	77.9	41.5	55.2	49.2	45.6	47.4	54.3	48.1	36.7	30.0	21.0
02:15 - 02:30	55.6	73.2	42.8	55.0	49.8	46.0	47.3	53.7	48.1	36.1	28.8	19.7
02:30 - 02:45	54.3	72.6	43.4	54.2	47.6	44.8	46.7	52.4	46.4	36.5	31.5	22.7
02:45 - 03:00	56.3	80.3	45.3	54.6	49.3	46.1	47.9	54.5	48.3	38.7	33.9	25.0
03:00 - 03:15	55.1	71.3	47.8	58.0	50.4	47.1	48.0	52.8	47.4	40.2	36.8	28.0
03:15 - 03:30	54.8	74.6	46.4	53.6	48.0	45.5	47.3	52.6	47.6	38.9	34.7	25.6
03:30 - 03:45	53.3	68.7	46.6	60.8	53.4	46.9	46.5	50.3	46.2	39.3	36.2	27.6
03:45 - 04:00	51.6	68.8	45.8	56.9	49.2	44.5	45.6	48.6	44.3	38.4	35.4	26.8
04:00 - 04:15	57.2	80.9	42.9	53.2	50.0	46.7	49.2	55.6	48.5	37.2	30.0	20.7
04:15 - 04:30	54.1	76.6	43.9	52.5	46.8	43.6	46.2	52.1	46.8	36.4	31.3	22.6
04:30 - 04:45	59.5	81.0	46.8	53.7	47.8	45.5	46.9	52.7	49.5	54.4	53.9	28.1
04:45 - 05:00	56.8	73.9	47.3	56.7	49.1	46.0	49.0	53.5	50.6	46.0	38.4	24.9
05:00 - 05:15	56.7	74.4	47.4	56.7	50.1	46.7	48.9	54.0	48.4	47.1	41.9	24.5
05:15 - 05:30	56.7	74.6	47.9	57.8	50.4	47.3	49.0	54.0	48.8	47.3	38.0	24.1
05:30 - 05:45	59.6	76.9	50.5	62.2	55.3	50.7	51.8	57.6	51.9	43.0	38.3	28.8
05:45 - 06:00	61.0	74.0	50.2	63.3	56.7	52.8	53.3	58.7	53.4	47.2	40.0	28.3
06:00 - 06:15	59.9	84.8	49.9	61.1	52.9	49.5	51.0	56.0	51.8	53.6	44.0	30.1
06:15 - 06:30	60.6	75.9	50.7	62.3	55.7	51.3	52.9	58.7	53.0	42.6	36.1	24.9
06:30 - 06:45	62.6	76.9	53.1	60.8	54.9	52.9	54.5	60.6	55.0	47.5	37.8	27.1
06:45 - 07:00	62.6	77.3	51.6	62.4	56.1	52.6	54.6	60.6	54.9	46.2	45.8	26.8

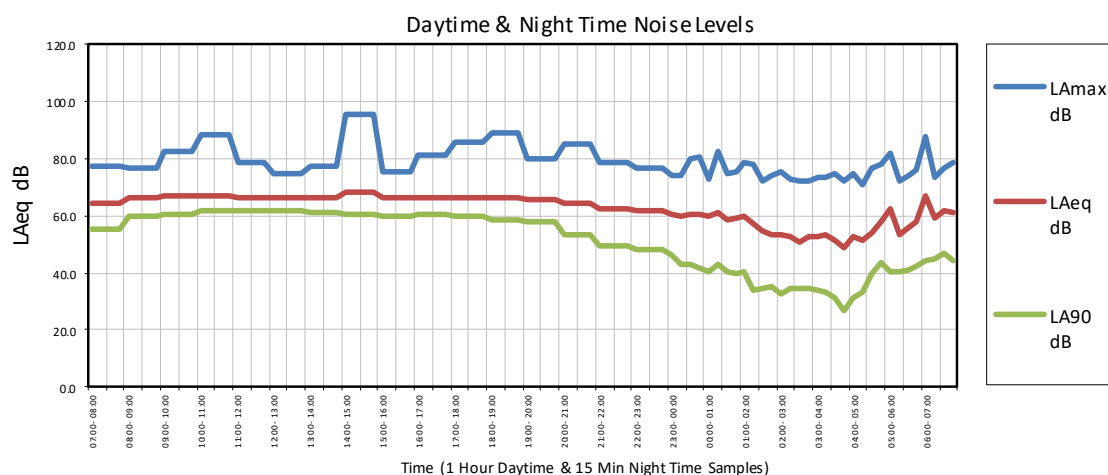


13.2 13th – 14th May 2023 Position 1

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	65.9	95.5	60.0	67.0	63.6	58.7	58.0	64.1	57.9	47.0	39.2	25.2
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	58.7	87.8	43.0	55.6	50.3	47.3	48.7	55.5	49.8	49.2	50.7	25.9

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	64.6	77.5	55.1	65.4	63.2	57.2	56.7	62.5	56.7	47.8	46.6	27.3
08:00 - 09:00	66.3	76.3	59.6	66.4	62.0	57.8	58.4	64.5	58.5	46.6	35.5	23.9
09:00 - 10:00	66.6	82.2	60.7	68.0	63.8	58.9	58.6	64.8	58.8	47.2	37.1	26.2
10:00 - 11:00	66.7	88.0	61.5	67.6	64.8	59.8	59.1	64.9	58.5	46.7	36.6	24.8
11:00 - 12:00	66.5	78.3	61.7	68.5	64.7	60.1	58.7	64.7	58.2	48.3	41.7	28.8
12:00 - 13:00	66.3	74.6	61.4	68.4	64.1	59.7	58.4	64.5	57.9	46.6	39.2	29.2
13:00 - 14:00	66.4	77.5	61.3	68.0	64.0	59.2	58.7	64.7	58.0	46.3	35.6	22.5
14:00 - 15:00	68.1	95.5	60.4	69.2	66.7	60.6	59.1	65.9	61.4	48.1	37.1	24.2
15:00 - 16:00	66.0	75.3	60.0	67.1	63.1	58.8	58.0	64.3	57.5	47.0	37.6	23.2
16:00 - 17:00	66.2	81.1	60.3	67.3	64.5	59.2	58.3	64.5	57.8	48.1	36.9	26.1
17:00 - 18:00	66.4	85.5	59.5	67.8	64.2	60.3	59.7	64.6	57.7	46.1	34.9	22.3
18:00 - 19:00	66.3	88.9	58.5	66.5	62.8	57.9	58.1	64.6	58.2	48.5	38.5	24.2
19:00 - 20:00	65.5	79.5	57.7	66.8	63.7	58.9	57.7	63.7	57.3	47.1	36.0	21.1
20:00 - 21:00	64.0	85.2	53.5	64.1	63.7	57.6	56.3	62.0	56.1	48.0	41.9	26.7
21:00 - 22:00	62.1	78.6	49.3	61.6	56.1	52.6	53.8	60.4	54.1	42.5	31.3	17.5
22:00 - 23:00	61.9	76.7	47.8	61.4	55.8	51.8	53.4	60.2	54.1	41.1	28.1	16.3

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	60.7	74.1	46.1	63.4	55.1	51.0	52.2	58.9	52.9	40.3	27.6	14.6
23:15 - 23:30	59.7	74.2	43.0	57.8	51.5	49.4	50.9	58.0	52.0	39.0	25.7	14.2
23:30 - 23:45	60.1	80.1	42.6	57.0	54.0	52.6	51.4	58.2	52.7	39.8	26.9	15.7
23:45 - 00:00	60.6	80.5	41.5	56.8	52.6	49.8	51.8	59.0	52.8	39.7	26.7	14.6
00:00 - 00:15	59.5	72.7	40.5	56.8	51.8	49.3	51.0	57.8	51.7	38.5	25.8	14.4
00:15 - 00:30	61.1	82.1	43.0	59.8	55.7	50.5	52.3	59.5	53.2	40.1	27.0	14.9
00:30 - 00:45	58.4	74.8	40.3	57.0	54.1	50.7	49.9	56.5	50.6	38.2	25.7	14.7
00:45 - 01:00	58.8	75.3	39.7	56.6	50.8	48.3	50.1	57.1	51.0	37.6	24.2	12.9
01:00 - 01:15	59.5	78.5	40.1	56.0	50.8	48.9	50.5	57.9	51.6	38.5	26.0	14.6
01:15 - 01:30	57.3	77.7	34.0	52.2	49.0	46.5	47.9	55.5	50.0	37.2	23.9	12.6
01:30 - 01:45	54.3	72.0	34.3	50.0	46.4	44.4	45.4	52.6	46.7	33.6	20.7	11.9
01:45 - 02:00	53.3	74.0	35.1	48.6	45.0	43.4	44.4	51.6	45.6	32.3	19.9	11.8
02:00 - 02:15	53.5	75.1	32.9	55.5	47.5	42.7	45.0	51.9	45.4	32.9	20.9	11.7
02:15 - 02:30	52.5	72.5	34.3	52.4	44.6	43.0	44.1	50.7	44.7	32.4	21.7	12.9
02:30 - 02:45	50.8	71.9	34.6	47.6	42.5	41.1	42.4	49.1	43.0	30.0	17.5	11.5
02:45 - 03:00	52.8	71.8	34.5	49.0	47.1	43.3	44.6	51.2	44.7	31.1	18.0	10.6
03:00 - 03:15	52.9	73.3	33.6	49.1	45.6	42.4	44.2	51.1	45.6	32.8	20.8	11.5
03:15 - 03:30	53.6	73.5	33.3	49.3	47.4	43.7	45.0	52.0	45.6	32.6	19.8	11.1
03:30 - 03:45	51.5	74.9	31.4	49.5	43.8	40.1	43.3	50.2	42.4	32.9	22.6	10.8
03:45 - 04:00	48.6	71.8	27.0	49.8	40.2	37.5	39.1	46.6	40.9	35.1	24.0	10.7
04:00 - 04:15	52.8	74.9	31.1	47.7	43.6	40.3	43.6	51.1	45.3	36.7	29.8	12.9
04:15 - 04:30	51.4	70.9	33.4	46.9	41.8	37.1	38.6	46.4	47.4	39.6	34.7	15.0
04:30 - 04:45	54.1	76.5	39.7	49.0	45.3	42.7	43.2	50.7	46.8	45.7	42.9	18.7
04:45 - 05:00	57.5	77.7	43.5	52.6	47.8	45.7	47.1	53.3	50.7	51.0	41.8	20.5
05:00 - 05:15	62.2	81.9	40.6	54.1	47.2	44.7	46.5	52.8	47.1	57.4	59.1	33.5
05:15 - 05:30	53.1	72.1	40.6	51.5	45.5	42.2	45.6	50.1	46.4	41.7	37.6	15.8
05:30 - 05:45	55.7	74.3	40.9	53.1	49.8	45.6	48.0	53.7	48.0	40.0	31.7	14.6
05:45 - 06:00	57.8	75.7	42.4	52.4	48.9	47.0	49.1	55.1	50.4	44.2	47.7	26.6
06:00 - 06:15	66.9	87.8	44.3	55.9	51.3	47.7	50.3	56.5	50.6	61.9	64.3	39.3
06:15 - 06:30	58.9	73.6	45.1	53.8	48.2	46.3	48.8	55.4	48.6	51.7	50.9	25.4

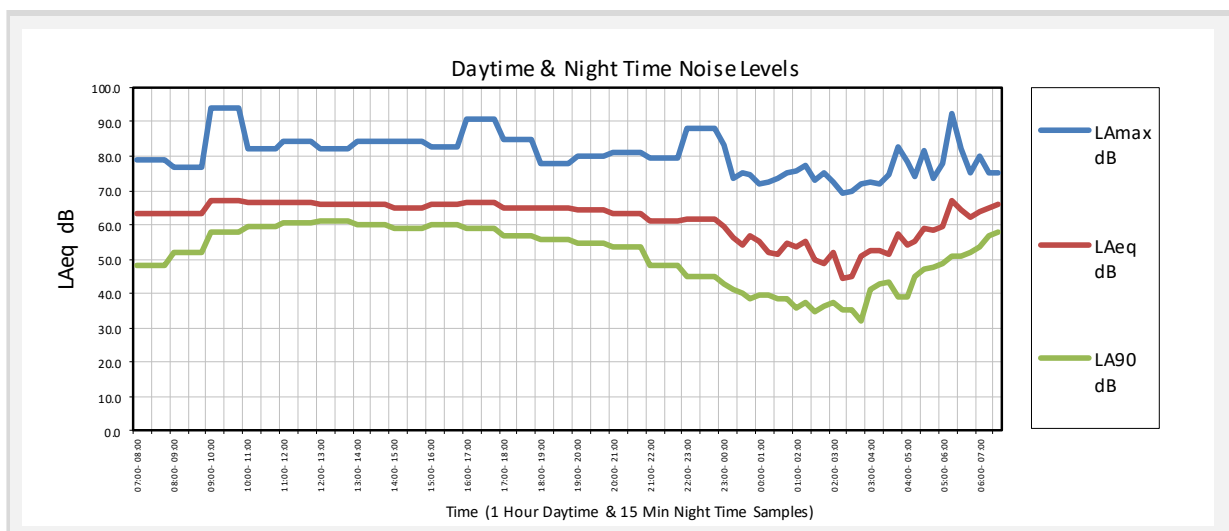


13.3 14th – 15th May 2023 Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmax	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 LAmx 16 HOUR	65.0	94.1	59.0	66.3	63.4	58.4	57.5	63.0	56.7	48.9	46.8	27.0
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmx 8 HOUR	59.9	92.5	39.0	57.6	53.0	49.6	51.0	57.2	51.6	49.9	49.2	26.2

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	63.1	79.1	48.4	62.2	57.9	52.8	53.7	60.1	54.2	53.0	55.1	30.5
08:00 - 09:00	63.5	76.9	51.9	64.0	57.7	54.0	55.3	61.7	55.7	44.9	39.6	19.4
09:00 - 10:00	66.9	94.1	58.0	67.6	63.6	58.5	59.1	64.8	59.0	50.9	49.4	31.0
10:00 - 11:00	66.3	82.3	59.4	67.0	62.5	58.1	58.5	64.3	58.2	50.7	48.6	26.6
11:00 - 12:00	66.4	84.3	60.7	67.6	67.5	62.8	59.5	64.3	57.9	48.3	39.3	23.9
12:00 - 13:00	66.0	81.9	61.1	67.7	65.5	59.6	58.6	64.1	57.8	47.0	40.3	24.6
13:00 - 14:00	65.9	84.4	60.2	68.1	64.1	60.5	58.0	63.8	57.2	50.5	50.9	31.7
14:00 - 15:00	65.1	84.3	58.9	67.6	64.8	59.2	57.3	63.2	56.6	49.6	39.2	24.3
15:00 - 16:00	65.7	82.9	60.2	68.6	66.9	60.0	58.1	63.8	57.2	47.2	43.0	27.7
16:00 - 17:00	66.6	91.0	59.1	68.6	64.9	61.1	60.6	64.4	57.9	51.3	48.8	30.7
17:00 - 18:00	65.0	84.7	56.7	66.2	62.0	56.7	57.0	63.2	56.7	49.8	38.6	23.5
18:00 - 19:00	65.0	77.7	56.0	65.6	62.4	57.2	57.3	63.2	56.7	45.6	36.8	22.6
19:00 - 20:00	64.1	79.9	54.6	64.6	61.5	56.2	56.0	62.2	56.3	45.3	36.6	21.5
20:00 - 21:00	63.5	81.2	53.4	63.5	59.5	56.4	56.6	61.5	55.3	47.2	41.2	24.3
21:00 - 22:00	60.9	79.2	48.1	61.0	55.2	51.4	53.1	59.2	52.9	41.6	30.9	17.4
22:00 - 23:00	61.5	88.3	45.2	59.4	59.5	53.5	53.2	59.6	53.7	44.2	34.1	23.8

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	59.4	83.4	43.0	58.1	54.8	55.7	50.2	57.6	51.4	38.6	26.3	15.5
23:15 - 23:30	56.4	73.3	41.1	54.1	58.1	53.5	48.9	54.1	48.2	35.7	26.0	17.6
23:30 - 23:45	54.2	75.4	40.0	51.7	46.1	43.5	46.0	52.4	46.7	33.7	24.3	15.4
23:45 - 00:00	56.9	74.6	38.6	51.9	48.1	45.1	48.1	55.4	49.0	35.6	23.0	14.2
00:00 - 00:15	54.9	71.8	39.5	57.2	50.6	46.5	46.9	53.2	47.1	33.7	21.9	14.4
00:15 - 00:30	51.9	72.4	39.4	47.4	43.8	42.2	44.0	50.4	43.4	30.1	20.2	13.3
00:30 - 00:45	51.2	73.6	38.3	49.0	43.6	41.5	43.0	49.6	42.6	31.4	21.9	13.1
00:45 - 01:00	54.8	74.9	38.4	51.3	49.9	45.6	46.0	53.0	47.3	33.8	20.5	11.6
01:00 - 01:15	53.7	75.6	35.7	50.4	45.4	42.4	45.1	52.1	45.9	32.3	20.2	12.0
01:15 - 01:30	55.4	77.1	37.6	50.8	47.6	44.2	46.5	53.8	47.5	34.6	22.0	12.3
01:30 - 01:45	49.7	73.1	35.0	51.2	42.0	39.6	41.4	47.7	42.4	29.1	18.9	11.5
01:45 - 02:00	48.8	74.9	36.3	43.2	39.5	37.0	40.9	46.8	41.4	27.9	20.0	13.1
02:00 - 02:15	52.2	72.5	37.4	52.5	43.4	40.8	45.4	50.4	44.1	31.2	25.4	17.3
02:15 - 02:30	44.5	69.1	35.3	40.2	36.8	34.6	38.3	42.7	35.9	22.9	15.6	11.0
02:30 - 02:45	45.2	69.7	35.2	42.5	36.9	35.6	38.4	43.5	36.4	23.7	15.6	10.8
02:45 - 03:00	50.7	72.0	32.1	48.4	42.6	40.0	41.7	49.0	43.0	30.8	19.6	11.8
03:00 - 03:15	52.5	72.3	41.0	48.5	44.1	42.3	45.2	50.8	43.9	35.9	32.4	25.0
03:15 - 03:30	52.5	71.7	42.5	44.9	42.4	40.3	43.9	50.4	45.3	39.5	35.4	27.3
03:30 - 03:45	51.1	74.5	43.3	45.7	41.0	40.6	42.7	48.3	44.3	40.6	36.6	28.8
03:45 - 04:00	57.3	82.5	38.8	51.6	48.0	44.1	48.2	55.8	48.8	40.7	34.7	23.2
04:00 - 04:15	54.1	78.2	39.2	48.4	44.1	41.3	44.3	51.9	47.4	39.5	33.2	21.8
04:15 - 04:30	55.4	73.9	44.7	52.9	49.1	45.4	47.3	52.3	49.5	42.4	35.2	22.8
04:30 - 04:45	59.0	81.5	47.1	57.9	52.8	48.4	51.6	56.4	51.8	47.5	39.7	25.7
04:45 - 05:00	58.2	73.5	47.5	56.3	50.4	48.2	49.9	55.7	50.9	46.2	40.4	24.0
05:00 - 05:15	59.7	77.7	48.5	55.3	50.8	48.8	51.1	57.4	52.5	47.3	41.6	24.0
05:15 - 05:30	67.3	92.5	50.7	61.8	57.7	50.7	52.6	58.4	53.0	63.1	63.2	38.1
05:30 - 05:45	64.1	82.4	51.1	58.4	53.7	50.2	53.2	59.6	54.2	58.0	56.9	33.0
05:45 - 06:00	62.1	75.0	52.2	59.6	55.3	52.5	54.2	60.2	54.5	44.9	39.3	22.6
06:00 - 06:15	63.6	80.0	53.6	61.7	57.2	53.1	55.7	61.8	56.1	44.4	35.5	22.2
06:15 - 06:30	65.1	75.3	57.0	63.4	58.1	54.4	57.0	63.3	57.6	46.2	39.6	21.6
06:30 - 06:45	66.0	75.4	57.7	65.3	60.4	56.5	58.3	64.2	58.4	46.9	38.4	24.2
06:45 - 07:00	66.3	77.2	59.0	65.8	59.3	56.3	58.4	64.5	58.7	47.0	41.2	27.7

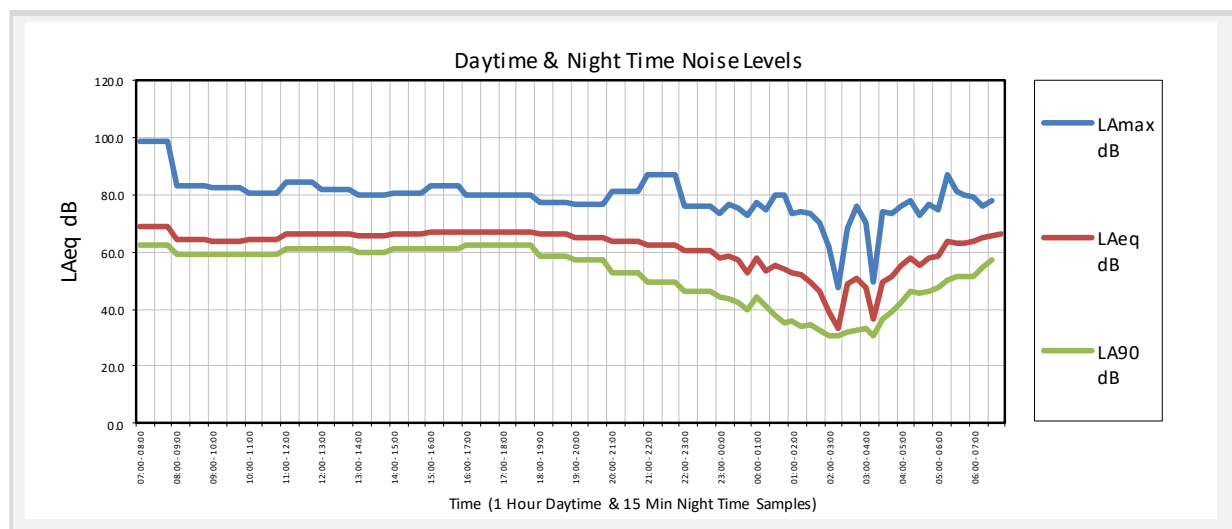


13.4 15th – 16th May 2023 Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmx	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 LAmx 16 HOUR	65.7	98.6	59.0	67.5	62.7	57.9	58.3	63.8	57.5	47.5	41.0	27.3
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmx 8 HOUR	59.1	86.9	51.0	57.8	53.0	49.6	51.6	57.1	50.9	44.8	43.1	21.5

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	69.0	98.6	62.3	68.5	63.3	58.7	60.0	66.8	62.3	51.1	42.3	26.8
08:00 - 09:00	64.4	82.8	58.9	68.8	62.4	58.0	57.7	62.2	56.5	48.8	45.2	30.1
09:00 - 10:00	63.9	82.4	59.4	68.5	62.5	57.4	57.4	61.6	55.7	48.8	45.0	29.0
10:00 - 11:00	64.2	80.4	58.9	68.8	63.4	57.8	58.1	62.1	56.0	47.3	40.1	29.3
11:00 - 12:00	66.5	84.6	61.1	68.4	63.7	58.7	59.6	64.6	58.1	49.6	44.8	30.3
12:00 - 13:00	66.3	81.6	60.9	68.2	62.7	59.2	59.6	64.5	57.8	46.8	39.7	27.2
13:00 - 14:00	65.9	79.9	60.1	67.3	62.3	58.1	58.7	64.2	57.3	46.1	37.0	27.7
14:00 - 15:00	66.3	80.2	60.7	68.2	64.2	59.4	59.1	64.6	57.7	45.6	34.5	23.6
15:00 - 16:00	66.5	82.9	61.3	67.7	64.5	60.7	60.3	64.5	57.9	48.1	42.4	32.8
16:00 - 17:00	66.6	79.7	62.3	68.4	63.4	58.9	59.4	64.9	58.1	46.0	35.0	22.1
17:00 - 18:00	66.9	79.9	62.4	68.4	64.4	58.8	59.2	65.3	58.5	47.2	40.6	27.8
18:00 - 19:00	65.9	77.1	58.5	66.8	61.2	57.1	58.0	64.4	57.5	44.6	32.6	19.0
19:00 - 20:00	65.1	76.5	57.1	66.2	63.8	57.0	57.1	63.4	56.8	44.6	33.2	18.7
20:00 - 21:00	63.9	81.2	52.5	65.0	59.2	55.2	55.9	61.9	55.4	50.6	43.4	21.9
21:00 - 22:00	62.4	87.2	49.2	62.8	56.9	52.2	54.1	60.7	54.5	43.5	32.9	17.9
22:00 - 23:00	60.1	76.0	46.4	59.5	54.8	51.5	52.9	58.4	51.9	38.6	25.5	15.3

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	57.5	73.3	44.1	59.5	52.4	47.7	50.0	55.7	49.9	37.2	23.8	14.5
23:15 - 23:30	58.2	76.7	43.8	54.1	50.5	47.6	50.1	56.6	49.9	36.8	23.5	13.2
23:30 - 23:45	57.2	75.4	42.2	52.9	48.3	46.0	48.2	55.5	49.6	35.8	21.5	12.1
23:45 - 00:00	52.5	72.6	39.8	48.0	44.0	41.6	45.0	51.0	44.2	30.4	17.7	10.6
00:00 - 00:15	57.9	77.2	44.4	56.9	55.1	53.9	51.7	55.8	49.4	38.3	27.9	16.0
00:15 - 00:30	53.3	74.8	40.9	53.4	48.6	46.8	47.4	51.5	44.7	32.4	21.5	12.1
00:30 - 00:45	55.0	79.6	37.6	49.4	46.5	43.8	46.5	53.4	47.2	33.3	20.2	11.4
00:45 - 01:00	54.0	79.7	35.5	50.9	46.3	43.1	46.9	52.4	45.1	32.4	19.6	11.5
01:00 - 01:15	52.5	73.6	35.5	48.1	44.1	42.4	44.4	50.9	44.4	31.6	19.4	11.2
01:15 - 01:30	51.9	73.9	33.7	49.7	43.6	39.9	42.7	50.0	44.6	31.4	17.7	10.6
01:30 - 01:45	49.4	73.2	34.6	46.3	42.1	39.1	41.0	47.8	41.3	27.4	15.5	10.2
01:45 - 02:00	46.5	69.9	32.6	42.2	38.1	35.5	38.6	45.0	37.8	24.6	15.6	11.0
02:00 - 02:15	39.2	61.4	30.5	42.2	38.5	35.2	34.3	37.0	30.2	18.5	12.7	10.1
02:15 - 02:30	33.5	47.3	30.3	38.6	34.4	29.9	32.3	30.2	19.7	12.3	13.8	11.5
02:30 - 02:45	48.5	68.2	31.8	47.1	42.1	40.0	40.5	46.5	41.2	28.9	17.1	11.0
02:45 - 03:00	51.0	75.9	32.3	49.1	42.1	39.1	42.8	49.5	42.6	29.9	18.1	10.7
03:00 - 03:15	47.2	70.0	33.5	43.0	41.1	38.5	39.5	45.7	38.3	25.2	15.3	10.4
03:15 - 03:30	36.4	49.3	30.9	38.3	34.4	31.6	33.5	34.3	23.4	12.1	12.1	10.0
03:30 - 03:45	49.4	73.7	36.5	45.9	43.2	40.6	42.3	47.7	41.4	29.5	17.1	11.6
03:45 - 04:00	51.6	73.4	38.7	46.5	43.5	39.9	44.5	49.7	43.6	34.1	23.0	11.1
04:00 - 04:15	55.4	76.2	42.4	49.0	45.7	43.2	46.9	53.7	47.8	37.1	24.3	11.3
04:15 - 04:30	57.8	77.8	45.9	53.9	48.6	44.6	49.4	52.5	47.2	52.2	50.5	29.2
04:30 - 04:45	55.4	72.9	45.3	50.7	45.8	44.1	47.0	51.9	49.3	45.4	41.1	23.7
04:45 - 05:00	57.6	76.5	46.0	56.7	48.4	45.8	49.0	55.0	49.8	47.9	41.7	18.5
05:00 - 05:15	58.6	74.6	47.7	61.1	52.0	49.3	51.4	56.4	50.9	44.0	42.0	19.6
05:15 - 05:30	63.7	86.9	50.2	62.0	58.7	56.3	57.3	62.0	54.3	48.9	47.6	28.8
05:30 - 05:45	63.3	81.1	51.1	59.4	56.5	53.4	55.6	59.7	53.6	54.6	55.7	31.3
05:45 - 06:00	62.9	79.6	51.3	61.0	58.2	53.3	56.5	60.9	54.9	45.8	40.7	20.2
06:00 - 06:15	63.6	79.3	51.3	62.7	58.5	53.8	56.1	61.7	55.7	46.9	41.0	21.3
06:15 - 06:30	64.8	76.1	54.8	63.3	57.4	54.0	57.1	62.9	56.9	47.5	41.8	20.4
06:30 - 06:45	65.5	77.7	56.8	64.6	59.5	56.0	57.5	63.7	57.7	46.7	41.9	22.9
06:45 - 07:00	65.9	76.6	55.8	65.5	59.7	56.0	58.2	64.1	58.1	49.2	41.0	24.3

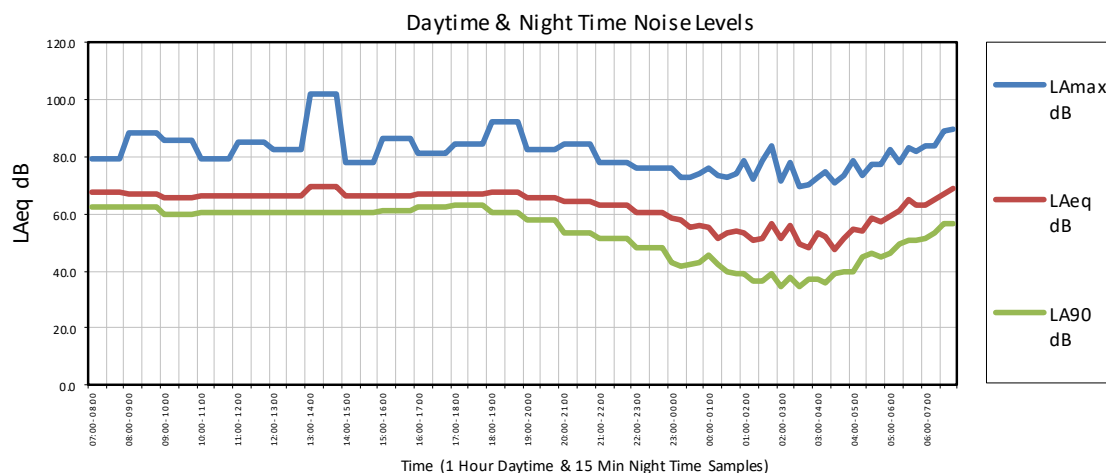


13.5 16th – 17th May 2023 Position 1

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmx	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 LAmx 16 HOUR	66.4	102.0	60.0	67.7	63.0	58.3	58.7	64.4	58.9	48.2	41.3	25.8
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmx 8 HOUR	59.9	89.2	39.0	57.8	53.0	49.3	51.4	56.9	51.2	50.7	49.4	29.8

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	67.7	78.9	62.5	68.7	63.9	58.7	60.2	65.8	59.8	49.4	40.8	24.8
08:00 - 09:00	67.0	88.5	62.2	68.3	62.7	58.3	59.5	65.1	59.0	51.1	42.8	29.7
09:00 - 10:00	65.9	85.7	59.5	68.8	62.5	57.8	58.8	63.9	57.6	49.6	41.8	27.1
10:00 - 11:00	66.1	79.2	60.5	67.4	62.5	57.9	58.8	64.3	57.7	46.6	40.6	24.6
11:00 - 12:00	66.3	85.2	60.4	68.4	62.7	58.7	59.6	64.5	57.7	49.9	43.0	27.7
12:00 - 13:00	66.3	82.2	60.1	69.1	64.0	59.7	59.6	64.3	58.0	47.1	36.1	22.3
13:00 - 14:00	69.6	102.0	60.4	68.2	63.8	60.9	60.2	66.1	65.2	49.8	46.3	29.5
14:00 - 15:00	66.1	78.1	60.2	68.0	63.1	59.3	58.9	64.4	57.4	45.3	34.7	21.9
15:00 - 16:00	66.3	86.2	61.0	68.9	63.1	60.3	59.6	64.5	57.7	45.9	36.5	23.6
16:00 - 17:00	66.8	80.9	62.3	69.3	66.7	59.6	59.3	65.0	58.3	47.2	38.8	25.3
17:00 - 18:00	67.2	84.3	63.0	69.1	63.6	58.8	59.4	65.4	58.8	49.7	37.2	23.7
18:00 - 19:00	67.6	92.4	60.5	66.9	61.6	57.2	58.9	65.6	60.4	49.1	44.2	26.2
19:00 - 20:00	65.4	82.4	57.7	65.5	60.2	55.8	57.3	63.7	57.1	48.3	37.5	24.1
20:00 - 21:00	64.0	84.3	53.2	64.4	63.7	55.0	56.0	62.1	55.7	47.4	44.9	28.3
21:00 - 22:00	62.9	78.1	51.1	63.5	59.2	54.1	54.9	61.1	54.7	46.0	38.0	19.9
22:00 - 23:00	60.4	75.9	48.0	59.2	54.1	50.4	52.4	58.7	52.3	39.2	26.3	16.4

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	58.3	75.8	42.7	56.2	51.5	47.7	50.1	56.4	50.7	37.5	25.0	13.2
23:15 - 23:30	57.7	72.9	41.8	56.2	49.5	47.2	49.6	56.0	49.7	36.7	24.0	12.8
23:30 - 23:45	55.0	72.4	42.0	53.3	48.8	47.7	47.9	52.9	47.4	34.4	22.9	15.1
23:45 - 00:00	55.7	74.2	43.1	54.5	49.0	47.0	48.3	53.9	47.6	34.4	21.7	12.0
00:00 - 00:15	55.2	75.9	45.3	52.5	49.5	47.3	48.7	53.3	47.2	34.0	24.1	18.6
00:15 - 00:30	51.4	73.5	42.0	48.9	46.1	43.1	46.1	49.6	42.6	28.8	17.3	10.9
00:30 - 00:45	53.1	72.4	39.4	52.4	49.0	44.3	45.9	51.1	45.8	33.3	21.9	15.3
00:45 - 01:00	53.8	73.8	38.9	58.7	54.5	44.7	50.2	51.3	45.2	31.5	18.5	11.0
01:00 - 01:15	53.1	78.8	39.3	50.6	46.6	44.5	47.5	51.2	44.4	31.2	18.5	11.0
01:15 - 01:30	50.4	71.8	36.4	50.0	42.4	39.2	42.4	48.5	43.0	28.4	19.1	11.7
01:30 - 01:45	51.4	78.7	36.6	45.8	50.4	42.6	44.1	49.5	43.5	28.9	17.5	11.0
01:45 - 02:00	56.7	83.6	39.2	53.1	48.0	44.6	47.9	55.1	48.9	35.7	24.6	16.6
02:00 - 02:15	51.4	71.6	34.8	49.2	43.4	40.6	43.5	49.7	43.5	30.6	18.9	12.2
02:15 - 02:30	55.6	77.6	37.5	52.4	46.5	43.4	47.0	54.1	47.0	32.8	20.2	11.3
02:30 - 02:45	49.6	69.7	34.4	51.3	43.5	40.7	41.3	47.7	42.1	30.3	24.3	11.9
02:45 - 03:00	48.1	70.1	36.9	47.1	42.2	39.6	40.7	46.1	40.5	27.5	15.8	10.2
03:00 - 03:15	53.0	72.5	37.4	47.9	44.4	41.8	44.9	51.3	45.4	32.6	19.2	10.6
03:15 - 03:30	51.9	74.5	35.8	48.9	44.0	41.1	43.5	50.3	44.0	31.7	20.4	11.7
03:30 - 03:45	47.4	70.9	39.3	51.4	42.0	39.9	43.0	44.6	39.3	33.1	22.5	10.3
03:45 - 04:00	51.1	73.4	39.6	48.4	44.1	41.6	43.9	48.9	44.1	34.8	24.6	11.3
04:00 - 04:15	54.8	78.5	39.8	48.5	44.7	42.9	45.8	52.9	47.8	36.6	23.8	11.5
04:15 - 04:30	53.9	73.3	44.6	48.0	44.4	42.2	44.0	49.6	48.4	44.0	42.0	22.6
04:30 - 04:45	58.2	77.2	45.9	58.7	53.7	48.6	51.8	55.2	49.8	48.6	45.4	27.0
04:45 - 05:00	57.1	77.1	44.7	54.8	48.0	45.3	48.5	54.4	49.8	46.5	42.7	24.7
05:00 - 05:15	59.4	82.7	46.3	55.4	51.5	48.0	50.8	56.4	50.9	51.4	45.8	27.8
05:15 - 05:30	61.1	78.0	49.2	57.2	52.4	49.7	52.6	58.8	53.5	49.8	44.2	24.0
05:30 - 05:45	64.9	83.0	50.7	61.0	57.4	54.3	55.4	61.0	55.1	56.4	59.0	35.1
05:45 - 06:00	62.7	81.6	50.8	61.8	56.9	51.8	55.2	60.3	54.4	51.9	46.1	25.9
06:00 - 06:15	63.0	83.4	51.1	60.5	55.5	52.2	54.3	60.3	54.6	53.9	50.5	28.6
06:15 - 06:30	65.0	83.7	53.6	64.1	59.5	55.4	57.1	62.9	57.2	51.3	50.2	33.2

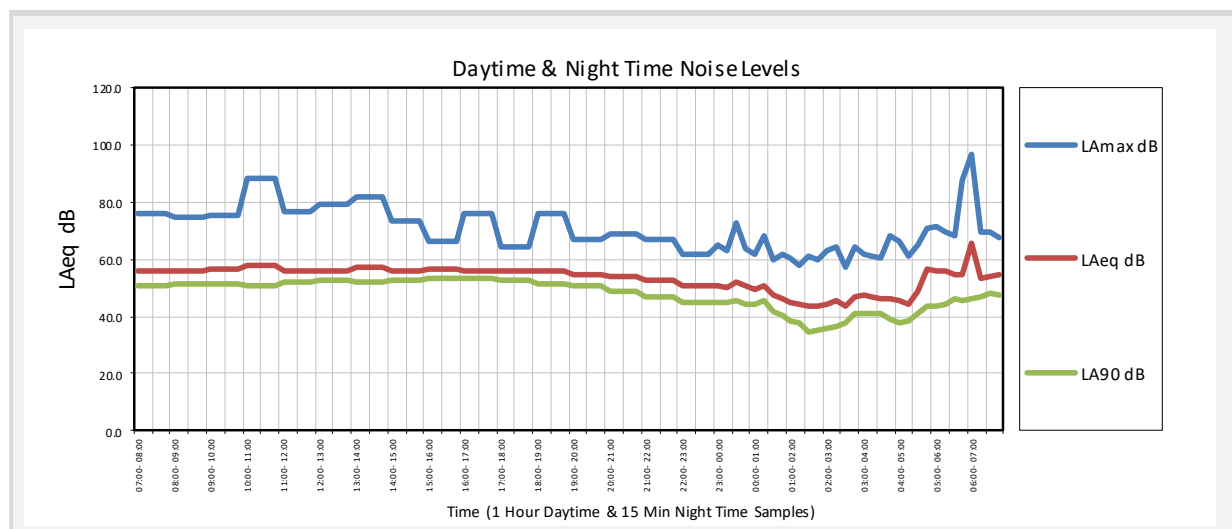


13.6 12th – 13th May 2023 Position 2

NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmx	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 LAmx 16 HOUR	55.6	88.3	51.0	61.5	54.5	49.0	50.0	52.9	46.9	44.0	40.2	24.0
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmx 8 HOUR	53.5	96.6	38.0	54.2	46.9	43.8	43.7	45.3	41.4	49.7	46.8	25.6

DAYTIME NOISE LEVELS 07:00 - 23:00 1 HOUR SAMPLES												
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
07:00 - 08:00	56.0	75.9	51.0	61.5	53.1	47.8	49.6	52.6	48.2	47.2	38.7	19.2
08:00 - 09:00	55.6	74.3	51.0	62.5	53.9	47.6	49.6	52.5	47.6	45.2	35.5	17.2
09:00 - 10:00	56.4	75.2	51.0	61.8	54.2	47.9	49.6	52.9	48.4	48.0	39.9	19.9
10:00 - 11:00	57.7	88.3	51.0	61.4	54.2	47.8	49.6	52.5	49.0	51.5	48.7	28.4
11:00 - 12:00	55.9	76.7	52.0	62.3	55.8	49.8	51.1	53.3	46.9	42.6	38.7	23.7
12:00 - 13:00	55.9	79.0	53.0	62.6	57.6	52.1	51.2	53.0	46.4	40.2	43.3	25.5
13:00 - 14:00	56.9	81.9	52.0	62.3	55.1	50.2	52.6	54.7	46.7	39.6	35.2	22.2
14:00 - 15:00	55.7	73.4	52.0	62.0	55.5	49.5	50.5	53.3	47.0	40.8	37.4	22.3
15:00 - 16:00	56.3	66.1	53.0	62.6	56.2	50.6	51.1	53.8	47.8	40.5	36.3	23.9
16:00 - 17:00	56.1	76.1	53.0	62.3	54.6	49.3	50.6	53.9	46.8	41.1	39.5	25.2
17:00 - 18:00	55.8	64.3	53.0	62.6	54.8	49.3	50.3	53.7	46.8	38.2	35.3	24.2
18:00 - 19:00	55.7	75.7	51.0	60.6	53.2	48.4	49.8	53.6	47.6	38.6	35.2	22.8
19:00 - 20:00	54.8	66.8	51.0	61.1	54.6	48.7	49.3	52.5	45.9	39.0	35.6	24.0
20:00 - 21:00	53.9	68.6	49.0	60.0	52.5	48.3	48.3	51.2	45.7	39.9	38.4	27.7
21:00 - 22:00	52.5	66.8	47.0	57.2	50.6	47.1	47.0	50.1	43.9	37.3	34.3	23.1
22:00 - 23:00	50.7	61.5	45.0	56.2	48.2	44.1	45.0	48.5	41.9	32.9	30.3	19.8

NIGHT TIME NOISE LEVELS 23:00 - 07:00 15 MINUTE SAMPLES												
Date / Time	LAeq	LAmx	LA90	63	125	250	500	1.0 k	2.0 k	4.0 k	8.0 k	16.0 k
23:00 - 23:15	50.8	65.1	45.0	57.3	49.4	46.3	45.1	48.1	42.4	36.8	35.7	25.2
23:15 - 23:30	50.2	62.7	45.0	56.0	48.2	45.6	45.1	47.5	41.7	36.3	35.1	24.7
23:30 - 23:45	51.9	72.9	46.0	59.1	51.8	48.7	47.3	48.5	43.2	39.2	38.6	28.1
23:45 - 00:00	50.4	63.9	44.0	55.3	48.6	46.0	45.5	47.2	42.1	37.7	36.7	26.0
00:00 - 00:15	49.5	61.7	44.0	54.2	47.2	45.0	44.2	46.7	41.0	35.6	33.8	22.9
00:15 - 00:30	50.7	68.2	45.0	60.5	52.2	47.2	45.0	46.5	42.6	40.1	39.7	29.3
00:30 - 00:45	47.6	59.7	42.0	52.2	47.4	44.1	42.4	44.3	39.2	35.2	34.0	23.1
00:45 - 01:00	46.3	61.9	40.0	49.9	44.6	41.6	41.6	43.5	37.8	31.3	28.0	17.1
01:00 - 01:15	44.8	60.4	38.0	49.4	43.2	40.0	40.4	42.0	36.0	30.0	27.3	17.2
01:15 - 01:30	44.2	58.0	38.0	48.1	43.5	39.4	39.9	41.4	35.2	29.7	28.3	18.0
01:30 - 01:45	43.7	60.8	35.0	48.5	40.0	36.7	38.5	41.7	34.7	25.1	21.8	13.8
01:45 - 02:00	43.6	59.5	35.0	48.3	41.3	37.4	39.2	41.2	34.6	26.0	22.4	14.4
02:00 - 02:15	44.2	63.0	36.0	48.1	41.7	38.1	38.9	42.0	35.1	26.8	24.0	14.9
02:15 - 02:30	45.3	64.5	36.0	54.0	46.5	41.2	40.8	42.3	36.1	31.1	31.3	21.3
02:30 - 02:45	43.4	57.3	38.0	47.9	41.1	38.9	39.2	40.5	34.8	29.4	26.3	15.9
02:45 - 03:00	46.7	64.2	41.0	49.7	43.3	40.8	41.3	44.1	38.3	32.9	30.3	19.4
03:00 - 03:15	47.5	62.0	41.0	53.3	46.6	43.8	42.5	43.6	39.5	36.6	35.5	24.7
03:15 - 03:30	46.7	61.3	41.0	52.6	45.7	44.2	42.1	42.9	38.5	34.8	33.2	22.4
03:30 - 03:45	46.4	60.7	41.0	51.2	45.0	43.2	41.5	42.5	38.4	35.2	33.5	22.5
03:45 - 04:00	46.4	68.0	39.0	56.1	48.5	44.8	41.9	41.8	37.7	35.5	34.8	24.3
04:00 - 04:15	45.5	66.2	38.0	47.5	42.0	39.1	40.8	43.3	36.1	29.4	26.8	16.7
04:15 - 04:30	44.4	61.3	38.0	48.3	42.0	39.6	40.1	41.4	35.6	30.7	29.3	18.9
04:30 - 04:45	48.9	65.0	41.0	48.5	42.1	40.3	40.1	41.9	44.1	40.9	38.3	19.0
04:45 - 05:00	56.2	70.8	43.0	49.9	42.5	40.4	41.5	42.6	46.8	50.8	53.1	27.3
05:00 - 05:15	56.1	71.7	43.0	49.0	42.5	40.5	42.2	43.4	41.7	51.6	53.2	28.1
05:15 - 05:30	55.8	69.4	44.0	52.3	43.8	41.9	45.8	44.2	40.9	51.4	52.3	27.5
05:30 - 05:45	54.6	68.0	46.0	53.7	47.9	45.8	47.2	47.1	44.8	50.8	42.1	24.0
05:45 - 06:00	54.5	87.5	46.0	55.2	47.3	44.5	45.7	47.2	42.8	48.6	50.3	28.8
06:00 - 06:15	65.3	96.6	46.0	58.6	50.3	45.6	45.6	47.1	44.8	63.3	58.7	35.8
06:15 - 06:30	53.1	69.3	47.0	56.7	48.7	45.9	46.4	47.5	43.3	48.2	39.3	23.2
06:30 - 06:45	53.7	69.2	48.0	56.3	48.6	46.7	47.4	49.5	44.4	47.1	40.5	24.7
06:45 - 07:00	54.4	67.7	48.0	55.5	47.8	44.8	46.5	49.4	45.2	49.5	39.6	21.0

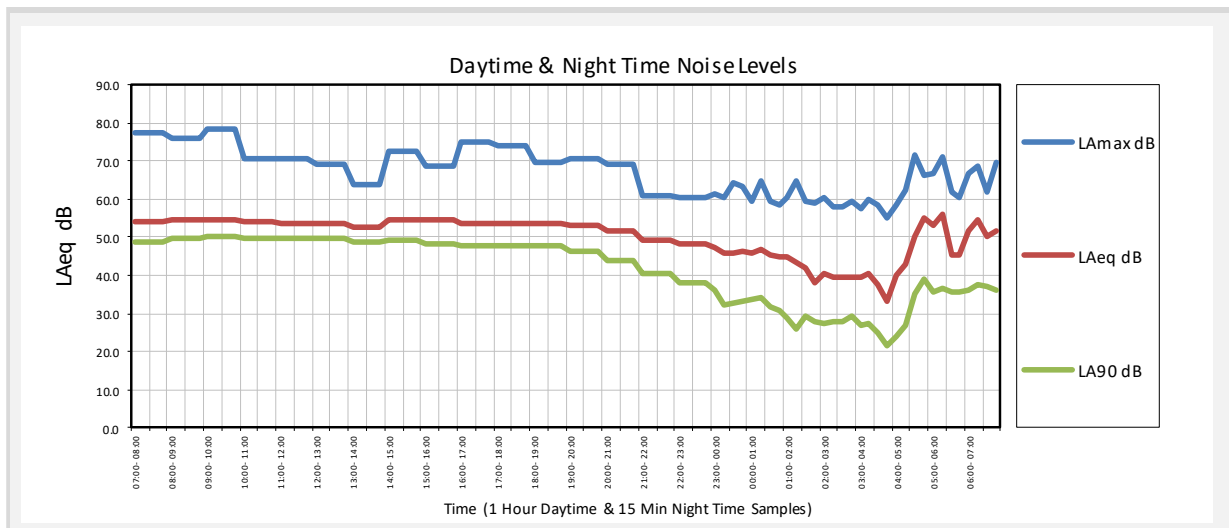


13.7 13th – 14th May 2023 Position 2

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 & Corresponding LAmaz 16 HOUR	53.4	78.4	49.0	59.7	54.7	48.7	47.5	50.6	44.7	41.2	37.9	19.7
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Corresponding LAmaz 8 HOUR	48.4	71.7	36.0	48.7	41.4	35.7	38.2	41.6	37.7	42.5	43.9	18.7

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	53.9	77.3	49.0	58.7	54.4	48.2	48.4	50.9	44.4	41.2	44.1	25.1
08:00 - 09:00	54.7	75.8	50.0	59.4	52.6	46.5	48.2	51.7	47.1	42.8	42.0	23.7
09:00 - 10:00	54.6	78.4	50.0	60.8	55.1	47.6	48.2	51.8	45.2	45.4	38.2	20.4
10:00 - 11:00	54.0	70.4	50.0	60.5	54.6	48.2	48.2	51.7	44.6	40.7	34.6	17.7
11:00 - 12:00	53.8	70.6	50.0	61.2	54.5	47.1	47.6	51.3	44.0	43.0	37.8	18.9
12:00 - 13:00	53.4	69.1	49.0	60.9	55.4	47.9	47.8	51.2	43.8	38.6	37.4	18.7
13:00 - 14:00	52.8	63.7	49.0	60.4	55.2	47.2	47.2	50.6	43.1	37.9	32.6	16.2
14:00 - 15:00	54.7	72.7	49.0	61.3	58.6	53.4	48.9	51.8	46.2	38.1	32.7	19.3
15:00 - 16:00	54.6	68.6	48.0	59.8	57.6	54.6	49.5	50.8	46.3	40.9	35.9	21.3
16:00 - 17:00	53.5	75.0	48.0	59.8	54.8	48.4	47.0	50.2	44.4	44.5	39.7	18.7
17:00 - 18:00	53.8	73.7	48.0	60.3	54.0	46.7	48.2	51.0	45.0	40.6	40.7	21.6
18:00 - 19:00	53.6	69.4	48.0	59.4	53.7	47.4	47.8	50.7	45.9	41.2	33.9	15.6
19:00 - 20:00	52.9	70.3	46.0	59.8	53.2	46.1	46.9	50.0	45.3	40.0	32.5	14.9
20:00 - 21:00	51.7	68.9	44.0	57.3	55.1	44.5	45.3	48.5	44.5	39.9	32.6	16.3
21:00 - 22:00	49.3	60.6	40.0	55.0	46.7	41.0	42.9	47.0	40.4	37.1	29.3	13.5
22:00 - 23:00	48.1	60.1	38.0	54.3	45.9	40.1	41.9	46.2	39.6	26.4	15.7	11.9

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	47.2	61.5	36.0	55.8	45.5	39.0	40.9	45.3	38.6	25.5	15.5	11.8
23:15 - 23:30	46.0	60.3	32.0	52.5	43.4	36.9	39.4	44.1	37.8	24.8	15.5	12.0
23:30 - 23:45	45.8	64.4	33.0	49.5	44.1	38.8	39.3	43.8	37.6	24.5	14.8	11.8
23:45 - 00:00	46.5	63.3	33.0	50.4	42.7	36.7	39.7	44.8	38.0	24.7	15.1	11.8
00:00 - 00:15	45.8	59.6	34.0	49.7	42.0	37.0	39.3	44.0	37.5	24.1	14.6	11.8
00:15 - 00:30	46.9	64.8	34.0	52.0	48.2	39.2	40.2	45.0	38.5	25.1	15.1	11.8
00:30 - 00:45	45.4	59.4	32.0	49.9	43.6	37.4	38.9	43.6	37.0	24.2	14.8	11.8
00:45 - 01:00	44.7	58.3	31.0	48.0	40.6	38.0	38.7	42.8	36.2	23.0	14.3	11.8
01:00 - 01:15	44.8	60.5	29.0	49.5	41.0	35.8	37.7	43.1	36.4	23.3	14.4	11.8
01:15 - 01:30	43.2	64.8	26.0	46.6	39.0	33.8	35.5	41.4	35.4	22.2	13.8	11.8
01:30 - 01:45	42.0	59.2	29.0	45.6	37.8	33.6	35.1	40.2	33.6	20.5	13.4	11.8
01:45 - 02:00	38.0	59.0	28.0	43.2	35.8	32.6	32.3	36.0	29.3	17.1	12.8	12.0
02:00 - 02:15	40.2	60.4	27.0	50.1	39.7	32.1	33.9	38.3	31.4	19.4	13.2	12.1
02:15 - 02:30	39.5	58.0	28.0	44.2	35.2	32.1	34.4	37.6	30.5	18.8	13.3	11.8
02:30 - 02:45	39.5	58.0	28.0	44.2	35.2	32.1	34.4	37.6	30.5	18.8	13.3	11.8
02:45 - 03:00	39.6	59.4	29.0	42.4	37.1	32.3	34.7	37.7	30.1	17.1	12.7	11.7
03:00 - 03:15	39.7	57.6	27.0	42.9	35.3	31.2	34.5	37.7	30.8	18.2	12.9	11.7
03:15 - 03:30	40.6	60.0	27.0	45.0	37.9	32.5	34.9	38.7	31.8	19.3	13.7	11.8
03:30 - 03:45	37.5	58.4	25.0	44.7	34.7	29.5	32.1	35.7	27.5	20.1	13.8	11.8
03:45 - 04:00	33.4	55.0	22.0	41.2	30.4	25.4	26.5	30.7	25.2	22.1	14.4	11.8
04:00 - 04:15	40.0	58.2	24.0	40.8	33.8	27.8	30.9	36.3	30.3	34.5	23.4	12.0
04:15 - 04:30	43.0	62.1	27.0	41.0	32.9	26.2	28.6	37.3	37.7	35.9	29.5	13.2
04:30 - 04:45	50.1	71.7	35.0	41.9	35.1	28.9	31.1	36.9	46.7	43.0	40.1	16.8
04:45 - 05:00	54.8	66.3	39.0	44.8	36.2	30.4	33.2	39.0	42.6	50.5	51.7	25.2
05:00 - 05:15	53.2	66.7	36.0	47.1	38.5	33.2	35.5	39.3	37.6	49.7	49.6	23.7
05:15 - 05:30	55.9	71.0	37.0	44.4	37.3	32.6	42.2	39.1	40.3	51.2	53.4	27.5
05:30 - 05:45	45.2	61.8	36.0	49.2	45.7	40.0	39.8	40.5	35.3	38.1	35.0	14.3
05:45 - 06:00	45.5	60.5	36.0	45.5	40.0	38.8	41.2	41.7	36.6	37.1	31.3	13.6
06:00 - 06:15	51.5	66.5	36.0	45.9	38.1	34.6	40.3	41.9	37.6	46.8	48.0	22.8
06:15 - 06:30	54.6	68.7	37.0	49.2	41.2	36.6	42.4	42.8	36.0	49.1	52.4	25.6
06:30 - 06:45	50.2	61.8	37.0	51.3	46.0	39.9	41.6	44.8	39.6	44.2	43.9	19.6
06:45 - 07:00	51.4	69.4	36.0	53.1	43.8	38.4	41.1	44.4	39.1	45.6	47.2	21.6

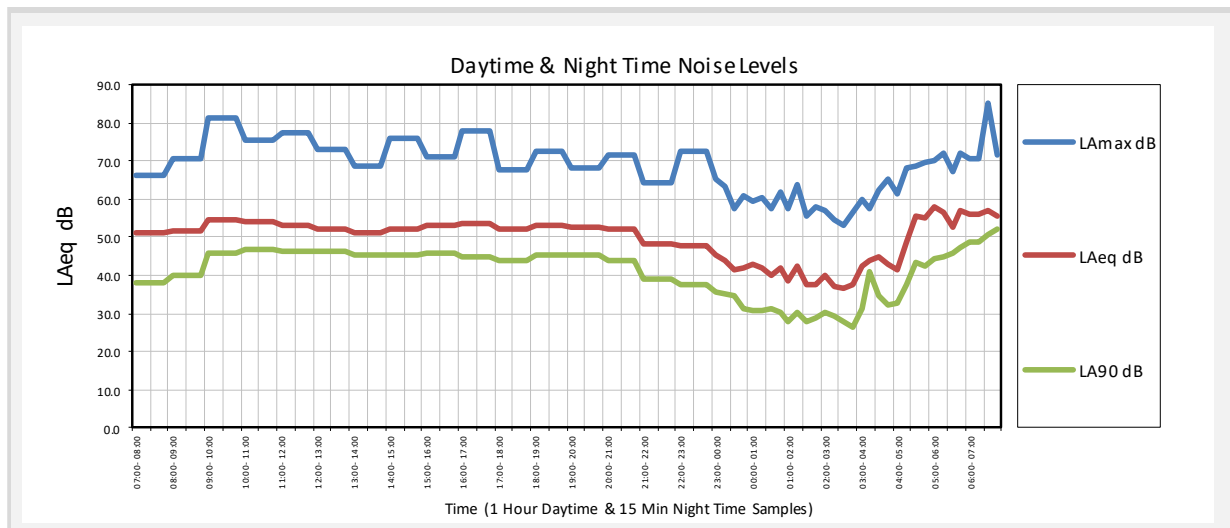


13.8 14th – 15th May 2023 Position 2

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	52.3	81.0	45.0	58.6	53.1	45.9	45.6	48.1	45.2	42.8	40.5	22.2
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	51.4	85.0	31.0	50.9	43.6	40.4	42.6	45.3	41.7	44.8	46.4	21.9

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	51.3	66.3	38.0	54.8	46.7	39.6	42.5	45.9	40.3	45.2	45.0	19.3
08:00 - 09:00	51.7	70.6	40.0	57.1	47.8	41.8	43.1	47.3	41.6	44.0	45.3	19.8
09:00 - 10:00	54.3	81.0	46.0	59.9	54.5	48.1	47.4	50.1	45.2	45.1	46.8	25.3
10:00 - 11:00	54.3	75.6	47.0	59.8	54.0	47.3	46.9	50.1	45.3	46.5	45.0	21.6
11:00 - 12:00	53.1	77.2	46.0	59.7	56.2	48.6	46.0	48.7	46.3	44.3	33.9	18.1
12:00 - 13:00	52.3	72.9	46.0	59.5	54.5	46.8	44.8	48.0	46.2	41.9	34.6	17.5
13:00 - 14:00	51.3	68.8	45.0	60.3	53.3	45.9	44.3	47.9	43.9	40.7	33.4	16.5
14:00 - 15:00	52.3	76.1	45.0	59.8	55.7	48.1	45.8	47.8	44.6	43.2	39.4	31.9
15:00 - 16:00	53.2	71.2	46.0	60.4	55.9	46.8	44.5	47.8	49.0	39.5	31.2	16.5
16:00 - 17:00	53.3	78.0	45.0	60.9	55.3	48.6	49.5	49.2	45.8	41.5	33.9	16.7
17:00 - 18:00	52.0	67.8	44.0	58.8	51.6	43.4	47.4	48.0	46.0	39.4	31.6	16.2
18:00 - 19:00	53.0	72.4	45.0	58.0	52.0	44.6	46.0	48.6	47.4	42.7	37.6	17.4
19:00 - 20:00	52.4	68.0	45.0	57.1	51.0	44.3	45.2	48.5	46.5	41.6	34.7	15.9
20:00 - 21:00	52.0	71.5	44.0	56.0	49.1	45.2	45.3	47.8	45.3	43.2	36.1	16.2
21:00 - 22:00	48.2	64.4	39.0	54.5	45.3	40.2	40.9	45.2	39.4	39.6	32.5	14.9
22:00 - 23:00	47.6	72.5	37.0	52.3	49.6	41.2	41.2	45.4	39.3	29.5	20.9	12.6

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	45.2	65.1	35.0	50.2	44.2	41.3	38.2	43.2	36.6	24.7	18.9	12.9
23:15 - 23:30	43.9	63.1	35.0	48.6	46.1	41.7	38.7	41.4	34.3	21.9	14.7	12.3
23:30 - 23:45	41.6	57.2	35.0	45.3	38.0	34.7	36.6	39.7	32.4	19.4	13.5	11.9
23:45 - 00:00	41.7	60.9	31.0	43.6	38.0	33.5	35.6	40.0	32.8	20.1	13.6	11.9
00:00 - 00:15	42.7	59.2	31.0	49.9	38.8	34.0	36.9	40.8	33.8	20.8	14.0	11.9
00:15 - 00:30	41.9	60.3	31.0	46.9	40.8	35.2	37.0	39.9	32.1	24.6	19.3	12.6
00:30 - 00:45	40.0	57.5	31.0	44.1	35.5	34.9	35.3	38.2	29.7	18.4	14.0	11.9
00:45 - 01:00	42.1	61.6	30.0	44.1	40.6	34.9	37.0	40.1	33.4	20.5	14.8	12.1
01:00 - 01:15	38.7	57.2	28.0	39.7	34.1	30.9	34.2	36.7	29.3	18.1	15.2	12.3
01:15 - 01:30	42.6	63.7	30.0	45.4	38.1	33.8	36.6	40.7	34.0	20.9	13.6	11.8
01:30 - 01:45	37.4	55.7	28.0	43.3	33.2	30.3	32.9	35.4	28.0	16.6	13.4	11.9
01:45 - 02:00	37.6	58.0	29.0	41.6	32.6	30.9	34.1	35.3	27.8	16.6	13.5	11.9
02:00 - 02:15	39.9	57.1	30.0	48.6	34.5	32.0	36.7	37.7	29.5	18.3	13.6	12.0
02:15 - 02:30	37.1	54.4	29.0	37.6	30.4	30.7	34.7	34.9	24.5	14.7	12.9	11.8
02:30 - 02:45	36.5	53.2	28.0	38.3	30.3	30.0	33.7	34.3	24.7	15.0	13.2	11.9
02:45 - 03:00	37.5	56.4	26.0	41.8	32.4	29.0	31.4	35.8	28.5	18.6	16.1	12.4
03:00 - 03:15	42.6	59.9	31.0	43.0	34.6	31.6	36.4	39.0	34.4	33.6	33.0	22.5
03:15 - 03:30	43.9	57.5	41.0	39.4	33.2	32.0	36.8	38.6	36.6	36.4	35.7	25.0
03:30 - 03:45	44.9	62.2	34.0	41.3	32.8	32.6	35.5	39.1	38.1	38.1	37.2	26.5
03:45 - 04:00	42.7	65.2	32.0	42.8	36.9	32.0	35.3	40.9	34.1	28.4	25.1	15.7
04:00 - 04:15	41.6	61.5	33.0	44.1	34.2	32.1	35.4	38.9	32.9	31.6	26.5	16.2
04:15 - 04:30	48.7	68.2	37.0	44.0	36.3	33.6	38.1	39.7	45.3	40.4	32.8	17.3
04:30 - 04:45	55.4	68.7	43.0	52.1	41.8	38.2	41.9	44.1	51.6	48.9	42.6	23.0
04:45 - 05:00	55.2	69.7	43.0	49.4	40.5	37.6	41.2	44.2	46.9	50.0	51.0	25.2
05:00 - 05:15	57.9	70.1	44.0	46.6	42.4	41.4	44.0	45.1	42.7	53.1	55.2	28.7
05:15 - 05:30	56.3	71.8	45.0	54.9	49.8	43.8	45.1	47.2	41.6	51.4	52.9	27.2
05:30 - 05:45	52.7	67.1	46.0	52.1	44.8	42.7	45.8	48.6	41.8	44.9	46.2	20.8
05:45 - 06:00	57.1	71.9	47.0	52.9	45.7	44.1	47.0	49.0	42.2	51.3	54.1	28.1
06:00 - 06:15	56.0	70.3	49.0	56.0	49.0	45.8	48.1	50.5	43.5	49.0	51.4	24.9
06:15 - 06:30	56.0	70.3	49.0	56.0	49.0	45.8	48.1	50.5	43.5	49.0	51.4	24.9
06:30 - 06:45	57.0	85.0	51.0	57.9	50.2	46.9	49.6	52.4	46.5	49.5	50.8	25.6
06:45 - 07:00	55.4	71.3	52.0	59.3	50.3	47.9	50.0	53.3	46.7	39.1	35.0	20.5

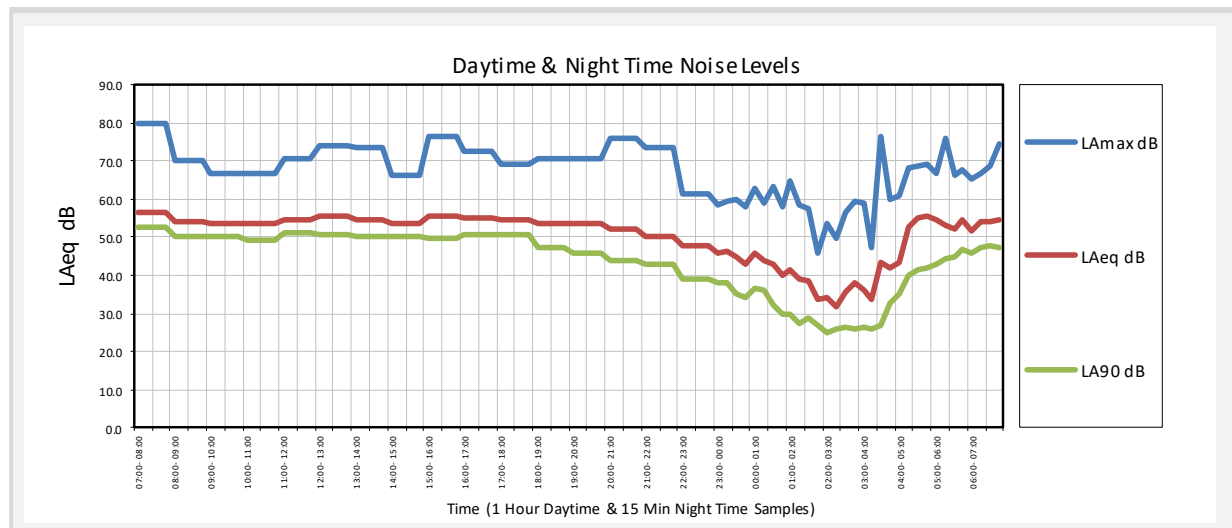


13.9 15th – 16th May 2023 Position 2

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	54.0	79.9	50.0	60.7	53.1	47.9	49.0	51.1	46.3	40.1	35.2	20.0
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	49.8	76.5	26.0	51.0	43.1	40.8	43.0	44.6	41.4	41.8	43.0	18.1

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	56.5	79.9	52.0	61.6	53.2	47.9	50.5	54.2	48.6	40.3	34.3	17.1
08:00 - 09:00	54.1	69.8	50.0	62.4	52.9	48.4	49.8	51.4	44.9	40.1	37.4	22.0
09:00 - 10:00	53.8	66.5	50.0	62.2	53.3	48.3	49.9	50.8	44.8	39.3	34.8	23.0
10:00 - 11:00	53.4	66.7	49.0	61.9	53.7	47.2	49.1	50.2	45.6	38.5	32.2	19.1
11:00 - 12:00	54.7	70.3	51.0	61.7	54.9	48.4	49.8	51.9	45.6	41.8	38.4	21.6
12:00 - 13:00	55.3	73.9	51.0	61.4	54.6	51.6	51.8	52.2	46.2	38.9	42.1	23.6
13:00 - 14:00	54.6	73.4	50.0	60.8	53.3	48.4	49.6	51.6	46.6	42.1	37.4	24.2
14:00 - 15:00	53.8	66.2	50.0	61.0	54.0	48.7	49.3	51.6	43.8	36.1	31.8	19.7
15:00 - 16:00	55.7	76.4	50.0	60.8	54.5	48.3	49.5	51.7	50.1	42.5	33.1	20.3
16:00 - 17:00	54.8	72.2	50.0	61.7	54.2	51.4	50.7	51.9	46.4	39.3	31.9	17.6
17:00 - 18:00	54.7	69.2	50.0	61.1	54.0	46.1	48.4	51.7	48.0	40.9	31.8	17.2
18:00 - 19:00	53.6	70.5	47.0	60.0	50.6	45.1	47.3	50.8	46.6	38.9	31.8	15.6
19:00 - 20:00	53.4	70.6	46.0	58.9	53.6	45.0	46.1	49.6	48.1	39.1	28.7	14.3
20:00 - 21:00	52.0	75.8	44.0	58.1	50.0	43.7	45.5	48.4	44.4	43.6	33.8	14.5
21:00 - 22:00	50.0	73.2	43.0	55.8	47.8	43.8	44.9	47.6	40.4	38.0	29.2	15.5
22:00 - 23:00	47.6	61.2	39.0	53.1	45.4	41.1	43.6	45.6	37.7	23.5	14.1	11.9

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	46.0	58.4	38.0	51.6	43.7	40.2	42.3	43.8	36.0	24.1	13.4	11.7
23:15 - 23:30	46.3	59.3	38.0	49.2	42.1	40.2	41.9	44.5	36.3	22.1	13.4	11.8
23:30 - 23:45	44.9	60.1	35.0	46.5	41.1	37.4	40.0	43.0	35.6	22.2	14.7	11.9
23:45 - 00:00	42.9	58.1	34.0	44.3	37.6	36.9	40.1	40.8	31.4	20.8	17.7	12.6
00:00 - 00:15	45.9	62.7	37.0	49.5	44.2	43.9	42.4	43.3	35.1	22.9	14.5	11.8
00:15 - 00:30	44.0	58.8	36.0	45.9	39.1	41.2	41.4	41.6	32.6	19.8	14.4	11.9
00:30 - 00:45	42.8	63.4	32.0	46.0	39.7	36.1	38.9	40.7	32.9	22.3	14.4	11.8
00:45 - 01:00	40.1	57.7	30.0	44.4	35.8	33.4	36.2	38.1	30.5	17.7	12.7	11.7
01:00 - 01:15	41.3	64.5	30.0	43.3	36.2	34.0	36.9	39.5	31.2	20.0	14.9	12.0
01:15 - 01:30	39.2	58.6	28.0	44.0	34.2	32.0	35.9	36.9	29.5	18.2	14.3	11.9
01:30 - 01:45	38.6	57.2	29.0	41.6	33.9	31.7	34.6	36.6	28.6	16.7	13.5	11.8
01:45 - 02:00	33.8	46.0	27.0	37.9	30.0	29.7	32.8	30.5	19.9	12.4	12.4	11.7
02:00 - 02:15	34.3	53.5	25.0	37.3	30.3	28.4	30.6	32.2	23.6	13.9	12.4	11.7
02:15 - 02:30	31.7	49.6	26.0	36.8	29.4	28.8	30.4	28.4	19.0	12.6	12.3	11.7
02:30 - 02:45	35.7	56.5	26.0	41.1	31.1	30.2	31.7	33.2	26.8	15.8	12.6	11.7
02:45 - 03:00	37.8	59.5	26.0	43.4	33.0	29.9	33.6	36.0	27.8	16.4	12.6	11.7
03:00 - 03:15	36.3	58.7	26.0	37.7	31.5	30.7	33.1	34.1	25.4	16.0	14.0	12.1
03:15 - 03:30	33.8	47.1	26.0	35.3	28.9	29.5	31.9	31.1	20.7	16.0	14.9	12.0
03:30 - 03:45	43.4	76.5	27.0	37.9	33.1	33.3	35.6	37.1	39.8	31.2	25.9	16.0
03:45 - 04:00	42.1	60.1	33.0	42.7	36.8	34.7	39.4	39.6	31.4	26.2	19.3	12.7
04:00 - 04:15	43.5	60.9	35.0	43.6	37.0	36.1	39.9	41.5	33.0	22.6	15.0	11.8
04:15 - 04:30	52.4	68.1	40.0	48.8	38.7	37.7	42.1	43.2	49.4	42.6	32.1	17.5
04:30 - 04:45	55.0	68.7	42.0	45.5	39.1	37.4	40.3	41.6	51.2	48.1	46.2	22.3
04:45 - 05:00	55.5	68.9	42.0	49.9	38.6	37.4	42.1	45.0	47.3	49.6	51.7	25.5
05:00 - 05:15	54.5	66.5	43.0	53.8	44.0	44.5	45.5	44.3	38.1	48.9	51.8	25.1
05:15 - 05:30	53.0	75.9	44.0	55.2	48.1	45.7	48.9	49.7	40.9	43.1	44.9	20.0
05:30 - 05:45	52.2	66.4	45.0	52.4	46.5	47.8	47.5	47.9	40.0	43.3	45.4	19.6
05:45 - 06:00	54.5	67.5	47.0	54.5	48.0	44.2	47.9	49.1	41.6	47.5	49.4	22.4
06:00 - 06:15	51.4	65.4	46.0	55.5	48.5	45.5	47.3	48.9	41.9	37.3	33.1	13.6
06:15 - 06:30	53.8	66.8	47.0	56.8	48.2	43.8	47.5	49.6	42.5	46.2	47.0	22.1
06:30 - 06:45	54.0	68.6	48.0	56.8	48.6	44.7	47.3	50.1	43.2	45.0	47.8	22.2
06:45 - 07:00	54.6	74.6	47.0	59.2	49.6	44.5	47.4	50.8	45.2	47.1	45.2	19.9

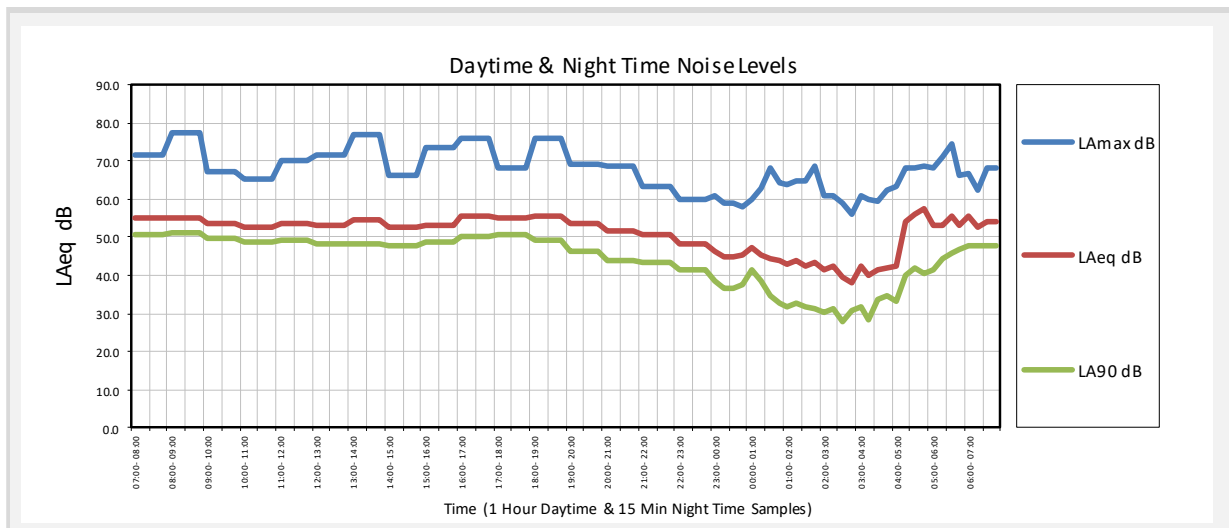


13.10 16th – 17th May 2023 Position 2

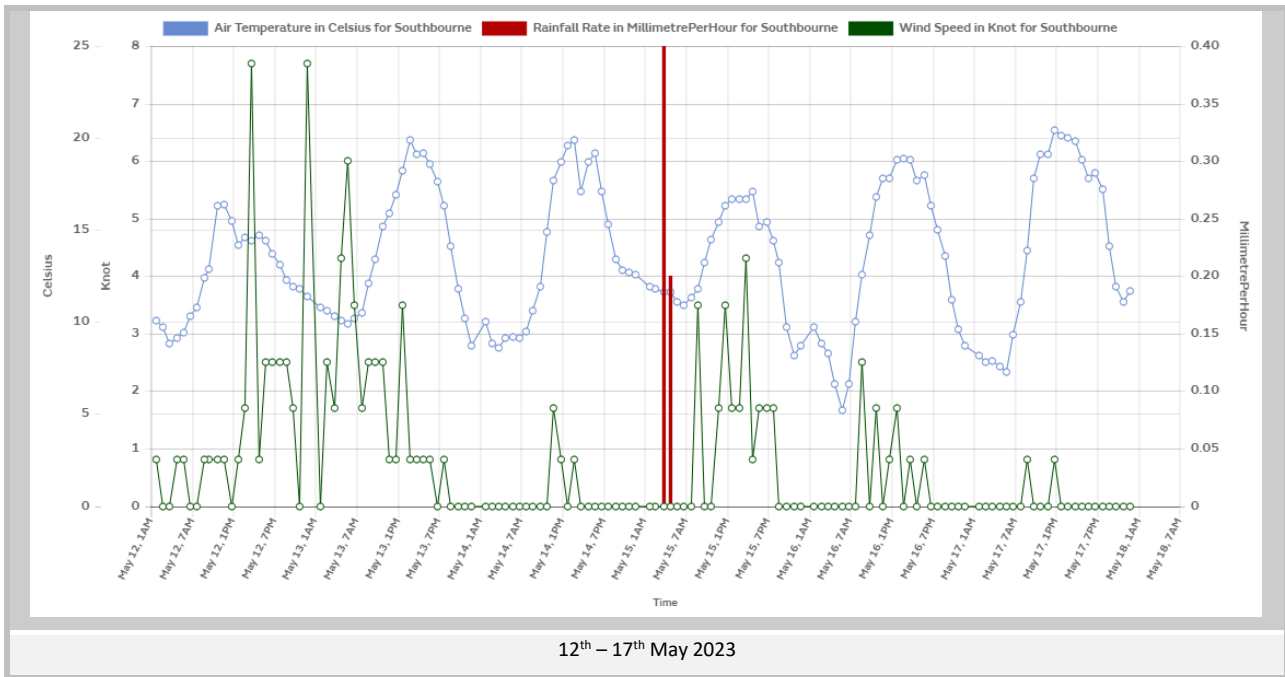
NOISE LEVEL SUMMARY ASSESSMENT				Octave Band Centre Frequency (Hz)								
Date / Time	LAeq	LAmaz	LA90	63	125	250	500	1.0k	2.0k	4.0k	8.0k	16.0k
DAYTIME 07:00 - 23:00 LAeq 16 HOUR & Cor r esponding LAmaz 16 HOUR	53.7	77.2	49.0	60.3	52.6	46.2	48.0	50.6	46.6	41.0	37.9	18.1
NIGHT TIME 23:00 - 07:00 LAeq 8 HOUR & Cor r esponding LAmaz 8 HOUR	50.7	74.5	48.0	51.0	43.8	41.0	43.3	44.7	41.7	43.9	44.6	19.3

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	55.1	71.5	51.0	61.8	53.5	47.1	49.7	52.4	46.1	43.5	42.6	18.7
08:00 - 09:00	55.0	77.2	51.0	61.4	52.5	46.9	49.6	52.1	45.4	43.1	45.2	22.6
09:00 - 10:00	53.6	67.0	49.0	61.5	52.3	46.6	49.9	50.8	44.4	40.0	36.7	18.7
10:00 - 11:00	52.8	65.2	49.0	60.1	51.7	45.9	47.8	50.4	43.9	38.6	34.2	17.0
11:00 - 12:00	53.6	70.2	49.0	60.8	53.5	48.8	49.6	50.6	43.7	41.6	35.3	17.8
12:00 - 13:00	53.2	71.4	48.0	61.4	53.1	46.4	48.0	50.3	45.6	38.8	32.0	16.8
13:00 - 14:00	54.7	77.1	48.0	60.6	54.2	48.1	48.9	51.5	48.2	38.3	32.1	17.0
14:00 - 15:00	52.6	66.0	48.0	60.3	53.3	47.0	47.6	50.1	43.7	35.9	28.9	16.2
15:00 - 16:00	53.3	73.2	49.0	60.8	51.8	46.5	47.8	50.3	45.7	40.7	33.2	17.4
16:00 - 17:00	55.6	75.8	50.0	61.7	55.5	46.5	48.0	51.1	50.5	43.2	42.3	22.8
17:00 - 18:00	55.1	68.1	51.0	61.4	52.9	46.4	48.4	51.8	49.1	40.6	31.3	16.1
18:00 - 19:00	55.6	76.1	49.0	59.9	52.0	45.3	47.8	51.7	50.7	41.0	29.0	15.7
19:00 - 20:00	53.6	69.1	46.0	58.3	51.9	43.9	46.8	49.7	47.9	41.8	32.6	14.4
20:00 - 21:00	51.8	68.8	44.0	57.7	51.9	43.5	45.1	48.4	43.1	43.6	37.6	16.4
21:00 - 22:00	50.5	63.1	44.0	56.5	48.8	43.4	44.7	47.8	40.8	41.1	34.4	14.7
22:00 - 23:00	48.0	60.1	41.0	53.0	44.8	41.5	43.3	46.2	38.2	24.2	14.6	11.9

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	46.2	60.7	38.0	49.7	41.5	38.5	41.6	44.2	36.8	23.0	13.9	15.0
23:15 - 23:30	44.6	59.1	36.0	49.2	39.5	37.1	40.1	42.7	34.8	21.2	13.6	11.8
23:30 - 23:45	44.6	59.1	36.0	49.2	39.5	37.1	40.1	42.7	34.8	21.2	13.6	11.8
23:45 - 00:00	45.3	58.1	38.0	47.8	42.0	43.8	42.5	42.7	34.0	20.8	15.2	12.0
00:00 - 00:15	47.0	59.8	41.0	46.9	42.4	43.9	44.1	44.8	35.5	20.5	13.7	11.9
00:15 - 00:30	45.3	63.0	38.0	44.9	40.7	39.7	42.7	43.2	33.6	23.9	13.7	11.8
00:30 - 00:45	44.1	68.1	34.0	46.0	40.8	39.1	40.4	41.6	34.9	27.3	22.5	14.0
00:45 - 01:00	43.9	64.3	33.0	51.3	47.3	37.7	43.0	40.4	31.7	19.8	15.2	12.1
01:00 - 01:15	42.8	63.5	32.0	45.6	36.8	39.9	40.4	40.3	31.4	18.0	12.9	11.7
01:15 - 01:30	43.8	64.8	33.0	45.9	39.8	41.4	43.9	39.7	30.4	17.0	13.1	12.0
01:30 - 01:45	42.6	64.6	32.0	43.5	50.8	41.8	40.6	38.8	29.8	16.7	12.5	11.7
01:45 - 02:00	43.5	68.8	31.0	45.6	37.3	36.2	39.5	41.6	33.3	19.6	12.9	11.7
02:00 - 02:15	41.2	60.8	30.0	45.4	36.5	34.0	37.3	39.4	30.8	17.9	13.0	11.7
02:15 - 02:30	42.5	61.0	31.0	42.7	36.2	35.2	38.9	40.7	31.9	18.4	13.0	11.7
02:30 - 02:45	39.5	59.0	28.0	47.9	35.6	33.1	35.4	37.3	30.2	18.6	13.4	11.8
02:45 - 03:00	38.2	56.1	31.0	41.6	34.0	33.9	35.5	35.9	26.2	18.0	13.2	11.8
03:00 - 03:15	42.2	60.6	32.0	43.7	36.0	34.9	38.2	40.2	32.1	21.0	15.3	12.0
03:15 - 03:30	40.1	60.0	28.0	42.1	34.0	33.4	36.3	38.1	29.7	18.7	14.6	11.9
03:30 - 03:45	41.5	59.2	34.0	45.8	36.2	37.4	40.2	38.6	28.9	22.9	14.9	11.7
03:45 - 04:00	42.1	62.4	34.0	44.0	36.8	37.1	39.6	39.6	31.3	23.3	15.5	11.7
04:00 - 04:15	42.2	63.2	33.0	44.8	37.4	36.4	38.6	39.8	32.8	24.3	14.9	11.8
04:15 - 04:30	54.0	68.3	40.0	42.7	37.6	35.5	37.7	38.5	51.3	46.2	37.4	19.3
04:30 - 04:45	56.2	68.3	42.0	53.0	41.9	38.0	40.7	41.9	50.8	50.5	50.1	24.7
04:45 - 05:00	57.3	68.6	41.0	48.0	39.7	38.6	39.9	42.7	43.4	52.7	54.6	28.0
05:00 - 05:15	53.0	68.3	41.0	47.8	42.2	40.2	44.4	43.9	40.0	47.8	49.4	23.3
05:15 - 05:30	53.2	71.0	44.0	50.3	44.3	43.7	45.3	46.6	40.3	47.6	48.5	23.3
05:30 - 05:45	55.7	74.5	46.0	54.1	47.2	45.5	47.0	49.6	46.9	50.1	48.2	22.8
05:45 - 06:00	53.3	66.0	47.0	55.4	46.7	43.6	47.8	48.8	41.1	46.4	46.4	21.8
06:00 - 06:15	55.7	66.8	48.0	54.0	46.2	44.6	48.2	49.2	41.1	48.8	52.2	25.3
06:15 - 06:30	52.5	62.2	48.0	57.1	50.0	45.5	48.0	50.0	42.7	39.2	37.6	15.4
06:30 - 06:45	54.2	67.9	48.0	58.0	48.5	45.1	47.8	50.3	43.3	46.6	46.4	20.6
06:45 - 07:00	54.2	67.9	48.0	58.0	48.5	45.1	47.8	50.3	43.3	46.6	46.4	20.6



14 APPENDIX B - ENVIRONMENTAL CONDITIONS



15 APPENDIX C – UNCERTAINTY BUDGET

15.1 Scope

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.

15.2 Uncertainty of Measured Values

Ref	Source of Uncertainty Section 10.2 British Standard 4142:2014+A1:2019	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+A1:2019	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

15.3 Uncertainty in Calculations

Ref	Source of Uncertainty Section 10.2 British Standard 4142:2014+A1:2019	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

15.4 Uncertainty from Other Factors

Ref	Source of Uncertainty Section 10.2 British Standard 4142:2014+A1:2019	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

15.5 Combined Reported Expanded Uncertainty

Ref	Source of Uncertainty Section 10.2 British Standard 4142:2014+A1:2019	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.

#END OF REPORT#

16 APPENDIX D – BS 4142:2019+A1:2019 INFORMATION

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

16.1 Professional Competence

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

16.2 Site Status

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

16.3 Measurement Information – Location 1

Details & Justification	Measurement position 1 was located at the rear of the existing premises, representative of the Nearest Noise Sensitive Premises
Height from Ground	1.5m
Reflective Surfaces	None (Free Field)
Distance to NSP	1m
Distance to Source	1m
Topographical Change (m)	None
Ground between Source and Receiver	100% Hard surface from kitchen extract louvre to residential flats above
Windshield Information	Norsonic Outdoor Microphone Protection Kit Model No: 1212
Distance from Proposed Source to Receiver	1m
NSP* - Noise Sensitive Premises	

#END OF REPORT#