



REPORT REFERENCE:

IMP5796-1

INDUSTRIAL NOISE IMPACT ASSESSMENT INSTALLATION OF NEW COMMERCIAL PLANT

British Standard 4142:2014

CLIENT:

1 Touch

SITE:

Unit Q, Lineside Industrial Estate,

Wick

Littlehampton

BN17 7GA

SURVEY DATE:

5th – 8th October 2020

Impact Acoustics Ltd

1 King John Avenue, Bournemouth, Dorset, BH11 9RS



Report By: B. Scrivener MIOA

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1 EXECUTIVE SUMMARY

1.1 Instruction

Impact Acoustics Ltd have been instructed by 1 Touch to undertake a background noise survey at the existing premises at Unit Q, Lineside Industrial Estate, Wick, Littlehampton, BN17 7GA, to understand the level of impact at the existing site in relation to the proposed new plant where it is proposed to install a new spray booth within the existing premises which will consist of two new internally mounted fan units and associated ductwork that will terminate externally 11m above ground floor level.

The purpose of this assessment is to calculate the resultant noise level at the nearest affected windows at the neighbouring Scout Hut, office to nearby commercial premises and residential dwellings and carry out assessments to BS 4142: 2014.

1.2 Scope of Report

The measurements have been undertaken in accordance with British Standard 4142:2014 and ISO 1996 – Part 2: 2017 to establish if the proposed site has a demonstrable adverse effect in terms of noise that outweigh the benefits of the development. This report aims to establish the following:

- Existing background noise levels at the residential façade (L_{A90});
- Noise levels from the Proposed Plant (L_{Aeq});
- Impact on the nearest noise sensitive property.
- Mitigation Levels if Required

1.3 Summary of Report

1.3.1 Measured Background Noise Levels

Continuous background noise measurements was undertaken between 5th and 8th October 2020 at the Assessment Position 1. The representative background noise levels at position 1 were found to be $L_{A90,1 \text{ hour}}$ 46 dB for daytime (07:00-23:00). The unit will not be operated during night time hours and therefore only daytime noise levels have been assessed.

Position 1 Background Noise Levels

Baseline Environment Existing Background Noise Levels 5 days (07:00 – 23:00)	Measured Levels at Assessment Position 1	$L_{A90,1}$ 46 dB
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1.4 Proposed Plant & Attenuation

The following Flakt Woods 90JM/25/4/9/18 Short Case D132M 9kW fan is to be used for both inlet and extract together with an Acoustica CP03-C*-0900 1D Non-Podded selected attenuator:-

90JM/25/4/9/18 Short Case D132M 9kW	Octave Band Centre Frequency (Hz)								Lw dB(A)
	63	125	250	500	1.0K	2.0K	4.0K	8.0K	
Inlet	90	87	91	91	90	88	84	79	98
Extract	90	88	92	91	90	88	85	81	98

Acoustica CP03-C*-0900 1D Non Podded	Octave Band Centre Frequency (Hz)								
	63	125	250	500	1.0K	2.0K	4.0K	8.0K	
Inlet	3	5	10	17	15	11	9	8	

1.5 Assessment

1.5.1 Scout Hut (07:00 – 23:00)

Rating Level	44 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	46 dB	8.1	Modal Background Noise Level (0700 – 2300)
Assessment Level	-2 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	-2 dB		
Conclusion	The assessment level is 'Low Impact'		

1.5.2 Commercial & Residential (07:00 – 23:00)

Rating Level	39 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	46 dB	8.1	Modal Background Noise Level (0700 – 2300)
Assessment Level	-7 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	-7 dB		
Conclusion	The assessment level is 'Low Impact'		

1.7 NPPF 2019

1.8 Planning Approval Recommendation

Based on the calculations and assessments made within this report it is the professional opinion of Impact Acoustics Ltd that the proposed development can demonstrate compliance with the National Planning Policy Framework 2019, NPPF & NPSE and that, with regards to sound, planning permission can be granted.

2 INTRODUCTION

2.1 Instruction

Impact Acoustics Ltd have been instructed by 1 Touch to undertake a background noise survey at the existing premises at Unit Q, Lineside Industrial Estate, Wick, Littlehampton, BN17 7GA, to understand the level of impact at the existing site in relation to the proposed new plant where it is proposed to install a new spray booth within the existing premises which will consist of two new internally mounted fan and associated ductwork that will terminate externally 11m above ground floor level.

The purpose of this assessment is to calculate the resultant noise level at the nearest affected windows at the neighbouring Scout Hut, Office to nearby commercial premises and residential dwellings and carry out assessments to BS 4142: 2014.

2.2 Ambient and Background Measurements

External noise levels are to be recorded over, what has been considered for the site, an average / typical time period in order to assess the daytime noise levels. Levels have been recorded over more than one day in order to ensure the uncertainty of measurement aspects of BS 4142 : 2014 have been satisfied and that the data recorded is representative for the purpose of a robust assessment.

2.3 BS 4142: 2014

British Standard 4142: 2014 is to be adopted for the basis of this background noise level assessment. A BS 4142: 2014 noise assessment will be carried out in order to demonstrate the acoustic impact the proposed plant could have on the nearest affected premises and make suitable recommendations in order to demonstrate this unit 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. BS 4142: 2014 supersedes the 1997 version and has been developed to move more in-line with the National Planning Policy Framework 2019 (NPPF) and the Noise Policy Statement for England 2010 (NPSE).

2.4 National Planning Policy Framework 2019 & Noise Policy Statement for England 2010

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.

2.5 “Significant adverse” and “adverse”

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

2.6 NOEL – No Observed Effect Level

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

2.7 LOAEL – Lowest Observed Adverse Effect Level

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

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

2.8 SOAEL – Significant Observed Adverse Effect Level

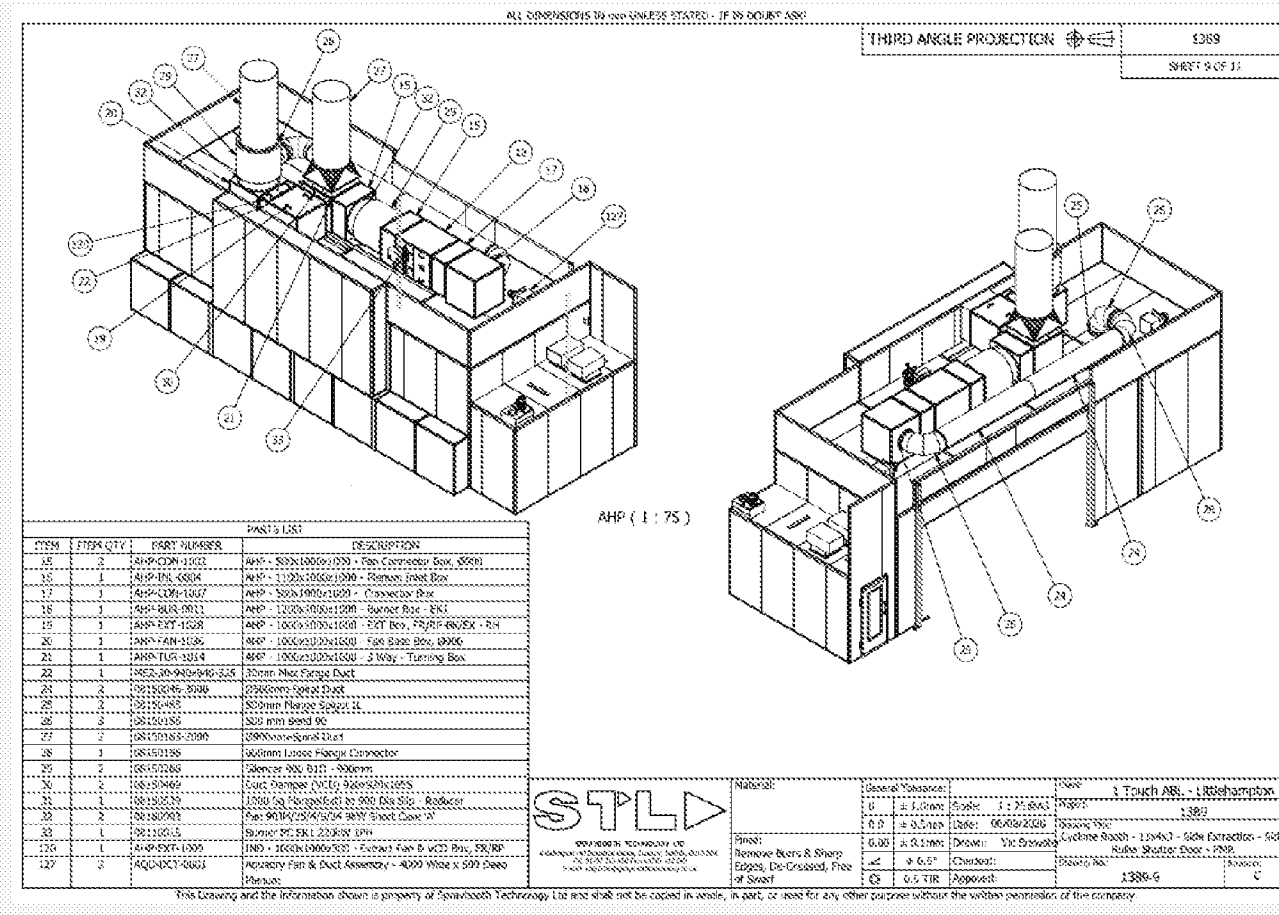
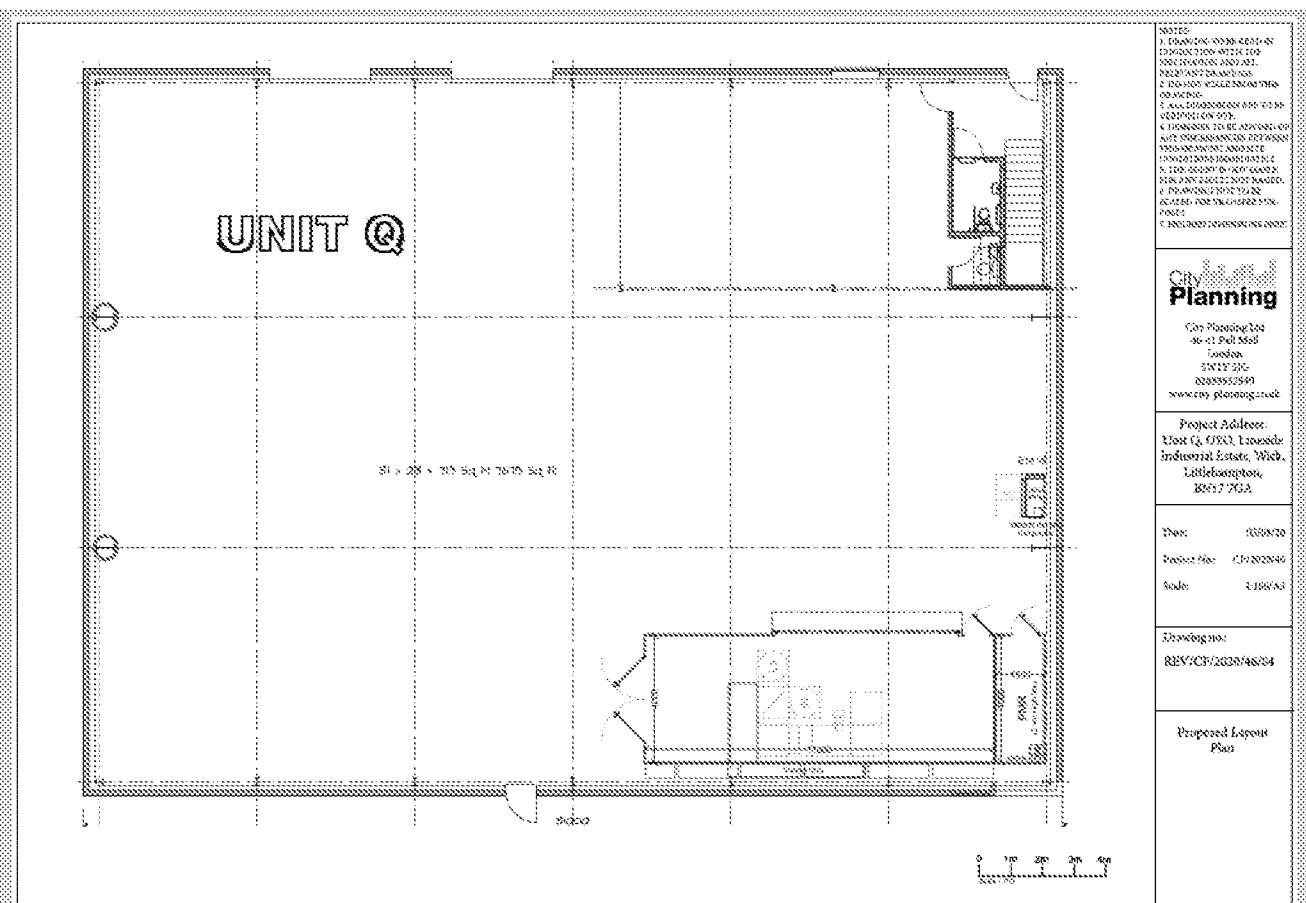
This is the level above which significant adverse effects on health and quality of life occur.

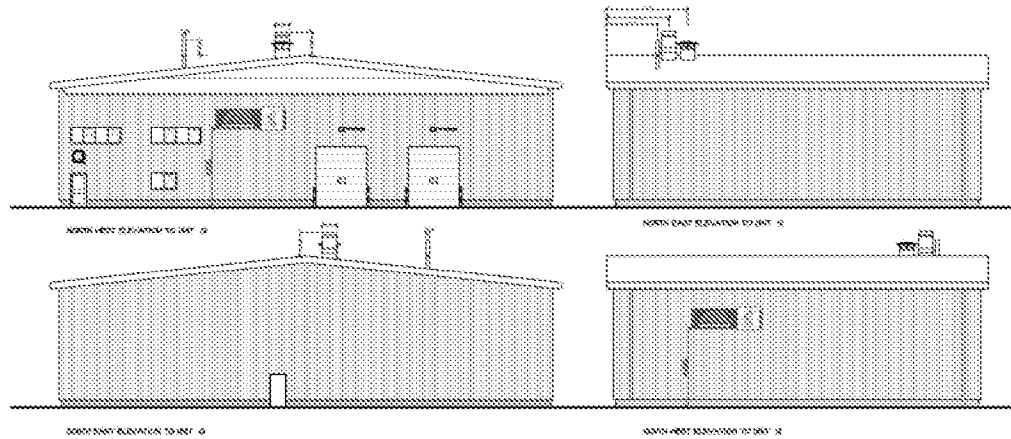
It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further 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.

3.1 Position of Site in Wider Area

- Yellow – measurement position
- Orange Noise Sensitive Premises (NSP)







NOTES:
 1. DRAWING NO: 5030-4211-01
 2. DRAWING NO: 5030-4211-02
 3. DRAWING NO: 5030-4211-03
 4. DRAWING NO: 5030-4211-04
 5. DRAWING NO: 5030-4211-05
 6. DRAWING NO: 5030-4211-06
 7. DRAWING NO: 5030-4211-07
 8. DRAWING NO: 5030-4211-08
 9. DRAWING NO: 5030-4211-09
 10. DRAWING NO: 5030-4211-10
 11. DRAWING NO: 5030-4211-11
 12. DRAWING NO: 5030-4211-12
 13. DRAWING NO: 5030-4211-13
 14. DRAWING NO: 5030-4211-14
 15. DRAWING NO: 5030-4211-15
 16. DRAWING NO: 5030-4211-16
 17. DRAWING NO: 5030-4211-17
 18. DRAWING NO: 5030-4211-18
 19. DRAWING NO: 5030-4211-19
 20. DRAWING NO: 5030-4211-20

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Project Address:
 Unit Q, Unit R, Linesdale
 Industrial Estate, Wick,
 Littlehampton,
 BN17 7JA

Date: 16/09/20

Project No: CP/2020040

Scale: 1:200 NS

Drawing No:
 REV: CP/2020/48/08

Proposed Elevations

4 APPARATUS

4.1 Equipment Calibration

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 0.2 dB.

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 Impact Acoustics Ltd in accordance with UKAS directive LAB 23.

Position 1

Description	Make	Type	Serial No.	Calibration Intervals	Last Calibrated	Next Due Calibration
Integrated Sound Level Meter	Norsonic	118	<u>31632</u>	2 YEARS	08.07.2020	08.07.2022
12.5mm Microphone (with windshield)	Norsonic	1225	<u>91720</u>	2 YEARS	08.07.2020	08.07.2022
Microphone Pre – Amplifier	Norsonic	1201	<u>29307</u>	2 YEARS	08.07.2020	08.07.2022

The noise meter was calibrated before and after the assessment period and found to be within the tolerance of the manufacturer's guidance. Full Calibration certificates are available upon request.

5 BACKGROUND NOISE LEVELS

Continuous background noise measurements were undertaken between 5th and 8th October 2020 at the Assessment Position 1. The representative background noise levels at position 1 were found to be $L_{A90,1 \text{ hour}}$ 46 dB for daytime (07:00-23:00). The unit will not be operated during night time hours and therefore only daytime noise levels have been assessed.

Position 1 Background Noise Levels

Daytime Equivalent Fasting Background Noise Levels 5 days (07:00 – 23:00)	Measured Levels at Assessment Position 1	$L_{A90,1}$ 46 dB
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6 CALCULATIONS

6.1 Proposed Inlet & Extract Fan

The following Flakt Woods 90JM/25/4/9/18 Short Case D132M 9kW fan is to be used for both inlet and extract together with an Acoustica CP03-C*-0900 1D Non-Podded selected attenuator that has already been selected and will be included within the main plant's installation:-

90JM/25/4/9/18 Short Case D132M 9kW	Octave Band Centre Frequency (Hz)								Lw dB(A)
	63	125	250	500	1.0K	2.0K	4.0K	8.0K	
Inlet	90	87	91	91	90	88	84	79	98
Extract	90	88	92	91	90	88	85	81	98

6.2 Proposed Attenuator / Silencer

Acoustica CP03-C*-0900 1D Non Podded	Octave Band Centre Frequency (Hz)								
	63	125	250	500	1.0K	2.0K	4.0K	8.0K	
Inlet	3	5	10	17	15	11	9	8	

6.3 Calculated Discharge Levels.

Inlet Initial Proposal	63	125	250	500	1.0k	2.0k	4.0k	8.0k	Lw dB
Fan SWL	90.0	87.0	91.0	91.0	90.0	88.0	84.0	79.0	
Silencer	-3.0	-5.0	-10.0	-17.0	-15.0	-11.0	-9.0	-8.0	
Bend Section	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Duct Length	-4.5	-3.6	-1.8	-0.9	-0.9	-0.9	-0.9	-0.6	
End Reflection Loss	-9.0	-4.0	-1.0	0.0	0.0	0.0	0.0	0.0	
Directivity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Barrier Attenuation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Calculated Discharge Level	73.5	74.4	78.2	73.1	74.1	76.1	74.1	70.5	81.4

Extract Initial Proposal	63	125	250	500	1.0k	2.0k	4.0k	8.0k	Lw dB
Fan SWL	90.0	88.0	92.0	91.0	90.0	88.0	85.0	81.0	
Silencer	-3.0	-5.0	-10.0	-17.0	-15.0	-11.0	-9.0	-8.0	
Bend Section	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Duct Length	-4.5	-3.6	-1.8	-0.9	-0.9	-0.9	-0.9	-0.6	
End Reflection Loss	-9.0	-4.0	-1.0	0.0	0.0	0.0	0.0	0.0	
Directivity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Barrier Attenuation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Calculated Discharge Level	73.5	75.4	79.2	73.1	74.1	76.1	75.1	72.5	81.9

6.4 Inputted Noise Level

Sound Levels (local)																
OK		Cancel		Copy...		Font...		Adjust Col. Width		Help						
Name	ID	Type	Octave Spectrum (dB)												Source	
			Weight	31.5	63	125	250	500	1000	2000	4000	8000	A	lin		
Inlet	Inlet	Li		0.0	73.5	74.4	78.2	73.1	74.1	76.1	74.1	70.5	81.5	83.8		
Extract	Extract	Li		0.0	73.5	75.4	79.2	73.1	74.1	76.1	75.1	72.5		84.4		



Based on the above being achieved using the 3D CADNA A modelling software calculations detailed within ISO 9613 Part 1 and 2: 1996 have been used and the following noise assessment can be concluded.

7 BS4142:2014 NOISE ASSESSMENT

7.1 Scope of British Standard 4142:2014

In the assessment of the existing surrounding commercial premises, consideration has been given to the scope of British Standard 4142:2014, 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 by using outdoor sound levels to assess the effect of sound on local residents.

7.2 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.
$L_{A, T}$	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.

7.3 Assessment Position

The assessments were established as the neighbouring Scout Hut and Commercial / Residential properties surrounding the site.

7.4 Calculations

The specific noise levels are calculated at the assessment position located at the neighbouring Scout Hut and Commercial / Residential properties surrounding 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.

7.5 Equivalent Position

The background noise levels were measured at the equivalent position, chosen as it most represented the closest noise sensitive façade, between 5th – 8th October 2020.

7.6 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

7.7 Subjective Method

For the purpose of this assessment, the subjective method has been used as the most suitable for this development. 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 – 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 – 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 – Section 8.2 Subjective Method	Perceptibility to more sensitive facades	Correction
Readily Distinctive	Is not present	+0
	Is present	+3
Intermittency	Is not present	+0
	Is present	+3

7.8 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 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

7.9 Noise Meter Floor

BS 4142: 2014 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. The above statement would not be applicable for this particular site.

7.10 BS 4142: 2014 Penalties

Whilst BS 4142: 2014 allows receptor assessments to 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.

7.11 Assessments

7.11.1 Scout Hut (07:00 – 23:00)

Rating Industrial Noise affecting Mixed Industrial and Residential Areas		07:00 to 23:00 7 days per week Worst case scenario	
Assessment Position	UNIT Q, LINESDALE INDUSTRIAL ESTATE, LITTLEHAMPTON		
Background Position	At the assessment position		
Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1\text{ hour}}$	42 dB	7	Calculated using ISO 9613:1996 ^[3]
Tonality	+2 dB	8.1	Minor Tonality Characteristic
Rating Level	44 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1\text{ hour}}$	46 dB	8.1	Modal Background Noise Level (0700 – 2300)
Assessment Level	-2 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	-2 dB		
Conclusion	The assessment level is ‘Low Impact’		

7.11.2 Commercial & Residential (07:00 – 23:00)

Rating Industrial Noise affecting Mixed Industrial and Residential Areas		07:00 to 23:00 7 days per week Worst case scenario	
Assessment Position	UNIT Q, LINESDALE INDUSTRIAL ESTATE, LITTLEHAMPTON		
Background Position	At the assessment position		
Item	Calculation	Clause	Commentary
Specific Noise Level $L_{Aeq,1\text{ hour}}$	37 dB	7	Calculated using ISO 9613:1996 ^[1]
Tonality	+2 dB	8.1	Minor Tonality Characteristic
Rating Level	39 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1\text{ hour}}$	46 dB	8.1	Modal Background Noise Level (0700 – 0700)
Assessment Level	-7 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	-7 dB		
Conclusion	The assessment level is 'Low Impact'		

7.11.2.1 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.

7.11.2.2 Impulsivity Penalty

The proposed unit is not pressure dependant and therefore the inlet and extract fans will not vary in velocity and therefore are not classified as impulsive.

7.11.2.3 Intermittency Penalty

The proposed unit is to be switched on at the start of the working day and switched off at the end of the working day and therefore is not classified as Intermittent throughout the working day..

7.11.2.4 Assessment Conclusion

It can be seen from the above assessments that with the proposed new plant, an assessment conclusion of Low Impact could be expected during daytime periods provided the proposed attenuators are installed as specified. This will ensure compliance with BS 4142: 2014.

8 NPPF & NPSE

The National Planning Policy Framework 2019 (NPPF) and assessments to the Noise Policy Statement for England 2010 (NPSE) should be made in conjunction with each other. Paragraphs 180 - 183 of the National Planning Policy Framework 2019 (NPPF) states the following:

Paragraph 180 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 181 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 182 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 183 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 proposed plant and activities operational inside the proposed inlet and extract fans as detailed within this report together, 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.

9 CONCLUSIONS

9.1 Summary of Report

Continuous background noise measurements were undertaken between 5th and 8th October 2020 at the Assessment Position 1. The representative background noise levels at position 1 were found to be $L_{A90,1 \text{ hour}}$ 46 dB for daytime (07:00-23:00). The unit will not be operated during night time hours and therefore only daytime noise levels have been assessed.

Position 1 Background Noise Levels

Daytime Equivalent Existing Background Noise Levels 5 days 07:00 – 23:00	Measured Level at Assessment Position 1	$L_{A90} = 46 \text{ dB}$
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9.2 Proposed Plant & Attenuation

The following Flakt Woods 90JM/25/4/9/18 Short Case D132M 9kW fan is to be used for both inlet and extract together with an Acoustica CP03-C*-0900 1D Non-Podded selected attenuator:-

90JM/25/4/9/18 Short Case D132M 9kW	Octave Band Centre Frequency (Hz)								Lw dB(A)
	63	125	250	500	1.0K	2.0K	4.0K	8.0K	
Inlet	90	87	91	91	90	88	84	79	98
Extract	90	88	92	91	90	88	85	81	98

Acoustica CP03-C*-0900 1D Non Podded	Octave Band Centre Frequency (Hz)								
	63	125	250	500	1.0K	2.0K	4.0K	8.0K	
Inlet	3	5	10	17	15	11	9	8	

9.3 Assessment

9.3.1 Scout Hut (07:00 – 23:00)

Rating Level	44 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	46 dB	8.1	Modal Background Noise Level (0700 – 2300)
Assessment Level	-2 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	-2 dB		
Conclusion	The assessment level is 'Low Impact'		

9.3.2 Commercial & Residential (07:00 – 07:00)

Rating Level	39 dB	9.1	The acoustic feature correction is added to the specific noise level
Background Noise Level $L_{A90,1 \text{ hour}}$	46 dB	8.1	Modal Background Noise Level (0700 – 2300)
Assessment Level	-7 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	-7 dB		
Conclusion	The assessment level is 'Low Impact'		

9.4 Conclusions

The operation of the proposed plant has been assessed to establish if the operation of this new plant 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 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 noise emanating 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.

9.5 NPPF 2019

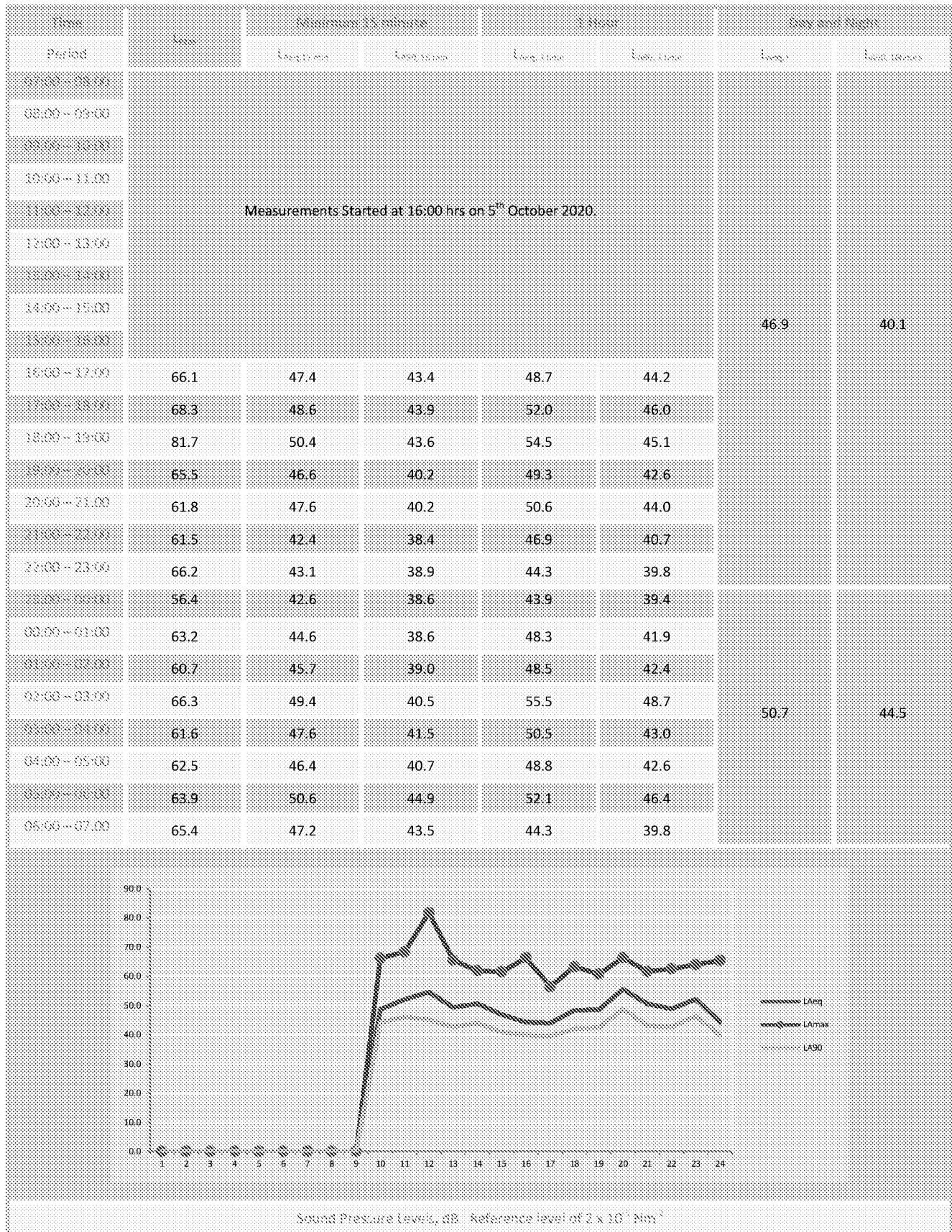
National Planning Policy Framework 2019 suggests that planning permission should be granted unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the framework taken as a whole, or specific policies in the framework indicate the application should be restricted.

9.6 Planning Approval Recommendation

Based on the calculations and assessments made within this report it is the professional opinion of Impact Acoustics Ltd that the proposed development can demonstrate compliance with the National Planning Policy Framework 2019, NPPF & NPSE and that, with regards to sound, planning permission can be granted.

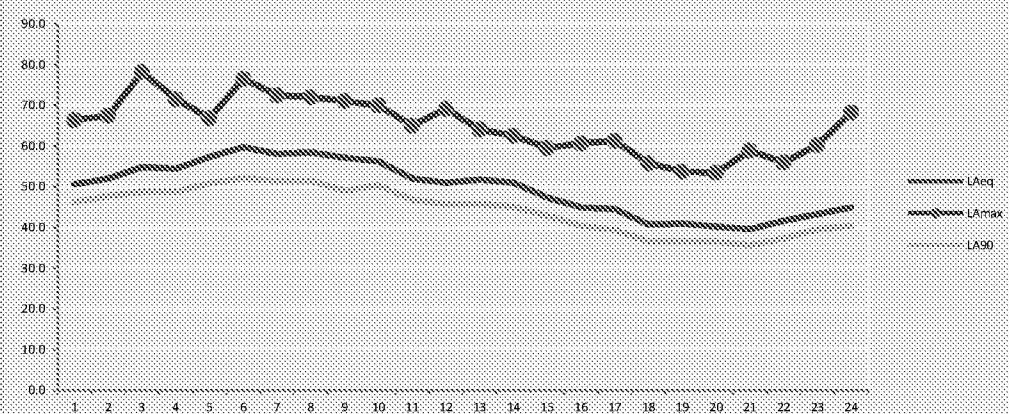
10 APPENDIX A – RESULTS

10.1 5th – 6th October 2020 – Position 1



10.2 6th – 7th October 2020 – Position 1

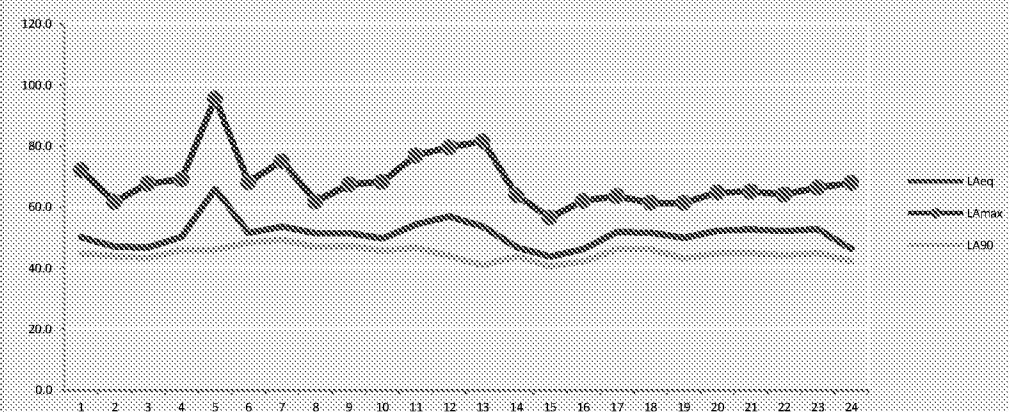
Time	Leq	Minimum 15 minute		1 Hour		Day and Night	
Period	Leq	Leq, 15 min	Leq, 15 min	Leq, 1 hour	Leq, 1 hour	Leq, 1	Leq, 1 hour
07:00 – 08:00	66.4	48.8	45.5	50.5	46.1	55.1	48.6
08:00 – 09:00	67.4	50.6	46.5	51.9	47.6		
09:00 – 10:00	78.2	52.9	47.6	54.8	48.7		
10:00 – 11:00	71.5	53.2	47.8	54.4	48.7		
11:00 – 12:00	66.8	56.0	50.2	57.3	50.8		
12:00 – 13:00	76.5	58.9	50.6	59.6	52.0		
13:00 – 14:00	72.4	56.7	50.3	58.0	51.3		
14:00 – 15:00	72.0	57.6	50.4	58.4	51.4		
15:00 – 16:00	71.0	53.8	47.2	57.1	49.0		
16:00 – 17:00	69.9	50.9	45.9	56.2	50.3		
17:00 – 18:00	65.0	51.0	46.1	52.0	46.7		
18:00 – 19:00	69.1	49.7	44.8	50.9	45.6		
19:00 – 20:00	64.0	49.4	44.2	51.7	45.7		
20:00 – 21:00	62.5	48.3	43.1	50.9	45.0		
21:00 – 22:00	59.5	45.4	41.5	47.3	42.8		
22:00 – 23:00	60.6	43.3	38.9	44.9	40.3	42.5	38.2
23:00 – 00:00	61.2	43.6	38.7	44.5	39.3		
00:00 – 01:00	55.7	39.1	35.4	40.6	36.5		
01:00 – 02:00	53.7	39.8	35.9	40.8	36.4		
02:00 – 03:00	53.4	39.4	35.3	40.1	36.4		
03:00 – 04:00	58.8	38.5	35.1	39.5	35.6		
04:00 – 05:00	55.9	40.3	36.1	41.5	37.2		
05:00 – 06:00	60.2	42.2	37.7	43.2	39.5		
06:00 – 07:00	68.2	42.9	39.4	44.9	40.3		



Sound Pressure Levels, dB. Reference level of $2 \times 10^{-5} \text{ Nm}^{-2}$

10.3 7th – 8th October 2020 – Position 1

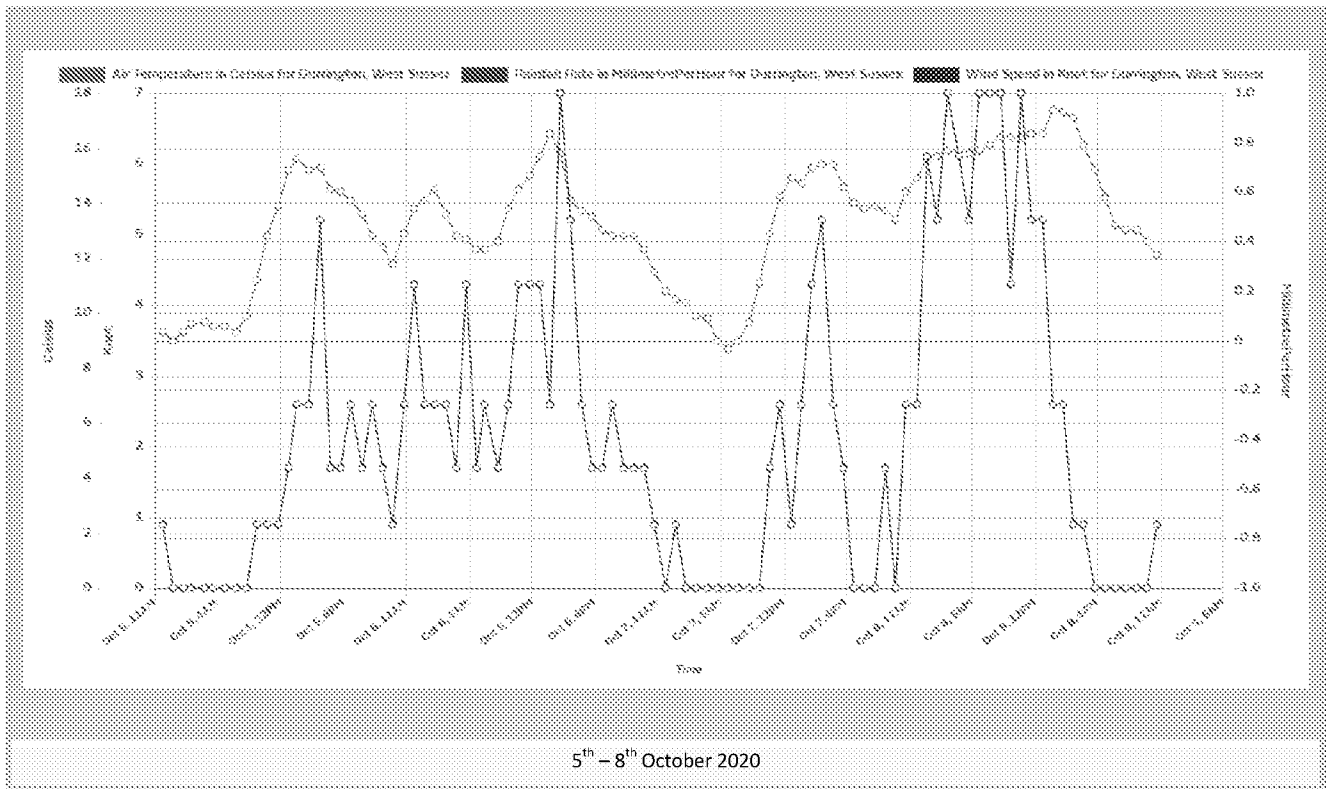
Time Period	Leq, 15 min	Minimum 15 minute		1 Hour		Day and Night	
		Leq, 15 min	Leq, 15 min	Leq, 1 hour	Leq, 1 hour	Leq, 1	Leq, 1 hour
07:00 – 08:00	71.9	47.1	43.0	50.1	44.7	55.8	45.5
08:00 – 09:00	61.7	46.6	43.9	46.9	43.9		
09:00 – 10:00	67.6	46.0	42.5	46.7	43.2		
10:00 – 11:00	69.0	46.7	43.8	50.1	45.9		
11:00 – 12:00	95.5	52.8	44.7	65.9	45.9		
12:00 – 13:00	68.1	50.0	46.1	51.4	48.3		
13:00 – 14:00	75.0	49.5	45.5	53.6	49.3		
14:00 – 15:00	61.8	50.1	45.4	51.3	46.8		
15:00 – 16:00	67.3	49.8	45.8	51.4	47.2		
16:00 – 17:00	68.3	48.4	45.1	49.6	45.5		
17:00 – 18:00	76.9	53.0	44.4	54.3	46.5		
18:00 – 19:00	79.5	45.9	42.1	56.9	43.8		
19:00 – 20:00	81.5	42.4	39.6	53.5	40.9		
20:00 – 21:00	63.8	43.9	40.1	46.8	43.7		
21:00 – 22:00	56.5	42.4	40.1	43.6	40.5		
22:00 – 23:00	62.0	42.8	39.2	46.1	42.2	52.1	45.2
23:00 – 00:00	63.5	49.5	45.5	51.7	46.1		
00:00 – 01:00	61.3	46.5	40.1	51.5	46.0		
01:00 – 02:00	61.3	46.1	40.4	49.9	43.1		
02:00 – 03:00	64.7	50.9	42.6	52.2	44.7		
03:00 – 04:00	65.0	51.1	43.6	52.5	44.8		
04:00 – 05:00	64.1	51.5	43.4	52.1	44.0		
05:00 – 06:00	66.3	49.6	43.3	52.6	44.8		
06:00 – 07:00	67.8	52.2	46.6	46.1	42.2		



Sound Pressure Levels, dB. Reference level of $2 \times 10^{-5} \text{ Nm}^{-2}$

11 APPENDIX B – WEATHER CONDITIONS

11.1 5th – 8th October 2020



END OF REPORT