



## Noise Impact Assessment

Site Address: Meltham School, Birmingham Lane, Meltham, Huddersfield, HD9 5LH

Client Name: Eddisons Commercial Ltd

Project Reference No: NP-013173



### Authorisation and Version Control

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*Delivering sustainable development by promoting good health and well-being through effective management of noise.*

## Contents

<b>1.</b>	<b>INTRODUCTION .....</b>	<b>4</b>
1.1	Standards, Legislation, Policy & Guidance .....	4
1.2	Proposal Brief .....	5
1.3	Local Planning Authority & Background .....	5
<b>2.</b>	<b>ENVIRONMENTAL NOISE SURVEY .....</b>	<b>7</b>
2.1	Measurement Methodology .....	7
2.1	Context & Subjective Impression.....	8
2.2	Environmental Noise Survey Results.....	8
<b>3.</b>	<b>BS4142 NOISE IMPACT ASSESSMENT .....</b>	<b>9</b>
3.1	Proposed External Fixed Plant & Specific Sound Levels .....	9
3.2	Plant Compound Screening & ASHP Commissioning .....	9
3.3	BS4142 Noise Impact Assessments .....	10
<b>4.</b>	<b>SCHOOL INTERNAL NOISE LEVEL ASSESSMENT .....</b>	<b>12</b>
<b>5.</b>	<b>CONCLUSION AND ACTION PLAN .....</b>	<b>13</b>
	<b>APPENDIX A – ACOUSTIC TERMINOLOGY .....</b>	<b>14</b>
	<b>APPENDIX B – STANDARDS, LEGISLATION, POLICY, AND GUIDANCE .....</b>	<b>15</b>
	B.1 – National Planning Policy Framework (2024) .....	15
	B.2 – Noise Policy Statement for England (2010).....	15
	B.3 – BS4142:2014+A1:2019 – ‘Methods for rating and assessing industrial and commercial sound’ .....	16
	<b>APPENDIX C – LOCATION PLANS .....</b>	<b>20</b>
	<b>APPENDIX D – ENVIRONMENTAL SURVEY .....</b>	<b>21</b>
	D.1 – Time History Noise Data .....	21
	D.2 – Surveying Equipment .....	21
	D.3 – Meteorological Conditions .....	22
	<b>APPENDIX E – MANUFACTURERS’ DATA SHEETS.....</b>	<b>23</b>

**List of Figures**

<i>Figure 1 – Proposed Development</i> .....	5
<i>Figure 2 – Measurement Locations and Site Surroundings</i> .....	7
<i>Figure 3 – MP1 Operational Hours Background Sound Level Analysis</i> .....	8
<i>Figure 4 – MP1 Noise Survey Time History</i> .....	21

**List of Tables**

<i>Table 1 – Measurement Methodology</i> .....	7
<i>Table 2 – Sound Power Levels of Proposed ASHP</i> .....	9
<i>Table 3 – Calculations &amp; BS4142 Noise Impact Assessment (COP Mode)</i> .....	10
<i>Table 4 – Calculations &amp; BS4142 Noise Impact Assessment (Capacity Mode)</i> .....	11
<i>Table 5 – Surveying Equipment</i> .....	21
<i>Table 6 – Survey Weather Conditions</i> .....	22

## 1. Introduction

NOVA Acoustics Ltd has been commissioned to prepare a noise impact assessment for the installation of 3no. Air Source Heat Pumps ('ASHPs') ('the proposed development') at Meltham School, Birmingham Lane, Meltham, Huddersfield, HD9 5LH ('the site').

The applicant is preparing to submit a planning application to Kirklees Council. This report has been prepared to accompany the planning application to be submitted to the Local Planning Authority ('LPA').

A noise survey has been undertaken to establish the prevailing background sound levels at the closest Noise Sensitive Receptors ('NSR'). The report details the existing background sound climate and the predicted noise emissions associated with the proposed development.

Measures required to mitigate noise impact from the proposed development have been recommended where necessary and assessed in accordance with the relevant performance standards, legislation, policy and guidance.

This noise assessment is necessarily technical in nature; therefore, a glossary of terms is included in Appendix A to assist the reader.

### 1.1 Standards, Legislation, Policy & Guidance

The following performance standards, legislation, policy and guidance have been considered to ensure good acoustic design in the assessment:

- Kirklees Council 'Local Plan Strategy and Policies' adopted February 2019; Policy LP52
- Kirklees Council 'Noise Deign Advice' adopted May 2007; Section 1
- National Planning Policy Framework (2024)
- Noise Policy Statement for England (2010)
- British Standard BS4142:2014+A1:2019 – 'Methods for rating and assessing industrial and commercial sound'

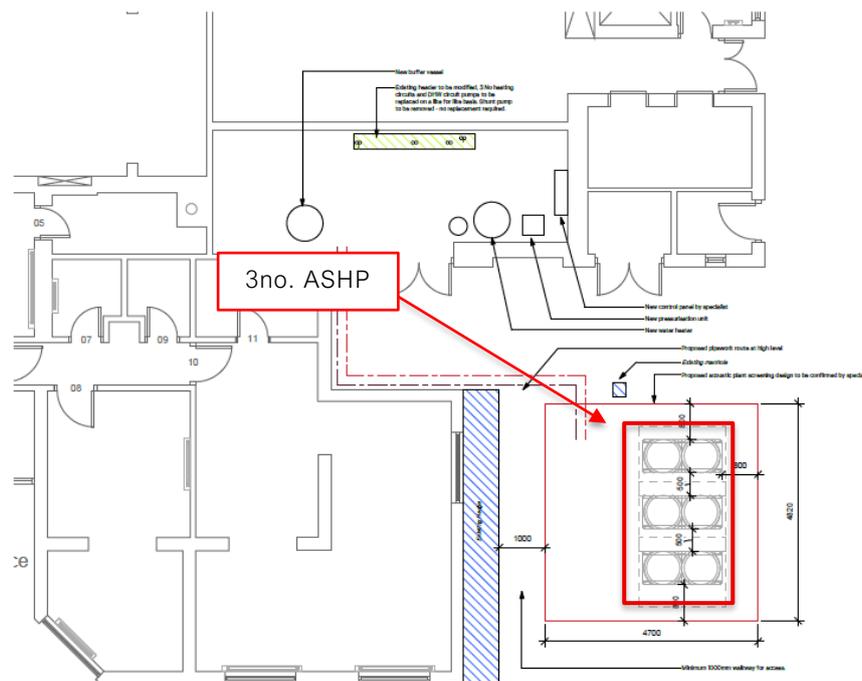
Further information on the legislation can be found in Appendix B.

## 1.2 Proposal Brief

The proposal is for the installation of 3no. ASHP units. Based on previous noise assessments undertaken by Nova Acoustics for similar developments, the standard operating hours of 06:00 – 18:00 hours have been assumed for the assessment. It is proposed that the following unit model will be installed:

- 3no. Mitsubishi Ecodan CAHV-R450YA-HPB

The figure below shows the proposed installation location for the ASHPs.



① 00 - Plantroom Full  
1:50

Drawing Ref. 25319-GAH-Z1-00-DR-M-3902 from G&H

Figure 1 – Proposed Development

## 1.3 Local Planning Authority & Background

The LPAs policies regarding potential noise impacts, are as outlined in 'Local Plan Strategy and Policies – February 2019' and Noise Design Advice – May 2007' and are detailed below.

### Local Plan Strategy and Policies – February 2019

*"Proposals which have the potential to increase pollution from noise, vibration, light, dust, odour, shadow flicker, chemicals and other forms of pollution or to increase pollution to soil or where environmentally sensitive development would be subject to significant levels of pollution, must be accompanied by evidence to show that the impacts have been evaluated and measures have been incorporated to prevent or reduce pollution, so as to ensure it does not reduce the quality of life and well-being of people to an unacceptable level or have unacceptable impacts on the environment."*

*Such developments which cannot incorporate suitable and sustainable mitigation measures which reduce pollution levels to an acceptable level to protect the quality of life and well-being of people or protect the environment will not be permitted.*

*Where possible, all new development should improve the existing environment.”*

### **Noise Design Advice – May 2007**

#### *“1. New Industrial or Commercial Use near to Residential Use*

*1.1 This advice aims to protect the present and future occupiers of residential properties from your new industrial or commercial noise.*

*Developers should carry out an assessment in accordance with BS4142 to determine the rating level of the new development. It is recommended that during normal daytime hours (0700 to 2300 hours), the BS4142 rating level, measured over 1 hour, should be 5 dB below the background (LA90). During the nighttime period (2300 to 0700 hours), the BS4142 rating level, measured over 5 minutes should be 5 dB below the background (LA90).*

*The assessment should be carried out at the site boundary or at the nearest noise sensitive premises, depending on the circumstances. These noise levels are intended to ensure that existing noise sensitive premises and land which may be used for noise sensitive development in future does not become blighted by noise.*

*In addition, the levels specified in Appendix 1 should not be exceeded. These should be calculated assuming windows in noise sensitive premises are open for ventilation (see Appendix 1).*

*1.2 Justification for advice PPG24 states that local planning authorities must ensure that development does not cause an unacceptable degree of disturbance, while at the same time not placing unreasonable restrictions on development and to allow for the creation of jobs and the construction and improvement of essential infrastructure. It accepts that development of this nature will generate noise. PPG24 also refers to the use of BS4142:1997 (where appropriate) to consider noise from industrial and commercial developments. This standard addresses the likelihood of complaints in relation to noise. PPG24 also states that acceptable internal noise levels are given in BS 8233. Level in BS8233 are used in this guidance.”*

## 2. Environmental Noise Survey

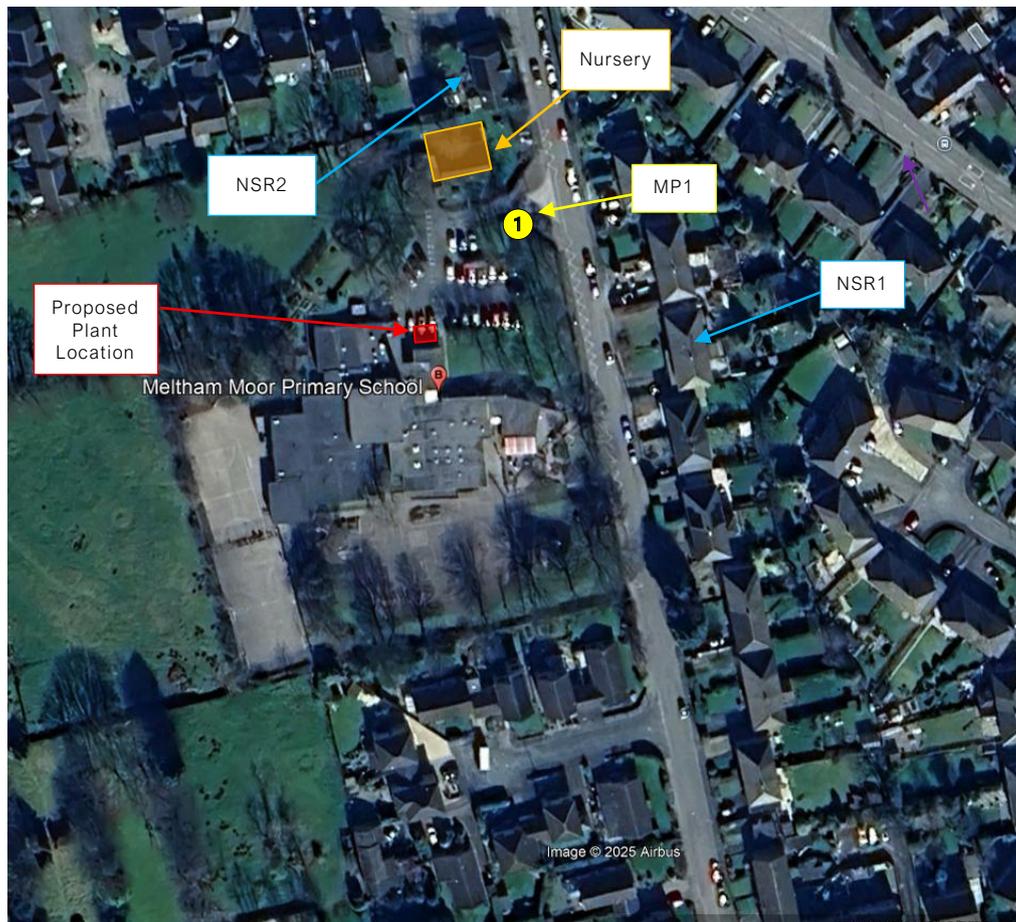
### 2.1 Measurement Methodology

The following table outlines the measurement dates and particulars. Weather conditions during the environmental sound survey can be found in Appendix D.

Location	Survey Dates	Measurement Particulars
MP1	04-05/09/2025	Equipment mounted on a Telegraph Pole at a location representative of the NSR's. The microphone was positioned approximately 4m above the ground and approximately 5m from the edge of Birmingham Lane. A 130mm diameter windshield was fitted to the microphone. The equipment was field calibrated before and after the survey; negligible drift was noted.

Table 1 – Measurement Methodology

Outlined in the figure below are the site surroundings and measurement locations:



Imagery ©2025, Map data ©2025

Figure 2 – Measurement Locations and Site Surroundings

## 2.1 Context & Subjective Impression

The proposed development site is located within the car park of Meltham Moor Primary School. Located to the north of the existing school building. The proposed plant location is located approximately 5m from the window of the existing staff room. Other nearby rooms of the school close to the plant location are plant rooms and kitchen spaces which are not deemed as noise sensitive.

The closest NSR1 are the properties located on Birmingham Lane located to the east of the school at approximately 55m from the proposed plant location.

NSR2 is identified to be the residential properties located to the north of the proposed plant location on Kistvaen Gardens at approximately 60m.

The noise climate in the area is low and predominantly made up of road traffic noise from Birmingham Lane and noise from children playing at the school itself. It is understood that the bungalow located near to MP1 was identified as a nursery building but was not observed to operational during the site visits. Rooftop plant was observed at the school building near the proposed plant location, however, was inaudible at the measurement location.

## 2.2 Environmental Noise Survey Results

### Background Sound Level Analysis

The following figures show histogram graphs of the background sound levels measured during the proposed operational period of 06:00 – 18:00 hours throughout the entire measurement period. The time history results can be found in Appendix D.

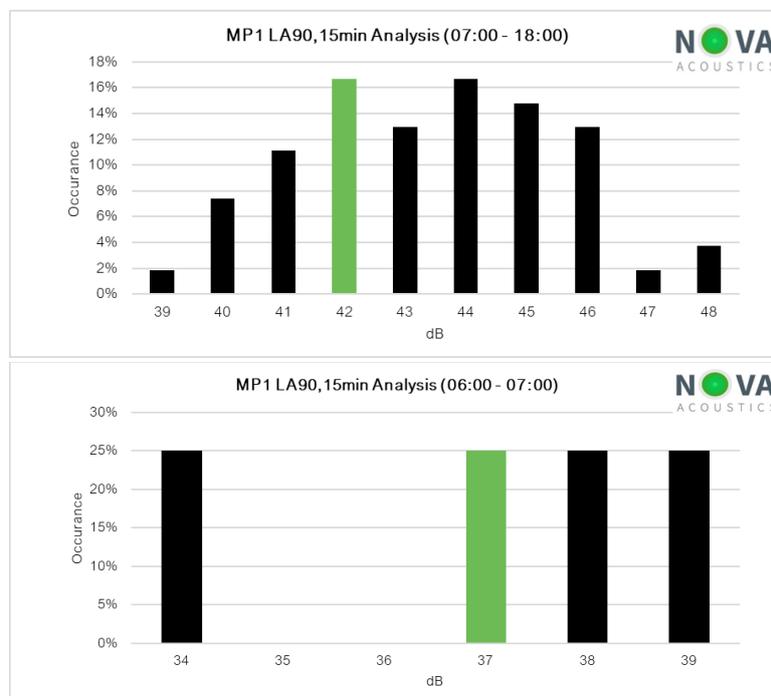


Figure 3 – MP1 Operational Hours Background Sound Level Analysis

As can be seen the figure above, the 'lowest typical' LA<sub>90, 15min</sub> measurements of 42dB and 37dB have been used as the baseline for the daytime and night-time BS4142 assessments, respectively.

### 3. BS4142 Noise Impact Assessment

In the following section of the report, the impact of the noise emissions generated by the proposed development is assessed.

#### 3.1 Proposed External Fixed Plant & Specific Sound Levels

The following table shows the 1/1 octave frequency band sound power levels of the proposed ASHPs' that will be used in the subsequent calculations. Manufacturers data sheets can be found in Appendix E which display two modes of operations, Capacity Mode and COP Mode. Nova Acoustics have been informed that it is likely the units will be set up in the quieter COP mode, however, to ensure robust assessment the noise levels for the Capacity mode have also been used for the assessment.

Description	1/1 Octave Frequency Band (Hz, L <sub>w</sub> dB)								Overall (dBA)
	63	125	250	500	1k	2k	4k	8k	
1no. CAHV-R450YA-HPB (Capacity Mode)	80	87	84	81	76	73	75	66	83
3no. CAHV-R540YA-HPB Units (Capacity Mode)	85	92	89	86	81	78	80	71	88
1no. CAHV-R450YA-HPB (COP Mode)	76	78	78	72	66	64	64	59	75
3no. CAHV-R540YA-HPB Units (COP Mode)	81	83	83	77	71	69	69	64	79

Table 2 – Sound Power Levels of Proposed ASHP

#### 3.2 Plant Compound Screening & ASHP Commissioning

It is understood that the proposed plant units are to be housed in a compound on the edge of the existing car park of the school and will be surrounded by a 2.5m high fence. Confirmation from the design team indicates that spatial considerations have been considered within the initial spacing of the compound to enable for the consideration of a close boarded fence.

The provided drawings indicate that the AHSPs will be situated on a 600mm concrete plinth, and as such, the top of the units is to be circa 2.3m above the ground. Based on these elevational assumptions and that the units are setup in Capacity Mode (louder), the background sound level and LPA criteria is likely to be exceeded at the NSRs, and unfeasible fence heights would be required to mitigate such noise impacts.

**It is recommended that:**

- The ASHP units should be commissioned to Cop mode, and the fence installation is close-boarded and increased to a height of 2.8m.
- If capacity mode is required, then fence heights should be increased to 3m and the ASHP units should not operate between the hours of 23:00 – 07:00.
- The fencing should also have a minimum surface mass of 15kg/m<sup>2</sup>.
- To minimise undesired reflections, the internal facings of the fence compound should also be lined with a minimum of a Class C acoustic absorption product; this would need to be weather

resilient (e.g., mineral wool with a glass tissue lining or a closed/open cell foam; 50mm Stratocell Whisper FR.

### 3.3 BS4142 Noise Impact Assessments

The calculations and BS4142 noise impact assessment at the closest NSR is presented in the table below.

Calculations & BS4142 Noise Impact Assessment (ASHP COP Mode)									
Description	1/1 Octave Frequency Band (Hz, dB)								Overall (dBA)
	63	125	250	500	1k	2k	4k	8k	
3no. CAHV-R450YA-HPB (COP Mode $L_w$ )	81	83	83	77	71	69	69	64	79
On-Time Correction	0 (continuous)								--
Propagation Loss to NSR1	-43 (55m – Q2)								--
Acoustic Shielding (2.8m close-board fence)	-5	-6	-7	-8	-11	-13	-16	-19	--
Specific Sound Level at NSR1 (first floor)	33	34	33	26	17	13	10	2	28
BS4142 Subjective Acoustic Feature Correction	<i>A +3dB penalty has been applied for potentially perceptible intermittent noise emissions or the units ramping on and off.</i>								+3
Rating Sound Level ( $L_{Ar,Tr}$ )	Specific Sound Level + Rating Penalties								31
Background Sound Level	MP1 Night-time $L_{A90,15min}$ – Figure 3.								37
Exceedance	$L_{Ar,Tr} - L_{A90,15min}$								-6
Initial BS4142 Assessment Outcome	'Low Impact, dependent on context'.								
NPPF & NPSE Outcome	'No Observed Adverse Effect Level ('NOAEL')								
LPA Criteria	The target criterion of $L_{A90,T} - 5dB$ (32dB) is achieved.								

Table 3 – Calculations & BS4142 Noise Impact Assessment (COP Mode)

Calculations & BS4142 Noise Impact Assessment (ASHP Capacity Mode)									
Description	1/1 Octave Frequency Band (Hz, dB)								Overall (dBA)
	63	125	250	500	1k	2k	4k	8k	
3no. CAHV-R450YA-HPB (Capacity Mode L <sub>w</sub> )	85	92	89	86	81	78	80	71	88
On-Time Correction	0 (continuous)								--
Propagation Loss to NSR1	-43 (55m – Q2)								--
Acoustic Shielding (3m close-board fence)	-6	-7	-8	-11	-13	-16	-19	-20	--
Specific Sound Level at NSR1 (first floor)	36	42	38	32	25	19	18	8	34
BS4142 Subjective Acoustic Feature Correction	<i>A +3dB penalty has been applied for potentially perceptible intermittent noise emissions or the units ramping on and off.</i>								+3
Rating Sound Level (L <sub>Ar,Tr</sub> )	Specific Sound Level + Rating Penalties								37
Background Sound Level	MP1 Daytime L <sub>A90,15min</sub> – Figure 3.								42
Exceedance	L <sub>Ar,Tr</sub> – L <sub>A90,15min</sub>								-5
Initial BS4142 Assessment Outcome	'Low Impact, dependent on context'.								
NPPF & NPSE Outcome	'No Observed Adverse Effect Level ('NOAEL')								
LPA Criteria	The target criterion of L <sub>A90,T</sub> – 5dB (37dB) is achieved.								

*Table 4 – Calculations & BS4142 Noise Impact Assessment (Capacity Mode)*

## 4. School Internal Noise Level Assessment

The following section of the report assesses the self-impact from noise emissions associated with the proposed development. Whilst the school will have control over when the plant is used, this ensures that the existing internal acoustic environment remains suitable for learning and is not compromised by the presence of the plant.

The plans provided by the applicant show that the proposed ASHP units will be located in a compound with the closest piece of plant approximately 5m from the staff room. As such, an assessment has been carried out in the following section to ensure low levels of impact within the school building.

The suitability of the internal noise levels will be based upon the internal noise criteria from BB93 which states an internal criterion of 45dBA for a staff room. Considering that a partially open window provides 13dB attenuation, the external noise levels outside the staff room windows should not exceed 53dBA to ensure plant noise emission are controlled to 5dB below the target criterion.

Calculations indicate the following:

- In Capacity mode with a 3m tall fence, specific noise emissions are predicted to not exceed 51dBA outside the staff room.
- In Cop mode with a 2.8m tall fence, specific noise emissions are predicted to not exceed 45dBA outside the staff room.

In light of the above, the BB93 criteria should be achieved without the need for further mitigation over what has been recommended in Section 3.2.

## 5. Conclusion and Action Plan

The proposed development has been assessed against the requirements of BS4142 and the LPAs policies and guidance.

Provided one of the mitigation schemes seen in Section 3.2 (dependant on whether ASHPs are commissioned in Capacity or Cop mode) are implemented in full, the BS4142 rating sound levels are predicted to be at least 5dB below the prevailing background sound level at the most affected NSR.

Calculations also indicate that no further mitigation is required to reduce the noise impact on the school itself.

The following 'Action Plan' is outlined to ensure the design considerations and specifications from this report are duly implemented:

1. The ASHP units should be commissioned to Cop mode, and the fence installation is close-boarded and increased to a height of 2.8m.
2. If capacity mode is required, then fence heights should be increased to 3m and the ASHP units should not operate between the hours of 23:00 – 07:00.
3. The fencing should also have a minimum surface mass of 15kg/m<sup>2</sup>.
4. To minimise undesired reflections, the internal facings of the fence compound should also be lined with a minimum of a Class C acoustic absorption product; this would need to be weather resilient (e.g., mineral wool with a glass tissue lining or a closed/open cell foam; 50mm Stratocell Whisper FR).
5. The make and model of ASHP should not be altered. If alterations to the specification and location of the unit are required, then further assessment should be undertaken.

The findings of this report will require written approval from the Local Authority prior to work commencing

## Appendix A – Acoustic Terminology

A-weighted sound pressure level, $L_{pA}$	Quantity of A-weighted sound pressure given by the following formula in decibels (dBA). $L_{pA} = 10 \log_{10} (pA/p_0)^2$ . Where: $pA$ is the A-weighted sound pressure in pascals (Pa) and $p_0$ is the reference sound pressure (20 $\mu$ Pa)
Background Sound	Underlying level of sound over a period, $T$ , which might in part be an indication of relative quietness at a given location
Equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$	Value of the A-weighted sound pressure level in decibels (dB) of a continuous, steady sound that, within a specified time interval, $T$ , has the same mean-squared sound pressure as the sound under consideration that varies with time
Facade level	Sound pressure level 1 m in front of the facade
Free-field level	Sound pressure level away from reflecting surfaces
Indoor ambient noise	Noise in a given situation at a given time, usually composed of noise from many sources, inside and outside the building, but excluding noise from activities of the occupants
Noise Criteria	Numerical indices used to define design goals in a given space
Noise Rating (NR)	Graphical method for rating a noise by comparing the noise spectrum with a family of noise rating curves
Octave Band	Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit
Percentile Level, $L_{AN,T}$	A-weighted sound pressure level obtained using time-weighting “F”, which is exceeded for $N\%$ of a specified time interval
Rating Level, $L_{Ar,Tr}$	Equivalent continuous A-weighted sound pressure level of the noise, plus any adjustment for the characteristic features of the noise
Reverberation time, $T$	Time that would be required for the sound pressure level to decrease by 60 dB after the sound source has stopped
Sound Pressure, $p$	root-mean-square value of the variation in air pressure, measured in pascals (Pa) above and below atmospheric pressure, caused by the sound
Sound Pressure Level, $L_p$	Quantity of sound pressure, in decibels (dB), given by the formula: $L_p = 10 \log_{10} (p/p_0)^2$ . Where: $p$ is the root-mean-square sound pressure in pascals (Pa) and $p_0$ is the reference sound pressure (20 $\mu$ Pa)
Weighted sound reduction index, $R_w$	Single-number quantity which characterizes the airborne sound insulating properties of a material or building element over a range of frequencies

## Appendix B – Standards, Legislation, Policy, and Guidance

This report is to be primarily based on the following standards, legislation, policy and guidance.

### B.1 – National Planning Policy Framework (2024)

Government policy on noise is set out in the National Planning Policy Framework (NPPF), updated in 2024. This replaced all earlier guidance on noise and places an emphasis on sustainability. In section 15, Conserving and enhancing the natural and local environment, paragraph 187e, it states:

*Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;*

Paragraph 198 states:

*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 impact 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; and*
- c) Limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.*

### B.2 – Noise Policy Statement for England (2010)

Paragraph 198 of the NPPF also refers to advice on adverse effects of noise given in the Noise Policy Statement for England (NPSE). This document sets out a policy vision to:

Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

To achieve this vision the Statement identifies the following three aims:

Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life;
- Where possible, contribute to the improvement of health and quality of life.

In achieving these aims the document introduces significance criteria as follows:

#### SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur. It is stated that “significant adverse effects on health and quality of life should be avoided while also considering the guiding principles of sustainable development”.

#### **LOAEL – Lowest Observed Adverse Effect Level**

This is the level above which adverse effects on health and quality of life can be detected. It is stated that the second aim above lies somewhere between LOAEL and SOAEL and requires that: “all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also considering the guiding principles of sustainable development. This does not mean that such adverse effects cannot occur.”

#### **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. This can be related to the third aim above, which seeks: “where possible, positively to improve health and quality of life through the pro-active management of noise while also considering the guiding principles of sustainable development, recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society. The protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim.”

This is further expanded using the updated “Noise Exposure Hierarchy Table” which includes an additional level of impact referred to as the ‘No Observed Adverse Effect Level’ (‘NOAEL’). It is stated that at this level: “*noise can be heard, but does not cause any change in behaviour, attitude or other physiological response*”. In addition, noise at this level “*can slightly affect the acoustic character of the area but not such that there is a change in the quality of life*”.

The NPSE recognises that it is not possible to have a single objective noise-based measure that is mandatory and applicable to all sources of noise in all situations and provides no guidance as to how these criteria should be interpreted. It is clear, however, that there is no requirement to achieve noise levels where there are no observable adverse impacts but that reasonable and practicable steps to reduce adverse noise impacts should be taken in the context of sustainable development and ensure a balance between noise sensitive and the need for noise generating developments.

Any scheme of noise mitigation outlined in this report will, therefore, aim to abide by the above principles of the NPPF and NPSE whilst recognizing the constraints of the site.

### **B.3 – BS4142:2014+A1:2019 – ‘Methods for rating and assessing industrial and commercial sound’**

#### **Overview**

BS4142:2014 sets out a method to assess the likely effect of sound from factories, industrial premises or fixed installations and sources of an industrial nature in commercial premises, on people who might be inside or outside a dwelling or premises used for residential purposes in the vicinity.

The procedure contained in BS4142:2014 for assessing the effect of sound on residential receptors is to compare the measured or predicted sound level from the source in question, the  $L_{Aeq,T}$  'specific sound level', immediately outside the dwelling with the  $L_{A90,T}$  background sound level.

Where the sound contains a tonality, impulsivity, intermittency and other sound characteristics, then a correction depending on the grade of the aforementioned characteristics of the sound is added to the specific sound level to obtain the  $L_{A,r,T}$  'rating sound level'. A correction to include the consideration of a level of uncertainty in sound measurements, data and calculations can also be applied when necessary.

### **Rating Penalty**

Section 9 of BS4142:2014 describes how the rating sound level should be derived from the specific sound level, by deriving a rating penalty.

BS4142:2014 states:

*"Certain acoustic features can increase the significance of impact over that expected from a basic comparison between the specific sound level and the background sound level. Where such features are present at the assessment location, add a character correction to the specific sound level to obtain the rating level. This can be approached in three ways:*

- a) subjective method;*
- b) objective method for tonality;*
- c) reference method."*

Due to the nature of the development the subjective method has been adopted to derive the rating sound level from the specific sound level. This is discussed in Section 9.2 of BS4142:2014, which states:

*"Where appropriate, establish a rating penalty for sound based on a subjective assessment of its characteristics. This would also be appropriate where a new source cannot be measured because it is only proposed at that time, but the characteristics of similar sources can subjectively be assessed. Correct the specific sound level if a tone, impulse or other characteristics occurs, or is expected to be present, for new or modified sound sources."*

BS4142:2014 defines four characteristics that should be considered when deriving a rating penalty, namely; tonality; impulsivity; intermittency; and other sound characteristics, which are defined as:

#### *a) Tonality*

A rating penalty of +2 dB is applicable for a tone which is "just perceptible", +4 dB where a tone is "clearly perceptible", and +6 dB where a tone is "highly perceptible".

#### *b) Impulsivity*

A rating penalty of +3 dB is applicable for impulsivity which is "just perceptible", +6 dB where it is "clearly perceptible", and +9 dB where it is "highly perceptible".

#### *c) Other Sound Characteristics*

BS4142:2014 states that where "the specific sound features characteristics that are neither tonal nor impulsive, though otherwise are readily distance against the residual acoustic environment, a penalty of +3 dB can be applied."

d) *Intermittency*

BS4142:2014 states that when the “specific sound has identifiable on/off conditions, the specific sound level ought to be representative of the time period of length equal to the reference time interval which contains the greatest total amount of on time ... if the intermittency is readily distinctive against the residual acoustic environment, a penalty of +3 dB can be applied.”

***Background Sound Level***

The background sound level is the underlying level of sound over a period, T, and is indicative of the relative quietness at a given location. It does not reflect the occurrence of transient and/or higher sound level events and is generally governed by continuous or semi-continuous sounds.

To ensure the background sound level values used within the assessment are reliable and suitably represent both the particular circumstance and periods of interest, efforts have been made to quantify a ‘typical’ background sound level for a given period. The purpose has not been to simply select the lowest measured value. Diurnal patterns have also been considered as they can have a major influence on background sound levels, for example, the middle of the night can be distinctly different (and potentially of lesser importance) compared to the start or end of the night time period for sleep purposes.

Since the intention is to determine a background sound level in the absence of the specific sound that is under consideration, it is necessary to understand that the background sound level can in some circumstances legitimately include industrial and/or commercial sounds that are present as separate to the specific sound.

***Assessment of Impact***

BS4142:2014 states: “The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs”. An estimation of the impact of the specific sound can be obtained by the difference of the rating sound level and the background sound level and considering the following:

- “Typically, the greater this difference, the greater the magnitude of the impact.”
- “A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.”
- “A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.”
- “The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a negligible impact, depending on the context.”

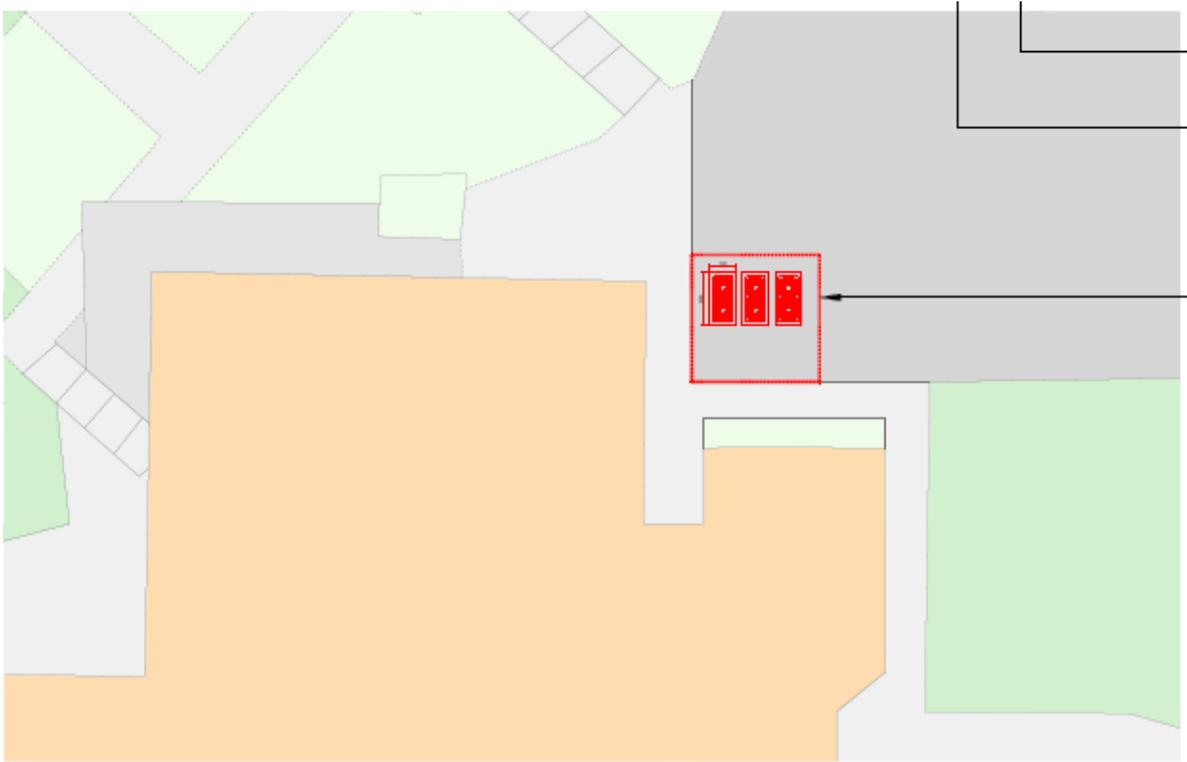
Interpreting the guidance given in BS4142:2014, with consideration of the guidance given in the NPSE and NPPG Noise, an estimation of the impact of the rating sound is summarised in the following text:

- A rating sound level that is +10 dB above the background sound level is likely to be an indication of a Significant Observed Adverse Effect Level;

- A rating sound level that is +5 dB above the background sound level is likely to be an indication of a Lowest Observed Adverse Effect Level;
- The lower the rating sound level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating sound level does not exceed the background sound level, this is an indication of the specific sound source having a negligible impact and would therefore be classified as No Observed Adverse Effect Level.

During the daytime, the assessment is carried out over a reference time period of 1-hour. The periods associated with day or night, for the purposes of the Standard, are 07.00 to 23.00 and 23.00 to 07.00, respectively.

## Appendix C – Location Plans



**Block Plan - As Proposed**  
1:100

## Appendix D – Environmental Survey

### D.1 – Time History Noise Data

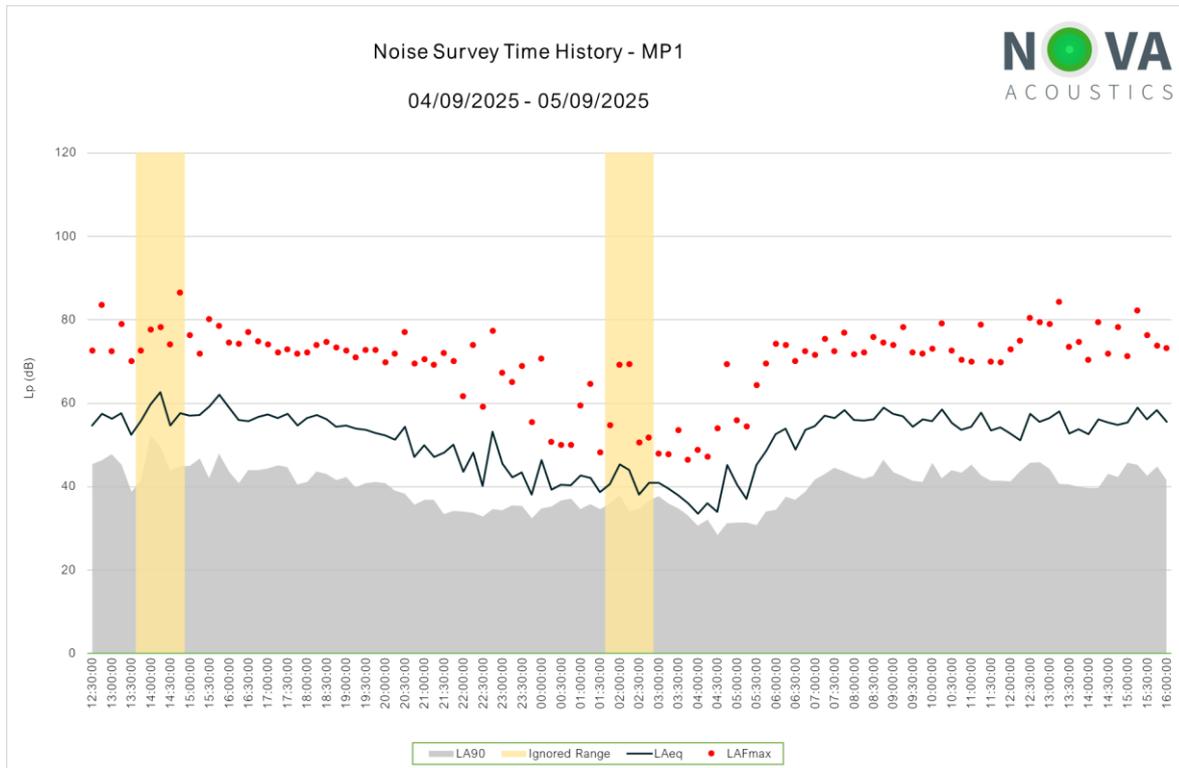


Figure 4 – MP1 Noise Survey Time History

### D.2 – Surveying Equipment

Piece of Equipment	Serial No.	Calibration Deviation
Svantek SV307 Class 1 Sound Level Meter	87871	≤0.1
Svantek SV33B	125695	

Table 5 – Surveying Equipment

All equipment used during the survey was field calibrated at the start and end of the measurement period with a negligible deviation of  $\leq 0.1$  dB. All sound level meters are calibrated every 24 months and all calibrators are calibrated every 12 months by a third-party calibration laboratory. All microphones were fitted with a protective windshield for the entire measurements period. Calibration certificates can be provided upon request.

### D.3 – Meteorological Conditions

As the environmental noise survey was carried out over a long un-manned period no localised records of weather conditions were taken. However, all measurements have been compared with met office weather data of the area, specifically the closest weather station, and the data from the weather station is outlined in the table below. When reviewing the time history of the noise measurements, any scenarios that were considered potentially to be affected by the local weather conditions have been omitted. The analysis of the noise data includes statistical and percentile analysis and review of minimum and maximum values, which aids in the preclusion of any periods of undesirable weather conditions. The weather conditions were deemed suitable for the measurement of environmental noise in accordance with BS7445 Description and Measurement of Environmental Noise. The table below presents the average temperature, wind speed and rainfall range for each 24-hour period during the entire measurement.

Weather Conditions – Slaithwaite (Approx. 2.7km NNE of Site)				
Time Period	Air Temp (°C)	Rainfall (mm/h)	Prevailing Wind Direction	Wind Speed (m/s)
04/09/25: 00:00 – 23:59	11.5 – 16.3	0.0 – 5.3 <sup>[1]</sup>	WSW	0.0 – 7.0 <sup>[2]</sup>
05/09/25: 00:00 – 23:59	10.3 – 17.4	0.0 – 0.5	WSW	0.0 – 6.1 <sup>[3]</sup>

<sup>[1]</sup> Measurement impacted by short heavy showers between 14:00 hours and 15:00 hours on 04/09/25. Data omitted.

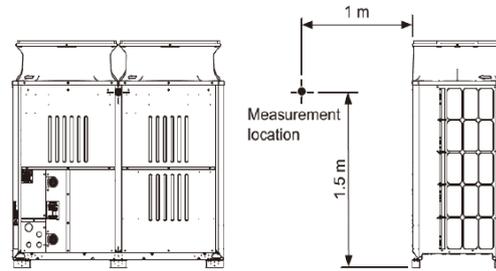
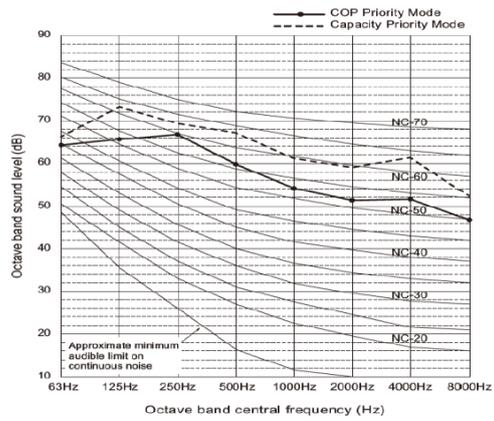
<sup>[2]</sup> High wind speeds occurred outside of the measurement period and are not determined to have impacted the measurement results. Windspeeds during the measurement period were <5.0 m/s and are deemed suitable for the measurement of noise.

<sup>[3]</sup> Wind speeds observed to exceed 5.0m/s between 02:00 – 03:00 hours on 05/09/25.

Table 6 – Survey Weather Conditions

## Appendix E – Manufacturers’ Data Sheets

### Noise Level



Measurement Position for Sound Pressure Level

Sound Pressure Level: 64/72 dB (COP Priority Mode/Capacity Priority Mode)

Operation condition: COP Priority Mode: 7°CDB/6°CWB, Inlet water temp.: 40°C, Outlet water temp.: 45°C



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