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Project:

The Latchets

Title:

Plant Noise Impact Assessment



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1 INTRODUCTION

- 1.01 Environmental Equipment Corporation Limited has been commissioned by Atelier Ochre Ltd to undertake a noise assessment of a single condenser unit to serve The Latchets, a residential cottage located in the village of Oaksey, Malmesbury SN16 9TG.
- 1.02 This noise assessment has been conducted in accordance with the policies and requirements of Wiltshire Council and is based on a noise survey carried out at the site over a typical weekend period.
- 1.03 This assessment includes:
- the setting of plant noise limits in accordance with the requirements of Wiltshire Council and national planning policy, standards and guidance; and
 - the prediction of noise impacts at the worst affected noise sensitive receptors based on the proposed item of plant and their locations.
- 1.04 This report is prepared solely for Atelier Ochre Ltd. Environmental Equipment Corporation Limited accepts no responsibility for its use by any third party. Note that the contents contained herein are produced for the purposes of review by relevant Planning Authority departments and do not constitute a detailed design or specification document to be used for the purposes of construction. Subsequent development of noise mitigation schemes shall engage EEC Ltd and Atelier Ochre Ltd so as to support the conclusions of this report.
- 1.05 Whilst every effort has been made to ensure that this report is easy to understand, it is necessarily technical in nature. To assist the reader, an explanation of the terminology used in this report is contained in Appendix A.

2 SITE

- 2.01 The Latchets is a residential cottage located in the village of Oaksey, Wiltshire on a road called The Street.
- 2.02 The property is bound by the following:
- North – The highway of The Street with residential dwellings No's 2 and 3 beyond;
 - East – All Saints Church;
 - South – Rural grassland; and
 - West – Oaksey C Of E Primary School
- 2.03 This application is for 1 No. Daikin 2MXM68A condenser, to be positioned behind the stone wall and hedge within the designated storage area at the front of the cottage. This area is allocated for plant, bin, and bicycle storage, as illustrated in Appendix B.
- 2.04 The closest noise sensitive receptors to the proposed plant item are the following:
- Residence of Ashleigh Cottage at 2 The Street;
 - All Saints Church, Malmesbury; and
 - Oaksey C Of E Primary School.
- 2.05 It is proposed to enclose the condenser in an acoustic enclosure designed to reduce the noise emissions from the unit at the nearest noise sensitive receptors.
- 2.06 All other noise sensitive receptors are at a greater distance from the proposed location of the unit or are protected by more screening by the intervening structures, and as such will be subject to lower levels of noise.

3 GUIDANCE

- 3.01 Local and National Planning Policy for Wiltshire Council is presented in Appendix C of this document has been obtained from.
- 3.02 A summary of the pertinent points relating to this application are extracted from Section 6.6. *Introduction of a new Industrial or Commercial Noise Source* of the Wiltshire Council Noise and Planning Technical Guidance document and is presented below:
- *New developments should contribute and enhance the area in which they are located and where possible i.e. prevent 'noise creep', contribute to the improvement of people's health and quality of life as per the NPSE. Therefore, the design objective should be:*
'The development should be designed so as to achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location.'
 - *Noise from fixed plant or equipment should be selected, located and designed to achieve the criteria above.*
 - *Where fixed plant, equipment or machinery is attached to a building the vibration caused by it can pass through the building structure and cause structure borne noise elsewhere in the building. Where it is to be installed in or on a building containing a noise sensitive use, structure borne noise should be considered in the noise assessment and adequate control measures should be proposed to prevent vibrations. An example of where this would be required is where there is a proposal to install ventilation equipment on the roof of a residential apartment block*

or it could be an air source heat pump attached to the side of a building.

- 3.03 In accordance with the current National Planning Policy the noise impact from new plant should be assessed in line with the requirements of 'BS4142:2014: Methods for rating and assessing industrial and commercial sound'. The methodology provided can be used to assess the likelihood of any adverse impacts numerically based on the noise emitted as it affects noise sensitive receivers, including any corrections for the character of the noise against existing background noise levels.

4 MEASUREMENTS

- 4.01 Environmental noise measurements were carried out over a weekend period, between 1300 hours on Friday 10th October 2025 and concluded 0945 hours on Monday 13th October 2025, to establish the existing noise levels at the site. The survey methodology and results are set out below.
- 4.02 Noise measurements have been carried out at the following position, as shown in Appendix B and described as:
- Position 1: Located at the front of the property within the storage area at a height of approximately 1.5 metres above ground. The measurement was not located within 3.5 metres of any reflecting surfaces, other than the mounting surface.
- 4.03 This position is considered to be representative of the nearest noise sensitive receptors to the proposed condenser unit location.

5 EQUIPMENT

- 5.01 The equipment used for the survey was as follows:-

- 01dB Fusion Integrating Sound Level Meter conforming to Class 1 BS EN 61672, Type 1 BS EN 60804 & BS EN 60651: 1994;
- GRAS 40CD Condenser Microphone, PRE22 S Pre-amp and Connecting Leads;
- Tripod.

- 5.02 The equipment holds current accreditation and serial numbers as follows:

Sound Level Meter 01dB Fusion	Serial No.	14014
	Calibration Date	7 th May 2025
	Cal Certificate No.	U50916
½" Condenser Mic. GRAS 40CD	Serial No.	383172
	Calibration Date	7 th May 2025
	Cal Certificate No.	50915
Calibrator CAL 31	Serial No.	94723
	Calibration Date	7 th May 2025
	Cal. Certificate No.	U50914

N.B. Copies of calibration certificates are available upon request.

- 5.03 The equipment was calibrated both before and after the survey with no difference noted in the levels.

6 RESULTS

- 6.01 The weather during the survey was suitable for noise measurement, it being dry with little wind for the duration of the survey.
- 6.02 Noise sources at the site include local road traffic. The results indicate cyclical operation from undisclosed plant that may have been running nearby however, this was not a dominant noise source and as such did not affect the measured background level, L_{A90} . There were no other significant sources of noise during the survey.
- 6.03 A list of the levels measured is included in Appendix D and represented graphically in Appendix E.
- 6.04 A summary of the time averaged ambient levels and lowest measured background levels over the measurement periods are shown in Table 6.1. The minimum L_{A90} is the lowest fifteen-minute measurement in the specified period. The BS4142:2014 representative background noise level has also been given. In this case the representative background is considered to be the modal value in each time period.

Position	Period	Average $L_{Aeq,T}$ – dB	Minimum L_{A90} – dB	Representative L_{A90} – dB
1	Day time (0700-1900 hrs)	49	25	35
	Evening (1900-2300 hrs)	45	18	23
	Night-time (2300-0700 hrs)	43	16	18

Table 6.1: Free-Field Measured Ambient and Lowest Background Noise Levels

7 PLANT ASSESSMENT

- 7.01 This application is for the installation of a single Daikin condenser unit to be located within the existing bin store area at the front of the property, proposed to serve The Latchets cottage house.
- 7.02 Based on the standard requirements and the modal representative background noise level in each time period, Table 7.1 sets out the recommended noise limits that the proposed item of plant should meet.
- 7.03 In accordance with the requirements of Wiltshire Council, the proposed noise limits are based on being 5 dB below the modal representative background noise level.

Receptor	Period	Rep Existing $L_{A90,T}$	Proposed Noise Limit L_{Ar}
Residential	Day	35 dB	30 dB
	Evening	23 dB	18 dB
	Night	18 dB	13 dB

Table 7.1: Suggested Plant Noise Emission Limits Based on Lowest Measured L_{A90} , Free-field dB

- 7.04 Note that the limits suggested above are rating levels and as such any design should take into account the acoustic characteristics of the plant. In this instance the proposed unit display none of the characteristics whereby the acoustic correction should be applied.
- 7.05 Assuming the proposed item meet the noise limits set out in Table 7.1, noise will be below the LOAEL with respect to the NPPF.

- 7.06 The proposed unit has a stated manufacturers sound pressure level of 49 dB(A) measured at a distance of 1m in heating mode. Copies of the manufacturer's plant data sheets are included in Appendix F.
- 7.07 The unit will be installed within an acoustic enclosure and on suitable anti-vibration mounts providing a minimum of 95% vibration isolation efficiency to limit the levels of structure borne noise transfer to connecting structures to ensure no audible noise transfer.
- 7.08 Predicted noise levels have been calculated at the closest noise sensitive residential windows at 2 The Street. The closest windows of the All Saints Church and Oaksey C Of E Primary School are located at a similar distance and will be subject to similar or lower noise levels.
- 7.09 Other residential receptors located further from the site will be subject to lower noise levels than those predicted at the above locations.
- 7.10 Tables 7.2 and 7.3 present the results of worst-case plant noise predictions at the worst-case locations.

Item	Noise Level	Notes
Daikin 2MXM68A	49 dB(A)	Sound pressure level at 1m (heating mode)
Noise Control	- 12 dB	High Performance Acoustic Enclosure
Reflections	+ 6 dB	Local additional reflections
Barrier Effect	- 7 dB	Obscured line of sight to proposed plant location
Conformal area Losses over 21 metres	- 23 dB	Distance to closest window
Resultant Noise Level	13 dB(A)	Ashleigh Cottage

Table 7.2: Ashleigh Cottage Plant Noise Calculation

Property	Period	Proposed Noise Limit L_{Ar}	Predicted $L_{Aeq,T}$	Exceedance of noise limit
Ashleigh Cottage	Daytime	30 dB	13 dB	- 17 dB
	Evening	18 dB	13 dB	- 5 dB
	Night-time	13 dB	13 dB	0 dB

Table 7.3: Assessment of Predicted Noise Levels Based on Proposed Noise Limit, Free-field dB(A)

- 7.11 It can be seen from the above tables that the noise limits are met during all periods at the noise sensitive receptors that are closest to and most affected by the proposed plant.
- 7.12 Assuming that the proposed plant and noise control equipment specified in the assessment is included in the installation, predicted noise levels will meet the requirements of the Local Authority during all periods of operation and at the closest noise sensitive receptors.
- 7.13 The proposed scheme of vibration isolation will also mitigate the transfer of vibration to the supporting and connecting structures and ensure that the airborne sound mitigation design is not compromised.

- 7.14 With respect to the NPPF, the resultant noise levels would be classified as being below the NOEL during the day and evening periods and approaching the NOEL overnight. Given the very low magnitude of the absolute noise levels at the receiver positions, impacts are considered to be negligible at all times.

8 CONCLUSIONS

- 8.01 Atelier Ochre Ltd has appointed Environmental Equipment Corporation Limited to undertake a noise assessment of a single Daikin condenser unit proposed to serve The Latchets, a residential cottage along The Street, Oaksey, Malmesbury SN16 9TG.
- 8.02 The assessment has been carried out in accordance with national planning guidance and the requirements of Wiltshire Council and is based on an environmental noise survey conducted at the site over a mid-week period.
- 8.03 A noise assessment has been undertaken to evaluate the potential noise impact of the proposed condenser at the closest existing residential receptors.
- 8.04 Plant noise limits have been set based on the methodology contained in BS4142, the results of a background noise survey and the requirements of Wiltshire Council, to control the noise from the proposed condenser unit. In accordance with Wiltshire Council, the noise limit has been set 5 dB below the representative background noise level.
- 8.05 Predictions have shown that the noise criterion is met at all assessment locations during all periods of the condenser's proposed operation assuming the noise control measures outlined in this report are included in the installations.
- 8.06 Assessing the site in accordance with the principles of the National Planning Policy Framework has shown that predicted noise levels would be below or approaching the level at which no effects are observed to occur, the NOEL.
- 8.07 On the basis of this assessment it is considered that noise does not pose a material constraint to the operation of the condenser unit.

APPENDIX A

GLOSSARY OF TECHNICAL TERMS

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ACOUSTIC TERMINOLOGY

Absorption Classes	The sound absorption of a material is rated from Class A to Class E, where Class A materials provide the highest level of sound absorption.
Ambient Noise Levels	Noise levels measured in the absence of noise requiring control, frequently measured to determine the situation prior to the additional of a new noise source.
dB	Decibel. The logarithmic unit of sound level.
dB(A)	A-weighted decibel. The A-weighting approximates the response of the human ear.
$D_{nT,w}$	Weighted standardized level difference. A single number quantity of the sound level difference between two rooms. $D_{nT,w}$ is typically used to measure the on-site sound insulation performance of a building element such as a wall, floor or ceiling. Measured in accordance with BS EN ISO 16283-1 and weighted in accordance with BS EN ISO 717-1.
$D_{n,e,w}$	The weighted element-normalized level difference. A single number rating of the sound reduction provided by a sound passing through an individual element. $D_{n,e,w}$ is typically used to define the sound insulation provided by ventilators. Measured in accordance with BS EN ISO 10140-2:2010 and rated in accordance with BS EN ISO 717-1.
Flanking	Transmission of sound energy through paths adjacent to the building element being considered. For example, sound may be transmitted around a wall by travelling up into the ceiling space and then down into the adjacent room.
Frequency	Sound can occur over a range of frequencies extending from the very low, such as the rumble of thunder, up to the very high such as the crash of cymbals. Sound is generally described over the frequency range from 63Hz to 4kHz, roughly equal to the range of frequencies on a piano.
Impact Sound	Sound produced by an object impacting directly on a building structure, such as footfall noise or chairs scrapping on a floor.
$L_{Aeq,t}$	The equivalent continuous sound level measured in dBA. This is commonly referred to as the average noise level. 't' is the interval time for the measurement. Typically 't' of 16hrs and 8hrs is used for day and night time ambient noise respectively or 't' is defined by the period of interest in BS4142 assessments.
$L_{A90,t}$	The noise level exceeded for 90% of the measurement period, measured in dBA. This is commonly referred to as the background noise level.
$L'_{nT,w}$	Weighted, standardized impact sound pressure level. A single number rating of the impact sound insulation of a floor/ceiling when impacted on by a standard "tapper" machine. The lower the $L'_{nT,w}$, the better the acoustic performance. Measured in accordance with BBS EN ISO 140-7 and rated in accordance with BS EN ISO 717-2.
NR	Noise Rating. A single number rating which is based on the sound level in the octave bands 31.5Hz – 8kHz inclusive, generally used to assess noise from mechanical services in buildings.
Octave Band	Frequencies are often grouped together into octaves for analysis. Octave bands are labelled by their centre frequency which are: 63Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz and 4kHz.
Reverberation Time (T_{mf})	Reverberation time is used for assessing the acoustic qualities of a space. It is defined as the time it takes for an impulse to decay by 60dB. T_{mf} is the arithmetic average of the reverberation time in the mid frequency bands (500Hz, 1kHz and 2kHz).
R_w	Weighted sound reduction index. A single number rating of the sound insulation performance of a specific building element. R_w is measured in a laboratory. R_w is commonly used by manufacturers to describe the sound insulation performance of building elements such as plasterboard and concrete. Measured in accordance with BS EN ISO 10140-2:2010 and rated in accordance with BS EN ISO 717-1.
Sound Absorption	When sound hits a surface, some of the sound energy is absorbed by the surface material. Sound absorption refers to the ability of a material to absorb sound, rated from 0, complete reflection, to 1, complete absorption.
Sound Insulation	When sound hits a surface, some of the sound energy travels through the material. 'Sound insulation' refers to the ability of a material to prevent the travel of sound.
Structure-borne transmission	Transmission of sound energy as vibrations via the structure of a building.

APPENDIX B

**SITE PLAN
&
MEASUREMENT LOCATION**



APPENDIX C
PLANNING POLICY
AND GUIDANCE

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PLANNING POLICY AND GUIDANCE

Wiltshire Council Noise and Planning Technical Guidance

The Planning Consultation Guidance Note – Noise and Vibration (NPTG) sets out the Council's planning advice for controlling noise from new development and protecting noise sensitive new development from existing noise.

The following is stated in the *Specific Guidance for Proposed Developments* section of the document:

6.5 Noise from industrial and commercial sources impacting new residential developments

To assess the impact of existing industrial and commercial noise sources on new residential developments, applicants should undertake an assessment in line with BS 4142:2014 + A1:2019. The noise mitigation hierarchy in section 5 shall be used with the aim of achieving a rating level of the industrial or commercial sound source level no greater than the representative background sound, where practicable when measured in accordance with BS 4142:2014 + A1: 2019. There may be instances, for specific sites, where a rating level at 5 dB below background is deemed appropriate. This can be determined through discussion with the Local Planning Authority (LPA).

In addition, maximum noise levels at night attributable to the industrial or commercial source should not exceed 60 dB LAFmax at the façade.

6.6 Introduction of a new Industrial or Commercial Noise Source

For most proposed industrial and commercial noise sources, an assessment in line with BS 4142 should be carried out at the façade of noise sensitive premises. One of the indications of the impact of a BS 4142 assessment is 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 low impact, depending on the context.

New developments should contribute and enhance the area in which they are located and where possible i.e. prevent 'noise creep', contribute to the improvement of people's health and quality of life as per the NPSE. Therefore, the design objective should be:

'The development should be designed so as to achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location.'

Where this criterion cannot be achieved, the various noise control measures considered as part of the assessment should be fully explained (i.e. relocation of noise sources, use of quieter equipment, enclosures, screening, restriction of the hours of operation) and the achievable noise level should be identified. This information will allow a judgement to be made concerning the application and its likely impact on the surrounding area. In addition to the above, maximum noise levels should also be adequately controlled.

Background and ambient noise levels shall be representative of the existing noise levels at the most sensitive time during the proposed period(s) of operation. Where different operating regimes are proposed (for example daytime, evening and night-time), background and ambient noise levels shall be determined for each operating period.

In addition to the above assessment, the applicant should assess the maximum noise levels (LAFmax) from the development that are expected to occur between the hours of 19:00 and 07:00. Overnight monitoring will be necessary where the external LAFmax sound levels are likely to exceed 60 dB during the night period at the façade of the nearest noise sensitive dwelling.

Noise from fixed plant or equipment should be selected, located and designed to achieve the criteria above.

Where available, product specification data for new item should be submitted with the acoustic report. Consultants should be using these to compare with data from the noise survey and propose mitigation where the levels are above those specified in the criterion. Where this information is not available a consultant may choose to measure the noise, levels generated by the equipment in question where the equipment has already been installed elsewhere (and in accordance with BS 4142).

Where fixed plant, equipment or machinery is attached to a building the vibration caused by it can pass through the building structure and cause structure borne noise elsewhere in the building. Where it is to be installed in or on a building containing a noise sensitive use, structure borne noise should be considered in the noise assessment and adequate control measures should be proposed to prevent vibrations. An example of where this would be required is where there is a proposal to install ventilation equipment on the roof of a residential apartment block or it could be an air source heat pump attached to the side of a building.

National Planning Policy Framework and the Noise Policy Statement for England

The Department for Communities and Local Government published the National Planning Policy Framework (NPPF) on 27th March 2012 (as amended on 12th December 2024) and upon its publication, the majority of planning policy statements and guidance notes were withdrawn, including Planning Policy Guidance 24 Planning and Noise, which previously presented the government's overarching planning policy on noise.

Paragraph 187 in Section 15 of the NPPF , entitled Conserving and enhancing the natural environment, states that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) 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..."

Paragraph 198 in Section 15 also states that:

"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...”

The Department for Environment Food and Rural Affairs published the Noise Policy Statement for England (NPSE) in March 2010. The explanatory note of NPSE defines the following terms used in the NPPF:

“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.

2.21 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.”

The NPSE does not define any of the above effect levels numerically.

The NPSE presents the Noise Policy Aims as:

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

avoid significant adverse impacts on health and quality of life;

mitigate and minimise adverse impacts on health and quality of life; and

where possible, contribute to the improvement of health and quality of life.”

It can be seen that the first two bullet points are similar to Section 11 of the NPPF, with a third aim that seeks to improve health and quality of life. The NPSE later expands on the Noise Policy Aims, stating:

2.23 The first aim of the NPSE states that significant adverse effects on health and quality of life should be avoided while also taking into account the guiding principles of sustainable development (paragraph 1.8).

2.24 The second aim of the NPSE refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development (paragraph 1.8). This does not mean that such adverse effects cannot occur.

2.25 This aim (the third aim), seeks where possible, positively to improve health and quality of life through the pro-active management of noise while also taking into account the guiding principles of sustainable development (paragraph 1.8), 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.”

It is clear that noise described in the NPSE as SOAEL that would lead to significant adverse effects should be avoided, although there is no definition as to what constitutes a significant adverse effect. Similarly, noise should be mitigated where it is high enough to lead to adverse effects, termed the LOAEL, but not so high that it leads to significant adverse effects.

British Standard 4142

To assess the acceptability of the resultant noise levels we have consulted the relevant standards. BS 4142:2014 ‘Methods for rating and assessing industrial and commercial sound’ has been used to assess the likelihood any adverse impacts based on the resultant noise level from the new plant item, including any corrections for the character of the noise against the existing background noise level.

BS4142 gives guidance on assessing the likelihood of adverse impacts by calculating a ‘rating level’ of the new noise source and comparing its magnitude at noise sensitive locations to the existing or underlying background noise level. The background noise level is subtracted from the ‘rating level’ to assess the likelihood of complaints:

- The greater the difference the greater the likelihood of complaints.
- A difference of around +10dB or more is an indication of a significant adverse impact, depending on the context.
- A difference of +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 noise level, the less likely it is that the specific sound source will have an adverse impact or 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 low sound impact, depending on the context.

This assessment is carried out over a one hour period for the daytime and a fifteen minute period for the night-time. For the purposes of the standard it states that daytime and night-time are typically 07:00 to 23:00 hours and 23:00 to 07:00 hours respectively.

The ‘rating level’ of the noise source is obtained taking the following factors into consideration:

- The new plant noise (the specific noise) is measured or predicted in terms of L_{Aeq} .
- An additional correction shall be included if the noise contains a distinguishable, discrete continuous note, if the noise contains distinct impulses or if the noise is irregular enough to attract attention. The value for any tonal noise can be an addition of up to 6dB and for impulsive noise of up to 9dB.

BS 4142 goes onto state that:

‘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 effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making

assessments and arriving at decisions, therefore, it is essential to place the sound in context.'

BS4142 has been referenced in setting noise limits for any fixed plant proposed as part of the proposed development.

APPENDIX D
SURVEY RESULTS
(TABULAR)

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EC 21579 - The Latchets

Atelier Ochre Ltd

Tabulated Noise data

Sheet 1 of 3

Time	L _{Aeq}	L _{AMax}	L _{A90}
13:00	46	70	33
13:15	46	69	29
13:30	46	71	31
13:45	45	61	31
14:00	46	71	30
14:15	45	69	33
14:30	47	73	34
14:45	44	66	34
15:00	47	72	35
15:15	53	75	39
15:30	46	71	36
15:45	46	71	35
16:00	49	72	35
16:15	51	71	35
16:30	49	73	35
16:45	48	71	32
17:00	49	71	34
17:15	45	68	32
17:30	47	71	33
17:45	47	69	33
18:00	48	72	33
18:15	47	72	30
18:30	47	72	38
18:45	47	73	35
19:00	50	74	27
19:15	42	59	25
19:30	43	72	23
19:45	38	65	21
20:00	49	72	22
20:15	39	57	23
20:30	40	71	19
20:45	37	55	25
21:00	49	72	22
21:15	39	54	22
21:30	41	72	19
21:45	38	52	19
22:00	49	72	19
22:15	37	55	19
22:30	43	72	24
22:45	35	55	18
23:00	50	73	18
23:15	34	54	17
23:30	40	72	17
23:45	32	53	19
00:00	51	73	18
00:15	22	38	17
00:30	40	72	18
00:45	29	53	17

Time	L _{Aeq}	L _{AMax}	L _{A90}
01:00	40	73	17
01:15	21	51	17
01:30	40	73	17
01:45	24	43	16
02:00	43	73	17
02:15	20	48	17
02:30	42	72	17
02:45	30	54	18
03:00	45	72	17
03:15	21	38	17
03:30	41	72	17
03:45	23	42	17
04:00	46	73	17
04:15	32	57	17
04:30	41	73	17
04:45	21	36	17
05:00	47	73	17
05:15	29	50	17
05:30	42	72	17
05:45	34	54	17
06:00	48	72	36
06:15	39	55	20
06:30	42	72	20
06:45	41	57	23
07:00	56	88	26
07:15	42	65	28
07:30	42	72	27
07:45	39	55	28
08:00	50	73	28
08:15	46	64	28
08:30	44	73	29
08:45	43	69	29
09:00	51	73	33
09:15	47	70	32
09:30	53	73	36
09:45	44	63	34
10:00	52	73	36
10:15	47	67	36
10:30	45	73	35
10:45	46	59	37
11:00	51	72	37
11:15	49	61	37
11:30	46	72	33
11:45	47	65	34
12:00	54	73	31
12:15	48	63	34
12:30	47	72	31
12:45	46	68	33

EC 21579 - The Latchets

Atelier Ochre Ltd

Tabulated Noise data

Sheet 2 of 3

Time	L _{Aeq}	L _{AMax}	L _{A90}
13:00	47	72	36
13:15	49	73	40
13:30	47	72	33
13:45	48	68	34
14:00	49	72	37
14:15	55	87	38
14:30	58	87	40
14:45	48	68	39
15:00	48	70	38
15:15	48	66	36
15:30	49	72	39
15:45	49	82	36
16:00	48	72	37
16:15	45	59	36
16:30	45	70	33
16:45	43	58	33
17:00	49	72	30
17:15	45	65	31
17:30	45	72	31
17:45	46	66	30
18:00	49	72	29
18:15	42	65	31
18:30	43	71	28
18:45	41	64	25
19:00	49	72	23
19:15	36	54	22
19:30	42	72	23
19:45	39	57	21
20:00	49	73	22
20:15	33	54	21
20:30	53	79	23
20:45	39	61	21
21:00	50	73	20
21:15	37	60	23
21:30	43	72	23
21:45	35	53	24
22:00	50	73	23
22:15	39	62	19
22:30	42	72	19
22:45	33	53	18
23:00	51	73	18
23:15	34	52	17
23:30	40	72	18
23:45	28	49	18
00:00	51	73	18
00:15	33	54	18
00:30	40	72	18
00:45	31	52	17

Time	L _{Aeq}	L _{AMax}	L _{A90}
01:00	40	72	17
01:15	23	39	16
01:30	40	72	16
01:45	18	38	16
02:00	43	72	16
02:15	27	50	16
02:30	40	72	16
02:45	18	41	16
03:00	44	72	16
03:15	31	55	16
03:30	39	72	16
03:45	20	37	16
04:00	45	72	16
04:15	19	38	16
04:30	40	72	17
04:45	20	37	17
05:00	47	73	17
05:15	32	55	18
05:30	40	71	18
05:45	34	56	18
06:00	47	72	18
06:15	31	56	19
06:30	42	72	21
06:45	41	64	23
07:00	50	73	28
07:15	41	58	30
07:30	41	71	27
07:45	39	53	28
08:00	49	72	28
08:15	44	66	28
08:30	44	73	29
08:45	43	65	31
09:00	50	73	28
09:15	44	62	31
09:30	50	80	33
09:45	49	68	33
10:00	51	72	33
10:15	50	72	32
10:30	45	71	31
10:45	47	71	36
11:00	51	72	38
11:15	48	67	37
11:30	48	72	33
11:45	47	61	37
12:00	52	72	37
12:15	46	70	35
12:30	46	71	31
12:45	47	68	32

EC 21579 - The Latchets

Atelier Ochre Ltd

Tabulated Noise data

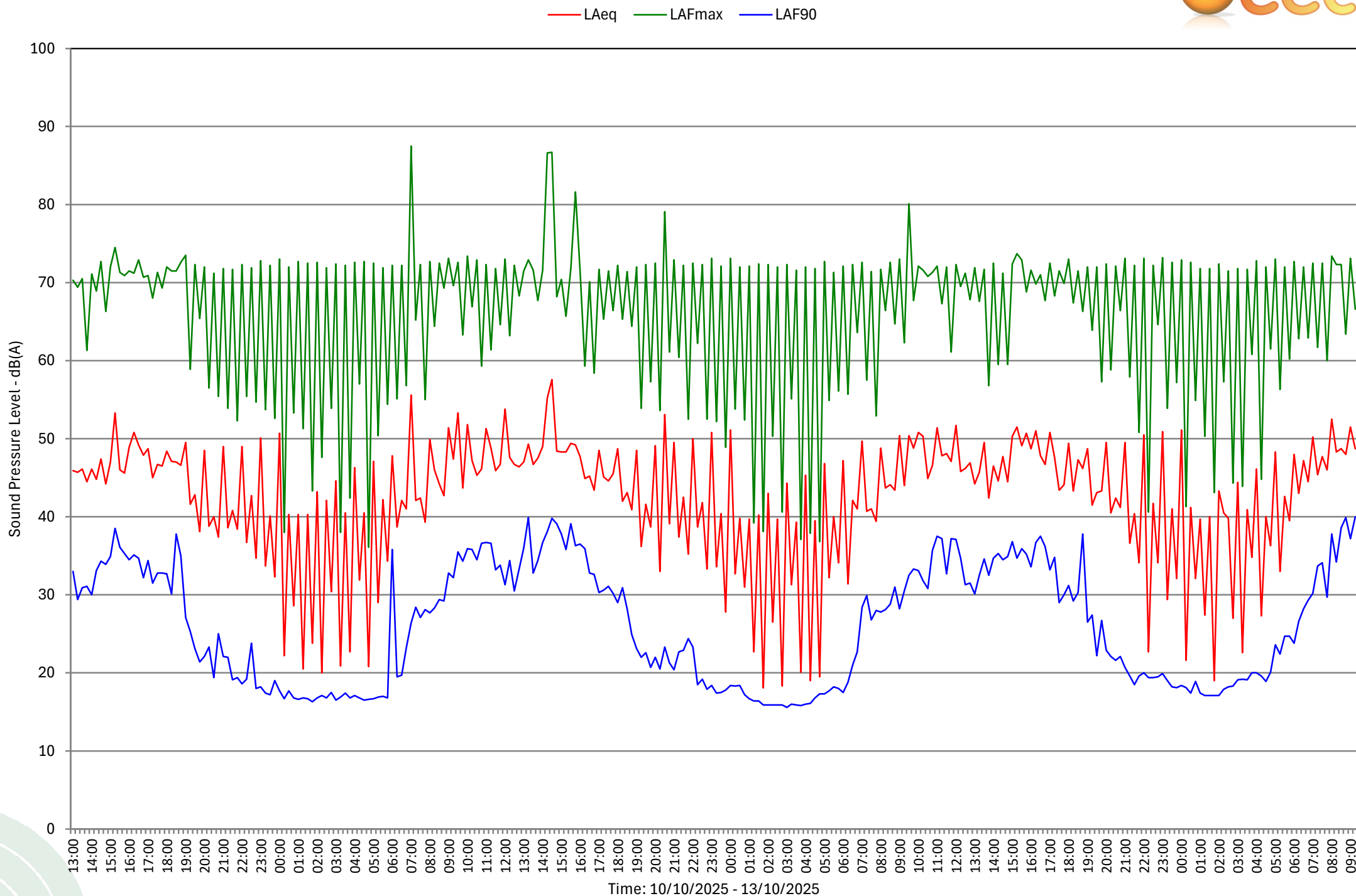
Sheet 3 of 3

Time	L _{Aeq}	L _{AMax}	L _{A90}
13:00	44	72	30
13:15	46	68	33
13:30	50	72	35
13:45	42	57	33
14:00	47	73	35
14:15	45	60	35
14:30	48	71	35
14:45	45	60	35
15:00	50	72	37
15:15	52	74	35
15:30	49	73	36
15:45	51	69	35
16:00	49	72	34
16:15	51	70	37
16:30	48	71	38
16:45	47	68	36
17:00	51	73	33
17:15	48	68	35
17:30	43	72	29
17:45	44	70	30
18:00	49	73	31
18:15	43	67	29
18:30	47	72	30
18:45	46	66	38
19:00	49	72	27
19:15	42	64	27
19:30	43	72	22
19:45	43	57	27
20:00	50	72	23
20:15	41	59	22
20:30	42	72	22
20:45	41	66	22
21:00	50	73	21
21:15	37	58	20
21:30	40	72	19
21:45	34	51	20
22:00	51	73	20
22:15	23	41	19
22:30	42	72	19
22:45	34	65	20
23:00	51	73	20
23:15	29	54	19
23:30	41	73	18
23:45	32	57	18
00:00	51	73	18
00:15	22	41	18
00:30	41	73	17
00:45	32	55	19

Time	L _{Aeq}	L _{AMax}	L _{A90}
01:00	40	72	17
01:15	27	50	17
01:30	40	72	17
01:45	19	43	17
02:00	43	72	17
02:15	41	57	18
02:30	40	72	18
02:45	27	44	18
03:00	44	72	19
03:15	23	44	19
03:30	41	72	19
03:45	35	61	20
04:00	46	73	20
04:15	27	45	20
04:30	40	72	19
04:45	36	62	20
05:00	48	73	24
05:15	33	56	22
05:30	43	72	25
05:45	40	60	25
06:00	48	73	24
06:15	43	63	27
06:30	47	72	28
06:45	45	63	29
07:00	50	73	30
07:15	45	62	34
07:30	48	73	34
07:45	46	60	30
08:00	53	73	38
08:15	48	72	34
08:30	49	72	39
08:45	48	63	40
09:00	52	73	37
09:15	49	67	40

APPENDIX E
SURVEY RESULTS
(GRAPHICAL)

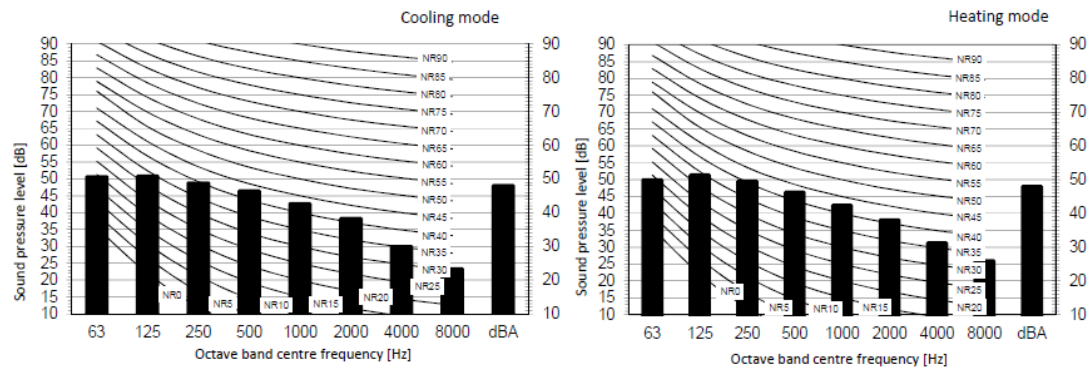
Noise Level Time History at The Latchets



APPENDIX F

PUBLISHED PLANT NOISE DATA

2MXM68A 3MXM68A

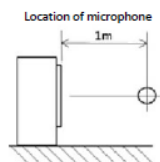


Legend

dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale

B Fan speed: High



Cooling Total dB

A	B
dBA	48

Heating Total dB

A	B
dBA	49

Notes

- Operating conditions: power source 220-240 V/220 V 50/60 Hz, JIS standard
- Background noise already taken into account.
- Operating noise varies depending on operation and ambient conditions.
- The operation noise measuring method is in accordance with JISC9612.
- Measuring location: anechoic chamber

3D106223B