

SHARPS REDMORE

ACOUSTIC CONSULTANTS ▪ Established 1990



Report

**Aldi, London Road, East
Grinstead**

Plant noise assessment

Application ref DM/24/1887,
Condition 4

Prepared by
Mark Taylor MIOA

Date 16th January 2025
Project No 2422499

Head Office

Sharps Redmore

The White House, London Road,
Copdock, Ipswich, IP8 3JH

T 01473 730073

E contact@sharpsredmore.co.uk

W sharpsredmore.co.uk

Regional Locations

South England (Head Office),
North England, Wales, Scotland

Sharps Redmore Partnership Limited

Registered in England No. 2593855

Directors

RD Sullivan BA(Hons), PhD, CEng, MIOA, MAAS, MASA;

KJ Metcalfe BSc(Hons), MIOA;

N Durup BSc(Hons), MSc, PhD, CEng, FIOA, MInstP, MASA, MAES;

GJ King MIOA, MCIEH

Company Consultant

TL Redmore BEng, MSc, PhD, MIOA



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DISCLAIMER

This report has been prepared with all reasonable skill, care and diligence commensurate with an acoustic consultancy practice under the terms and brief agreed with our client at that time. Sharps Redmore provides no duty or responsibility whatsoever to any third party who relies upon its content, recommendations or conclusions.

1.0 Introduction

- 1.1 Sharps Redmore (SR) has been instructed to undertake a noise assessment of the proposed replacement plant at the existing Aldi store, on London Road, East Grinstead.
- 1.2 The proposal is to replace the existing plant, with new plant in the same locations as the existing (rear north west corner of the store, and within the covered loading bay), and additional Air Source Heat Pumps (ASHP's) to be located at the rear of the store – see Appendix D for the plant and site layout drawings.
- 1.3 Planning consent has been granted for the replacement of the refrigeration plant and additional ASHP's, planning application ref DM/24/1887, subject to a number of planning conditions.

Condition 4 states "The development hereby permitted shall not come into use until a scheme has been submitted to the Local Planning Authority demonstrating that the noise rating level (L_{Ar,Tr}) of fixed plant and machinery (mechanical and electrical) shall not exceed the measured background noise level of 36 dB LA90, at any premises used for residential purposes surrounding the site. All measurements shall be defined and derived in accordance with BS4142:2014+A1:2019. The assessment shall be carried out with the plant/machinery operating at its maximum setting. The approved measures shall be implemented before the development is brought into use and thereafter be maintained in accordance with the approved details."

- 1.4 The available methods of assessment and assessment criteria are presented at section 2.
- 1.5 An assessment of predicted plant noise levels is contained at section 3.0
- 1.6 Details of the noise model methodology are presented in Section 4.0
- 1.7 The surrounding area is a combination of residential and other commercial properties. The nearest residential properties are located adjacent to the north / north east of the store in Tower Close, and to the rear of the store on the opposite side of the railway line, in Green Hedges Avenue.

2.0 The fixed plant noise control scheme – conclusions and recommendations

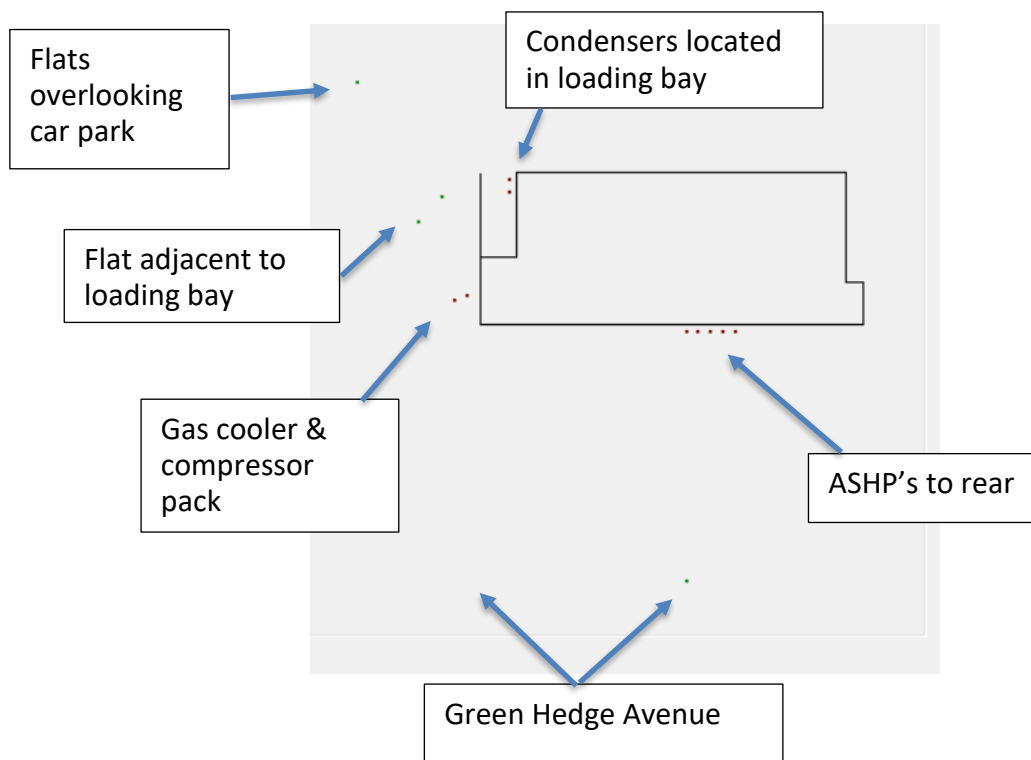
- 2.1 Based on the environmental noise model (see Section 3.0), the predicted noise levels without any additional mitigation are as follows:

Table 1: Predicted noise levels

Location	Daytime (0700-2300)		Night (2300-0700)	
	Predicted rating level LAeq	Target criteria LAeq	Predicted rating level LAeq	Target criteria LAeq
Flats overlooking car park	35 dBA (32+3)	36 dBA	35 dBA (32+3)	36 dBA
Flats to rear of loading bay	36 dBA (33+3)	36 dBA	36 dBA (33+3)	36 dBA
Green Hedges Avenue	33 dBA (30+3)	36 dBA	33 dBA (30+3)	36 dBA

- 2.2 The comparison in Table 1 demonstrates that the predicted rating noise level is in compliance with the target criteria specified in Condition 4 of the planning consent.
- 2.3 A schedule of manufacturers noise data used for the proposed plant is shown in Appendix A. Based on our experience, the type of plant proposed is not impulsive or tonal in nature, however the refrigeration plant does tend to operate intermittently, therefore a +3 dB correction has been applied to the predicted noise levels presented in Table 1.

Figure 1: Detailed below is a sketch from the noise model.



3.0 The noise model and prediction methodology

3.1 The noise model employed has been written in-house to provide an accurate prediction method for assessing environmental noise from, in particular, plant and equipment items which can be perceived as being point sources. It has been mainly used for the prediction of noise emanating from superstores.

3.2 There are three input spreadsheets containing:

- noise sources data
- receiver data
- acoustic screening data

These are included in Appendix A.

3.3 The noise sources data include one of the following forms for each item of plant:

- either, octave band sound power levels in the range of 63 to 8000Hz – this being available from manufacturer of many of the supply and extract fans.
- or, octave band sound pressure levels in the range of 63 to 8000Hz – this is available usually for the small, externally mounted split units' condenser fans from the manufacturer's product catalogue when measured at one metre in anechoic conditions, thus allowing straight forward calculation of the equivalent sound power levels.
- or, single value sound pressure levels at a stated distance

3.4 The relative location of the plant using X and Y co-ordinates with an arbitrary datum point and a Z (height) co-ordinate based on supporting steel and screening heights from the main contractor and then the equipment heights based, in this case, on the mechanical services contractor drawings.

3.5 Where known, the area and orientation of the noise outlet is entered together with its location adjacent to either one, two or three reflective surfaces so that the calculation can establish the directivity pattern and outlet reflection losses.

3.6 The receiver data needed are the X, Y and Z co-ordinates so that the relative distance and angle can be calculated between the source and the receiver.

3.7 Finally, several types of acoustic screening may be entered. In this case, this is designated "R" meaning a ring barrier used to indicate the parapet of the building itself, and "F" meaning a finite barrier, used to indicate the location of the loading bay.

3.8 The noise model carries out "text book" atmospheric side calculations at each receiver position from each source allowing for the attenuation from such as the calculated distance and screening. The calculations are performed in eight Octave bands from 63 to 8000Hz but can then be summarised as dBA, NR or NC for convenience. In this case, the overall summary levels are in dBA. Calculations for the plant are included in Appendix C. The computer maintains a logarithmic total of the noise +levels in Octave bands.

- 3.9 At the end of each program “run”, the overall day or night time noise level at each receiver position are calculated and ranked in descending order of noise level. Where this ranking shows that the receiver position’s noise level exceeds the noise criterion, each calculation can be interrogated to determine the plant items needing more detailed inspection to establish the attenuation needed. The process is repeated until either the noise level meets the noise criterion or the program demonstrates that other noise control methods are needed. This may take the form of restricting the offending plant’s period of operation or improving the screening or re-selection to give quieter plant.
- 3.10 Plant noise predictions are shown in summary form; full calculations of noise from each source to each receptor are available on request.

4.0 Assessment conclusions

- 4.1 Condition 4 states *“The development hereby permitted shall not come into use until a scheme has been submitted to the Local Planning Authority demonstrating that the noise rating level (L_Ar,Tr) of fixed plant and machinery (mechanical and electrical) shall not exceed the measured background noise level of 36 dB LA90, at any premises used for residential purposes surrounding the site. All measurements shall be defined and derived in accordance with BS4142:2014+A1:2019. The assessment shall be carried out with the plant/machinery operating at its maximum setting. The approved measures shall be implemented before the development is brought into use and thereafter be maintained in accordance with the approved details.”*
- 4.2 This assessment has been undertaken in accordance with the guidelines in BS 4142:2014+A1:2019.
- 4.3 Based on the comparison presented in Table 1, the predicted rating noise levels are equal to or below the existing background noise level of 36 dB LA90, therefore in compliance with the requirements of Condition 4 of the planning consent.
- 4.4 This assessment objectively demonstrates that noise arising from the fixed plant, complies with the requirement of paragraph 198 of the NPPF to avoid significant adverse impact.

APPENDIX A

NOISE SOURCE DATA

CLIENT :Aldi				A Sht: 1 of 1							
PROJECT :East Grinstead				PROJECT No:2422499							
CONSULTANT:MT				DATE :16 January 2025							
SOUND POWER LEVELS (Lw) & SOUND PRESSURE LEVELS (Lp) FOR FANS AND OTHER EQUIPMENT											
EQUIPMENT NAME/REFERENCE	Lw/Lp	DIST. (m)	OP. TIME DNA	MID FREQUENCY OCTAVE BANDS (HZ)							
				63	125	250	500	1k	2k	4k	8k
Gas cooler	Lp	10	A	Maximum 30dBA at 10 metres							
Compressor pack	Lp	10	A	Maximum 30dBA at 10 metres							
HT condenser	Lp	10	A	Maximum 33dBA at 10 metres							
LT condenser	Lp	10	A	Maximum 36dBA at 10 metres							
ASHP	Lp	5	A	Maximum 38dBA at 5 metres							
ASHP	Lp	5	A	Maximum 38dBA at 5 metres							
ASHP	Lp	5	A	Maximum 38dBA at 5 metres							
ASHP	Lp	5	A	Maximum 38dBA at 5 metres							
ASHP	Lp	5	A	Maximum 38dBA at 5 metres							
NOTES: 1. Lw/Lp: Lw means sound power level (dB) Lp means sound pressure level at stated distance (dB/m) 2. Operational time (OP.TIME D/N/A): D (Day) - could operate at any time between 0700 & 2300 N (Night) - could operate at any time between 2300 & 0700 A (All) - could operate at any time during the day and night											

APPENDIX B

NOISE MODEL INPUT DATA

SHARPS REDMORE PARTNERSHIP

The White House, London Road, Copdock, Ipswich, IP8 3JH

Tel: 44 (0) 1473 730073 Fax: 44 (0) 1473 730030 Email: srp@sharpsredmore.co.uk

Filename : p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1
Date : 16 January 2025
Entries by : MT
Project number : 2422499
Project title : East Grinstead
Client's name : Aldi

Map/plot details :

Length :3200
Width :3200
Height :250

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Source data - description, coordinates, outlet size, percentage to atmosphere, directivity,
sound levels and running period.

Filename : p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1

Source Description	Coordinates			Outlet details			Run Lp/ dBA Dist.			Mid frequency octave bands									
	X(m)	Y(m)	Z(m)	A(mm)	B(mm)	Ang. %	Q	DNA	Lw	Y/N	(m)	63	125	250	500	1k	2k	4k	8k
Gas cooler	196.0	204.0	1.7	0	0	0	100	2	A	P	Y	10.0	30	0	0	0	0	0	0
Compressor pack	198.0	205.0	2.6	0	0	0	100	2	A	P	Y	10.0	30	0	0	0	0	0	0
HT condenser	205.0	224.0	1.5	0	0	0	100	2	A	P	Y	10.0	33	0	0	0	0	0	0
LT condenser	205.0	222.0	1.5	0	0	0	100	2	A	P	Y	10.0	36	0	0	0	0	0	0
ASHP	234.0	199.0	1.8	0	0	0	100	2	A	P	Y	5.0	38	0	0	0	0	0	0
ASHP	236.0	199.0	1.8	0	0	0	100	2	A	P	Y	5.0	38	0	0	0	0	0	0
ASHP	238.0	199.0	1.8	0	0	0	100	2	A	P	Y	5.0	38	0	0	0	0	0	0
ASHP	240.0	199.0	1.8	0	0	0	100	2	A	P	Y	5.0	38	0	0	0	0	0	0
ASHP	242.0	199.0	1.8	0	0	0	100	2	A	P	Y	5.0	38	0	0	0	0	0	0

SHARPS REDMORE PARTNERSHIP

The White House, London Road, Copdock, Ipswich, IP8 3JH

Tel: 44 (0) 1473 730073 Fax: 44 (0) 1473 730030 Email: srp@sharpsredmore.co.uk

Receptor data - description and coordinates

Filename : p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1

Receptor Description	Coordinates			DNA
	X(m)	Y(m)	Z(m)	
Rear of adjacent flats	194.0	221.0	1.5	A
Rear of adjacent flats	194.0	221.0	4.5	A
Rear of adjacent flats	194.0	221.0	7.5	A
Rear of adjacent flats	194.0	221.0	10.5	A
Rear of adjacent flats	190.0	217.0	1.5	A
Rear of adjacent flats	190.0	217.0	4.5	A
Rear of adjacent flats	190.0	217.0	7.5	A
Rear of adjacent flats	190.0	217.0	10.5	A
Flats overlooking car park	180.0	240.0	1.5	A
Flats overlooking car park	180.0	240.0	4.5	A
Flats overlooking car park	180.0	240.0	7.5	A
Flats overlooking car park	180.0	240.0	10.4	A
Green Hedges Avenue	234.0	158.0	4.5	A
Green Hedges Avenue	195.0	158.0	4.5	A

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The White House, London Road, Copdock, Ipswich, IP8 3JH

Tel: 44 (0) 1473 730073 Fax: 44 (0) 1473 730030 Email: srp@sharpsredmore.co.uk

Barrier data - description and coordinates

Filename : p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1

Barrier type	Start		Coordinates			Finish	
	X(m)	Y(m)	Z(m)	X(m)	Y(m)	Z(m)	
R	200.0	200.0	6.0	200.0	211.0	6.0	
R	200.0	211.0	6.0	206.0	211.0	6.0	
R	206.0	211.0	6.0	206.0	225.0	6.0	
R	206.0	225.0	6.0	260.0	225.0	6.0	
R	260.0	225.0	6.0	260.0	207.0	6.0	
R	260.0	207.0	6.0	263.0	207.0	6.0	
R	263.0	207.0	6.0	263.0	200.0	6.0	
R	263.0	200.0	6.0	200.0	200.0	6.0	
F	200.0	211.0	15.0	200.0	225.0	15.0	

APPENDIX C

PREDICTED NOISE LEVELS – SUMMARY

SHARPS REDMORE PARTNERSHIP

The White House, London Road, Copdock, Ipswich, IP8 3JH

Tel: 44 (0) 1473 730073 Fax: 44 (0) 1473 730030 Email: srp@sharpsredmore.co.uk

Night-time overall receptor listings

Filename: p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1
Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Rear of adjacent flats	50	40	33	27	24	23	23	25	33
Rear of adjacent flats	50	40	33	27	24	23	23	25	33
Flats overlooking car park	49	39	32	26	23	22	22	24	32
Flats overlooking car park	49	39	32	26	23	22	22	24	32
Rear of adjacent flats	49	39	32	26	23	22	22	24	32
Rear of adjacent flats	49	39	32	26	23	22	22	24	32
Rear of adjacent flats	49	39	32	26	23	22	22	24	32
Rear of adjacent flats	49	39	32	26	23	22	22	24	32
Flats overlooking car park	49	39	32	26	23	22	22	24	32
Flats overlooking car park	49	39	32	26	23	22	22	24	32
Rear of adjacent flats	49	38	31	25	22	21	21	23	31
Rear of adjacent flats	48	38	31	25	22	21	21	23	31
Green Hedges Avenue	47	37	30	24	21	20	20	22	30
Green Hedges Avenue	46	36	28	22	19	18	18	20	28

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Night-time source sound pressure levels at receptor: Rear of adjacent flats

Filename: p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1
Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Compressor pack	46	36	29	23	20	19	19	21	29
Gas cooler	45	35	28	22	19	18	18	20	28
LT condenser	38	25	18	12	9	8	8	10	19
HT condenser	34	22	15	9	6	5	5	7	15
ASHP	27	14	4	0	0	0	0	0	4
ASHP	26	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
Total Free field Lp and dBA	49	39	32	26	23	22	22	24	32

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Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Compressor pack	46	36	29	23	20	19	19	21	29
Gas cooler	45	35	28	22	19	18	18	20	28
LT condenser	38	25	18	12	9	8	8	10	19
HT condenser	35	22	15	9	6	5	5	7	16
ASHP	27	14	4	0	0	0	0	0	4
ASHP	26	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
Total Free field Lp and dBA	49	39	32	26	23	22	22	24	32

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Night-time source sound pressure levels at receptor: Rear of adjacent flats

Filename: p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1

Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Compressor pack	45	35	28	22	19	18	18	20	28
Gas cooler	45	35	28	22	19	18	18	20	28
LT condenser	37	24	17	11	8	7	7	9	18
HT condenser	34	21	14	8	5	4	4	6	15
ASHP	25	12	2	0	0	0	0	0	0
ASHP	24	11	1	0	0	0	0	0	0
ASHP	24	11	1	0	0	0	0	0	0
ASHP	24	11	1	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
Total Free field Lp and dBA	49	38	31	25	22	21	21	23	31

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Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Compressor pack	45	35	28	22	19	18	18	20	28
Gas cooler	44	34	27	21	18	17	17	19	27
LT condenser	37	24	16	10	7	6	6	8	17
HT condenser	34	21	13	7	4	3	3	5	14
ASHP	27	14	4	0	0	0	0	0	4
ASHP	26	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
ASHP	25	12	2	0	0	0	0	0	0
Total Free field Lp and dBA	48	38	31	25	22	21	21	23	31

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Night-time source sound pressure levels at receptor: Rear of adjacent flats

Filename: p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1

Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Compressor pack	47	37	30	24	21	20	20	22	30
Gas cooler	47	37	30	24	21	20	20	22	30
LT condenser	36	23	15	9	6	5	5	7	16
HT condenser	33	20	12	6	3	2	2	4	13
ASHP	26	14	4	0	0	0	0	0	0
ASHP	26	14	4	0	0	0	0	0	0
ASHP	26	14	4	0	0	0	0	0	0
ASHP	25	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
Total Free field Lp and dBA	50	40	33	27	24	23	23	25	33

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Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Compressor pack	47	37	30	24	21	20	20	22	30
Gas cooler	47	37	30	24	21	20	20	22	30
LT condenser	36	23	15	9	6	5	5	7	16
HT condenser	32	19	11	5	2	1	1	3	12
ASHP	27	14	4	0	0	0	0	0	4
ASHP	27	14	4	0	0	0	0	0	4
ASHP	27	14	4	0	0	0	0	0	4
ASHP	26	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
Total Free field Lp and dBA	50	40	33	27	24	23	23	25	33

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Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Compressor pack	46	36	29	23	20	19	19	21	29
Gas cooler	46	36	29	23	20	19	19	21	29
LT condenser	36	23	14	8	5	4	4	6	15
HT condenser	32	19	11	5	2	1	1	3	12
ASHP	25	12	2	0	0	0	0	0	0
ASHP	25	12	2	0	0	0	0	0	0
ASHP	25	12	2	0	0	0	0	0	0
ASHP	24	11	1	0	0	0	0	0	0
ASHP	24	11	1	0	0	0	0	0	0
Total Free field Lp and dBA	49	39	32	26	23	22	22	24	32

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	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Compressor pack	46	36	29	23	20	19	19	21	29
Gas cooler	45	35	28	22	19	18	18	20	28
LT condenser	36	23	14	8	5	4	4	6	15
HT condenser	32	19	10	4	1	0	0	2	11
ASHP	26	14	4	0	0	0	0	0	0
ASHP	26	14	4	0	0	0	0	0	0
ASHP	26	14	4	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
ASHP	26	13	3	0	0	0	0	0	0
Total Free field Lp and dBA	49	39	32	26	23	22	22	24	32

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Tel: 44 (0) 1473 730073 Fax: 44 (0) 1473 730030 Email: srp@sharpsredmore.co.uk

Night-time source sound pressure levels at receptor: Flats overlooking car park

Filename: p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1
Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
LT condenser	46	36	29	23	20	19	19	21	29
HT condenser	44	34	27	21	18	17	17	19	27
Compressor pack	38	28	21	15	12	11	11	13	21
Gas cooler	38	28	21	15	12	11	11	13	21
ASHP	22	10	0	0	0	0	0	0	0
ASHP	22	10	0	0	0	0	0	0	0
ASHP	22	10	0	0	0	0	0	0	0
ASHP	22	10	0	0	0	0	0	0	0
ASHP	22	10	0	0	0	0	0	0	0
Total Free field Lp and dBA	49	39	32	26	23	22	22	24	32

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	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
LT condenser	46	36	29	23	20	19	19	21	29
HT condenser	44	34	27	21	18	17	17	19	27
Compressor pack	38	28	21	15	12	11	11	13	21
Gas cooler	38	28	21	15	12	11	11	13	21
ASHP	22	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
Total Free field Lp and dBA	49	39	32	26	23	22	22	24	32

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Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
LT condenser	46	36	29	23	20	19	19	21	29
HT condenser	43	33	26	20	17	16	16	18	26
Compressor pack	38	28	21	15	12	11	11	13	21
Gas cooler	38	28	21	15	12	11	11	13	21
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
Total Free field Lp and dBA	49	39	32	26	23	22	22	24	32

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Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
LT condenser	46	36	29	23	20	19	19	21	29
HT condenser	43	33	26	20	17	16	16	18	26
Compressor pack	38	28	21	15	12	11	11	13	21
Gas cooler	38	28	21	15	12	11	11	13	21
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
ASHP	23	10	0	0	0	0	0	0	0
Total Free field Lp and dBA	49	39	32	26	23	22	22	24	32

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Night-time source sound pressure levels at receptor: Green Hedges Avenue

Filename: p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1
 Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
ASHP	40	30	23	17	14	13	13	15	23
ASHP	40	30	23	17	14	13	13	15	23
ASHP	40	30	23	17	14	13	13	15	23
ASHP	40	30	23	17	14	13	13	15	23
ASHP	40	30	23	17	14	13	13	15	23
Gas cooler	34	24	17	11	8	7	7	9	17
Compressor pack	30	18	9	1	0	0	0	0	7
LT condenser	27	14	5	0	0	0	0	0	4
HT condenser	24	11	2	0	0	0	0	0	0
Total Free field Lp and dBA	47	37	30	24	21	20	20	22	30

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Night-time source sound pressure levels at receptor: Green Hedges Avenue

Filename: p:\24 - Projects\2422499 Aldi, East Grinstead- MOT\Noysplot\310724_1
 Date: 16/01/2025

	Mid frequency Octave bands (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
ASHP	37	27	20	14	11	10	10	12	20
ASHP	37	27	20	14	11	10	10	12	20
ASHP	37	27	20	14	11	10	10	12	20
Gas cooler	37	27	20	14	11	10	10	12	20
Compressor pack	37	27	20	14	11	10	10	12	20
ASHP	36	26	19	13	10	9	9	11	19
ASHP	36	26	19	13	10	9	9	11	19
LT condenser	34	22	13	4	0	0	0	0	12
HT condenser	32	20	10	2	0	0	0	0	9
Total Free field Lp and dBA	46	36	28	22	19	18	18	20	28

APPENDIX D

PLANT AND SITE LAYOUT DRAWINGS

