

Aldi Food Store at 580 Altrincham Road Baguley, Manchester, M23 9SR

Mechanical Services Plant Planning Noise Impact Assessment

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Issued to

Aldi Stores Limited

Prepared by

Rob Kirkaldy BSc (Hons) MIOA
Principal Consultant

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1. INTRODUCTION

Aldi Stores Limited are seeking planning permission to replace mechanical services plant at their existing food store site at 580 Altrincham Road in Baguley, Manchester. The site is located in a sensitive area. Consequently, a noise impact assessment is required to cover the operation of the proposed new mechanical services plant.

Accordingly, Spectrum Acoustic Consultants has been commissioned by Aldi Stores to carry out a noise assessment for the purpose of establishing the potential noise impact associated with the new plant. This report is submitted with the intention of providing the sufficient information required to both inform and satisfy the requirements of the Local Planning Authority.

2. SITE DESCRIPTION AND PROPOSALS

Aldi currently operate a food store at 580 Altrincham Road, Baguley, Manchester, M23 9SR. The store forms part of Brookway Retail Park which has a large, shared car park. The site is bounded to the south by the A560, beyond which is Wythenshawe Town Football Club, a Tesco supermarket and houses on Sandy Lane. To the east of the store is the retail park, beyond which is Dixons Brooklands Academy. To the north of the store are houses at Gateacre Walk. To the west are houses at Arden Lodge Road. An existing site location plan is included in Appendix A.

The existing mechanical services plant is located within two areas on the northern elevation of the store. Proposals involve removing all of the existing refrigeration plant equipment and replacing it with all new equipment which would include a new CO2 cooling system. Proposed scheme layout plans are included in Appendix B.

The store trades between 08:00 and 22:00, Monday to Saturday and between 10:00 and 16:00 on Sundays.

Both the existing and proposed mechanical services plant run 24 hours per day.

3. ASSESSMENT METHODOLOGY

To assess the environmental noise impact of new mechanical services plant, it is generally accepted that the predicted noise levels from the plant need to be compared with the existing background noise levels at the nearest noise sensitive receptor locations to the site. As mechanical services plant is currently present at the store, an assessment of existing mechanical plant noise levels will also be carried out for information purposes.

This assessment adopts the assessment methodology set out in BS 4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound*, by comparing the predicted noise levels from mechanical plant, with the existing background noise levels, as measured at locations representative of the nearby residential receptor locations. Further detail on the BS 4142 assessment procedure is provided in Section 5 of this report.



4. BACKGROUND NOISE MEASUREMENT SURVEY

4.1 MEASUREMENT LOCATION

For the purpose of the noise assessment, the following noise measurement location has been identified as being representative of the most sensitive residential positions to the proposed new plant:

- Position A – Rear of Aldi store, representative of nearest houses at Gateacre Walk.

The measurement location is illustrated on the existing site location plan, included in Appendix A.

4.2 NOISE SURVEY DETAILS AND INSTRUMENTATION

The background noise measurement survey, completed for providing information to use in the noise impact assessment, was carried out on Monday 10 to Tuesday 11 March 2025. The noise survey consisted of unattended measurements carried out at the position during the most sensitive night-time period. All noise measurements were carried out in accordance with the procedures outlined in BS 4142:2014, with noise samples recorded in terms of 5-minute periods, at 2m above ground. During the survey, existing mechanical services plant at the store was switched off between 23.00 and 01.00.

The parameters recorded during the measurement survey included L_{Aeq} , L_{A90} and L_{AFmax} . In accordance with BS 4142 guidance, L_{A90} is used for describing background noise and, as such, will be used for the purpose of the noise impact assessment. L_{Aeq} is used to describe the ambient noise level, with L_{Amax} representing the maximum noise level measured during the sample period.

The following instrumentation was used during the noise measurement survey:

- Bruel & Kjaer Type 2250 Light Sound Level Meter s/n 3006952
- Bruel & Kjaer Type 4952 Microphone s/n 3390455
- Bruel & Kjaer Type 4231 Acoustic Calibrator s/n 2730220

Before and after the survey, the sound level meter was field-calibrated in accordance with the manufacturer's guidelines, and no significant drift was observed. The meter, microphone and field calibrator are laboratory calibrated biennially in accordance with UKAS procedures or to traceable National Standards.

During the noise survey, the weather was mild and dry with low wind speeds. The conditions were adequate for noise measurement purposes.

4.3 NOISE SURVEY RESULTS

During the survey, background noise levels were controlled by road traffic movements on the A560 and other nearby roads. The measured noise profile at Position A is shown in the following chart.

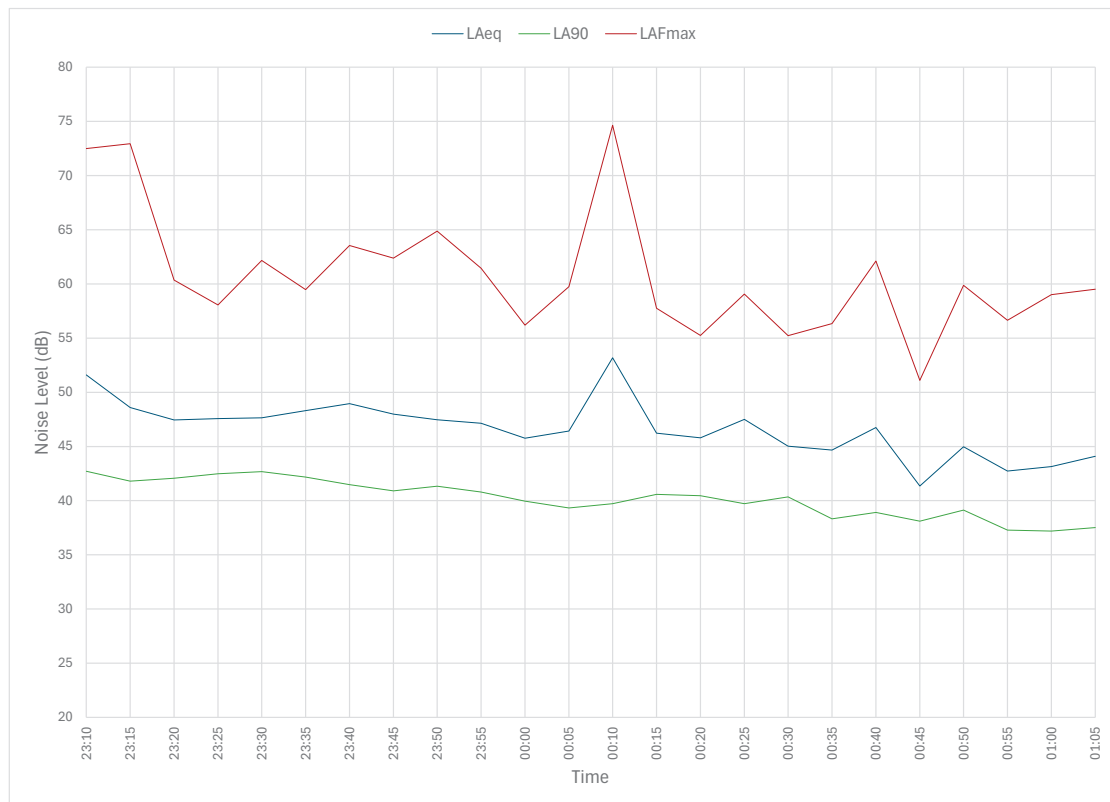


Chart 1: Noise measurement results at Pos A - Rear of Aldi store, representative of nearest houses at Gateacre Walk – Monday 10 to Tuesday 11 March 2025.

When determining the representative background $L_{A90,T}$ levels for the relevant periods, BS 4142¹ guidance states “a representative level ought to account for the range in background levels and ought not automatically to be assumed to be either the minimum or modal value.” With this in mind, statistical analysis has been used to determine the representative background $L_{A90,T}$ noise levels for each of the sensitive periods. The analysis derives the mode, mean, and median values. Once these values have been established, the lowest of these values is considered representative. In this instance, the mean and modal value was used.

Table 1 shows the representative background noise level during the sensitive night-time period at the noise measurement location.

Noise Measurement Location (NML)	Representative Night-time Background Sound Level $L_{A90,T}$ (dB)
Position A – Rear of Aldi store, representative of nearest houses at Gateacre Walk.	40

Table 1: Representative background sound level during the sensitive night-time period

¹ BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound



5. ASSESSMENT CRITERIA

The noise impact assessment relating to the proposed new mechanical services plant at the store will be carried out in accordance with the procedures set out in BS 4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound*. The principle of BS 4142 is to determine an initial estimate of impact of industrial/commercial sound on nearby residents by comparing the Rating Level (sound level from the industrial/commercial source, with a correction applied for any acoustic features that characterise the sound) with the Background Sound Level (L_{A90} as measured in absence of the industrial/commercial source).

Generally, the greater the difference by which the Rating Level exceeds the Background Sound Level, the greater the magnitude of impact. BS 4142 states that *'a difference of around +10 dB or more is likely to be an indication of a significant adverse impact [...]. A difference of around +5 dB is likely to be an indication of an 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.'*

However, BS 4142 also advises that *'when making assessments and arriving at decisions [...] it is essential to place the sound in context'* so in each case, the context in which the sound is placed must be considered and the initial estimate of impact should be modified accordingly.

For example, it advises *'Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.'* It also indicates that impacts estimated during *'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.'*

Additionally, Guidelines for Community Noise - World Health Organization, 1999 (GCN) was published in 1999 with the aim of informing legislation and guidance produced at the national and regional levels for the purposes of minimising any potential adverse health effects resulting from noise in the community. It presents guideline noise level criteria for the avoidance of adverse effects such as sleep disturbance and annoyance in a range of specific environments. The preface to WHO states that community noise includes road, rail and air traffic, industries, construction and public work, and the neighbourhood.

The GCN document advises that for outdoor living areas during the daytime period (07:00-23:00), table 4.1 of WHO references a guideline façade level of $L_{Aeq(16\text{-hour})}$ 50dB(A). For outside bedrooms (with windows open) during the night-time period (23:00-07:00), table 4.1 of WHO references a guideline façade level of $L_{Aeq(8\text{-hour})}$ 45dB(A).

New guidance from WHO titled Environmental Noise Guidelines for the European Region (ENG) was published in 2018. The document takes a very different approach to guidance set out in the previous GCN document by identifying separate thresholds for specific sources rather than for community noise as a whole. Consequently, much of the earlier guidance set out in GCN is now absent from ENG. While ENG was intended to supersede GCN, it recognises this absence and states that *'indoor guideline values and any values not covered by the current guidelines (such as industrial noise and shopping areas) should remain valid.'*

For the assessment of the potential noise impact, consideration will therefore be given to the BS 4142:2014+A1:2019 assessment level, together with the precautionary guideline noise limits defined by the WHO Guidelines.



6. POTENTIAL NOISE IMPACT

6.1 EXISTING MECHANICAL SERVICES PLANT

For the purpose of this assessment, the specific L_{Aeq} noise levels produced by the existing mechanical services plant, directly outside each of the nearby residential receptor locations, will be established by prediction.

Whilst on site, it was possible to measure sound pressure levels close to each of the plant items in isolation. The following instrumentation was used during the plant noise measurement survey:

- Bruel & Kjaer Type 2250 Sound Level Meter s/n 2726905
- Bruel & Kjaer Type 4189 Microphone s/n 2710995
- Bruel & Kjaer Type 4231 Acoustic Calibrator s/n 2730220

Before and after the survey, the sound level meter was field-calibrated in accordance with the manufacturer's guidelines, and no significant drift was observed. The field calibrator is laboratory calibrated annually and the meter and microphone are laboratory calibrated at 2 yearly intervals, all in accordance with UKAS procedures by a UKAS-accredited laboratory.

Prediction methodologies use the sound power level (L_w) of a source as input data, so for this purpose, the measured mechanical plant noise levels, expressed in terms of $L_{Aeq,T}$, need to be converted to the equivalent sound power levels. This is derived using the measured plant $L_{Aeq,T}$ (where T is the measurement period), corrected for the measurement surface area enveloping the noise source. A summary of the calculated sound power levels associated with the existing plant items is shown in Table 2 below.

Plant Item	Measured Sound Pressure Level at 1m (dB)	L_p to L_w Correction (dB)	Sound Power Level L_w (dB)
LT R 407 Freezer Coldroom	63	12	75
Pack 304 - refrigeration	65	12	77
Pack 304 - 4 fan unit	65	15	80
Pack 305 chillers - 3 fan unit	63	16	79
303 chiller condenser	67	10	77
Pack 306 chillers Performax LT - 3 fan unit	63	13	76

Table 2: Summary of the plant equipment noise levels (each at full duty)

To accurately evaluate the overall effect of the existing plant, it is necessary to consider the noise that is generated by the equipment, at the nearby residential receptor locations.

Predictions of how the noise from each of the mechanical plant sources propagates to sensitive community receptors, together with the cumulative effect of all these noise sources, has been determined by noise modelling using proprietary software (iNoise²) which meets the requirement of ISO 9613 Part 2:1996³.

² DGMR Raadgevende Ingenieurs B.V – iNoise V2024.1

³ ISO 9613-2:1996 "Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation to determine Noise Levels



The noise model takes account of the following in its calculations procedures:

- Source sound power level (for point, line and area sources)
- Reflection from nearby structures and source directivity
- Distance from noise source (geometric spreading)
- Atmospheric absorption
- Acoustic screening of intervening structures and topography
- Ground absorption
- Ground effects (which includes the height of ground relative to the noise source)

Detailed noise calculations, providing information on total specific noise at each receptor, together with the contributions from each individual noise source, at each receptor location, are computed. To illustrate the model, a diagram showing the distribution and locations of mechanical plant noise sources, superimposed on a 3D view of the site, is included in Appendix C. A noise map, showing the noise contours produced by the existing mechanical services plant is also provided in Appendix C of this report.

Predicted specific noise levels from the existing mechanical plant at the nearest noise sensitive receptors are provided in Table 3 below.

Receptor	L_{Aeq} dB(A)	L_{Aeq} Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
R1. No.33 Arden Lodge Road	36	20	26	34	30	25	20	11	-
R2. No.49 Arden Lodge Road	40	21	28	37	37	29	23	15	2
R3. No.66 Gateacre Walk	41	25	30	36	36	33	27	20	7
R4. No.68 Gateacre Walk	40	25	29	35	35	33	27	20	7
R5. No.101 Gateacre Walk	39	25	29	34	34	32	26	20	8

Table 3: Predicted specific noise contribution from the existing mechanical services plant at the nearest noise sensitive receptors.

As indicated in Table 3, the predicted noise levels at the nearest noise sensitive receptor from the combined existing mechanical services plant are L_{Aeq} 36-41dB(A).



6.2 PROPOSED NEW MECHANICAL SERVICES PLANT SCHEME

The mechanical plant layout proposals are outlined on the plans included in Appendix B. The noise output (in terms of sound power levels) generated by the mechanical plant to be included in the proposed scheme, is shown in Table 4. The noise data is based upon information provided in specifications issued by the mechanical services contractor and equipment suppliers.

Plant Item	No. of	Sound Pressure Level (dB) at 10m	Calculated Sound Power Level L_{wA} ⁴
Compressor Housing - 75kW-PFE-ULN Reach In	1	32	60
Gas Cooler	1	54	82
AC Unit - Vaillant VWL 125/6 A S2	4	32	60
Panasonic LT BUF unit – OCU-CR400VF8A	1	36	58
Panasonic MT BUC unit – OCU-CR400VF8	1	33	55

Table 4: Sound Power Level of the proposed new external mechanical plant

As with the prediction of noise from the existing mechanical plant, the prediction of noise associated with the proposed mechanical plant is carried out using DGMR's 'iNoise' software.

The noise map, showing the noise contours produced by the proposed new mechanical services plant is included in Appendix D of this report. Predicted specific noise levels at the nearest noise sensitive receptors are provided in Table 5 below.

Receptor	L_{Aeq} dB(A)	L_{Aeq} Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
R1. No.33 Arden Lodge Road	28	10	16	20	23	23	17	8	-
R2. No.49 Arden Lodge Road	31	12	18	24	26	26	20	11	-
R3. No.66 Gateacre Walk	30	9	15	20	26	26	21	13	1
R4. No.68 Gateacre Walk	27	6	11	17	22	22	17	9	-
R5. No.101 Gateacre Walk	24	2	7	14	19	20	14	6	-

Table 5: Predicted specific noise contribution from the proposed new mechanical services plant at the nearby residential receptor locations

As indicated in Table 5, predicted noise levels at the nearest noise sensitive receptors from the proposed new mechanical services plant are L_{Aeq} 24-31dB(A).

⁴ Sound power levels (L_{wA}) are calculated from sound pressure level (L_p) measurements made at a specified distance from equipment.



7. ASSESSMENT OF NOISE IMPACT

The proposed new replacement mechanical plant items would operate continuously. Consequently, for the purposes of this assessment, the predicted plant rating levels will be compared with the background sound levels measured during the sensitive night-time period, at the nearest noise sensitive receptors.

Table 6 shows a BS 4142 assessment covering the noise impact associated with the existing mechanical plant. None of the plant items emit any distinct impulses or tones. However, the plant does emit other characteristics that are distinctive against the existing residual acoustic environment. Therefore, a feature correction has been included in the rating level.

Residential Position	Specific Level (dB)	Character Correction (dB)	Rating Level (dB)	Background L_{A90} (dB)	Assessment Level (dB) (Background excess)
R1. No.33 Arden Lodge Road	36	+3	39	40	-1
R2. No.49 Arden Lodge Road	40	+3	43	40	+3
R3. No.66 Gateacre Walk	41	+3	44	40	+4
R4. No.68 Gateacre Walk	40	+3	43	40	+3
R5. No.101 Gateacre Walk	39	+3	42	40	+2

Table 6: Predicted rating level from existing mechanical plant at the nearest residential properties, compared with the representative night-time (23.00-01.00) background $L_{A90, 15min}$ levels

Table 6 indicates that the assessment level from the existing plant is between a low and an adverse noise impact at the nearby residential properties.

Table 7 shows a BS 4142 assessment covering the noise impact associated with proposed new replacement mechanical plant scheme. Again, none of the plant items do not emit any distinct impulses or tones. However, the plant could emit other characteristics which may be distinctive against the existing residual acoustic environment.

Residential Position	Specific Level (dB)	Character Correction (dB)	Rating Level (dB)	Background L_{A90} (dB)	Assessment Level (dB) (Background excess)
R1. No.33 Arden Lodge Road	28	+3	31	40	-9
R2. No.49 Arden Lodge Road	31	+3	34	40	-6
R3. No.66 Gateacre Walk	30	+3	33	40	-7
R4. No.68 Gateacre Walk	27	+3	30	40	-10
R5. No.101 Gateacre Walk	24	+3	27	40	-13

Table 7: Predicted rating level from proposed new mechanical plant scheme at the nearby residential properties, compared with the representative night-time (23.00-01.00) background $L_{A90, 15min}$ levels

With the proposed new mechanical services plant in place, the rating levels would be comfortably lower than the representative background noise level at the nearest residential properties.



The difference between the rating level and background level indicates that uncertainty would likely have no influence on the outcome of the assessment. However, in an attempt to minimise the uncertainty, continuous noise measurements have been carried out throughout the most sensitive periods at the site and the predictions of noise have been carried out in accordance with ISO 9613 Part 2:1996⁵.

Contextually, the scheme proposals would result in a significant improvement to the amenity of all of the nearby residents, as overall plant noise levels would be reduced by up to 15dB. Therefore, the overall noise impact would be low.

8. CONCLUSIONS

A noise assessment has been completed to consider the potential impact of noise produced by installing new replacement mechanical services plant at an existing Aldi food store at 580 Altrincham Road in Baguley, Manchester.

A background noise measurement survey has been conducted at a location representative of the most sensitive residential positions to the site and predictions of noise from the cumulative existing and proposed mechanical plant equipment has been completed, utilising a proprietary software package.

Noise limits for mechanical services plant at the Aldi store have been established, based on measured background noise levels, as well as taking account of BS 4142 and WHO. The assessment has indicated that the development proposals have a low noise impact and would result in a significant improvement to the amenity of all of the nearby residents.

⁵ ISO 9613-2:1996 "Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation to determine Noise Levels

APPENDIX A

Existing site location plan showing the noise monitoring location

N



Brookway Retail Park



Fern Bank Dr

Arden Lodge Rd

Family Childcare



Position A



ALDI



Pets at Home Baguley

A560

A560

A560

Claverham Walk

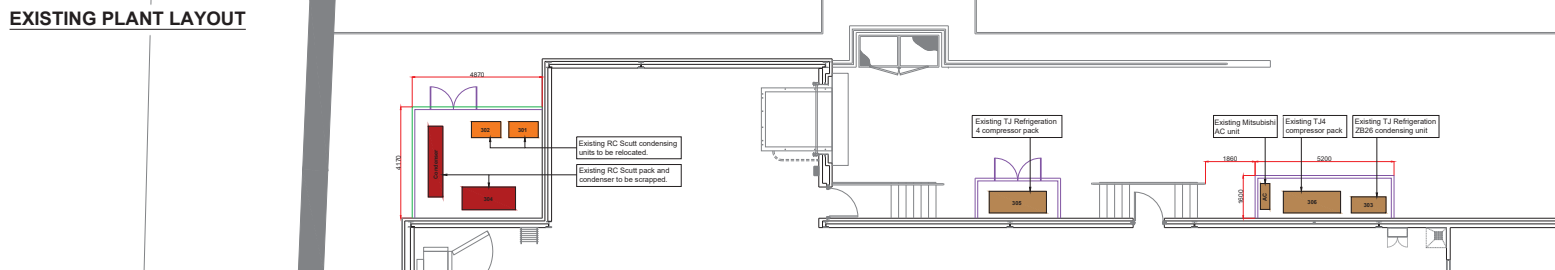
Churchstoke Walk



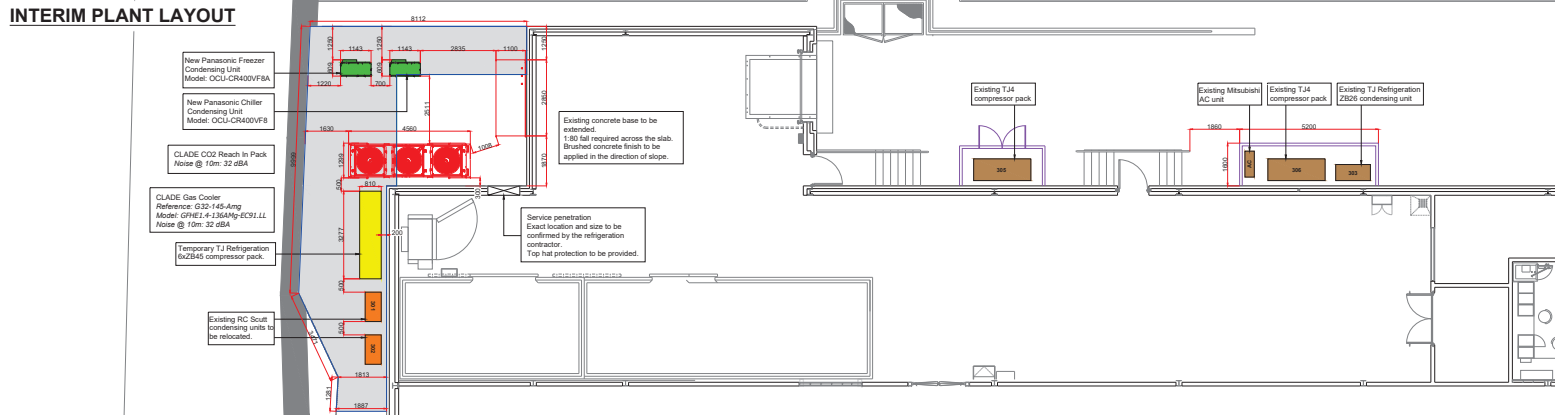
A P P E N D I X B

Proposed New M&E Scheme

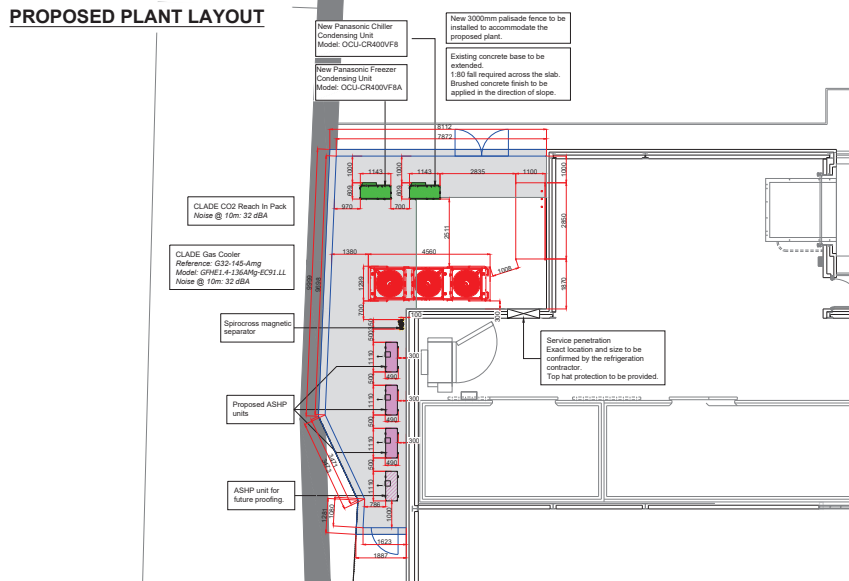
EXISTING PLANT LAYOUT



INTERIM PLANT LAYOUT



PROPOSED PLANT LAYOUT



Doris 75kW-PFE-ULN Reach in Housing (32)		Octave Band Frequency (Hz)										
dB(A)		63.000	125.000	250.000	500.000	1000.000	2000.000	4000.000	8000.000			
dB(A)		39	39	40	41	39	35	33	47			
ISO 75-3M	61	39	39	40	41	39	35	33	47			
ISO 75-3M	61	39	39	40	41	39	35	33	47			
ISO 75-3m	61	40	40	41	42	40	36	34	48			
ISO 2000H	67	41	41	42	43	41	37	35	53			
L&A7 Alpa Vent Fan Inlet	50	39	42	46	42	43	45	44	34			
L&A7 Alpa Vent Fan Outlet	50	39	42	46	42	43	45	44	34			
Calculated Internal Sound Pressure	71	49	50	58	55	60	64	62	56			
Correction for Internal Reflection Frequency	5	5	5	5	5	5	5	5	5			
Final Internal Sound Pressure	76	54	55	63	60	65	69	67	61			
Attenuated Sound Pressure @	32	32	40	48	43	39	34	37	31		dB(A) LPA @1m	
Attenuated Sound Pressure @10m	32	36	47	59	53	49	43	46	39		dB(A) LPA @10m	

Note:

1. Refrigeration Contractor to advise on service penetrations prior to core drill.
2. Exposed Refrigeration services to receive top hat protection.
3. Existing concrete slab to be extended.
3. Plant Compound access doors and position to be agreed with refrigeration contractor and builder.
4. New plant compound to accommodate the plant.
5. Fire escape routes are to be maintained throughout the store refit and must not be obstructed at any time.

Freezer CU Data:

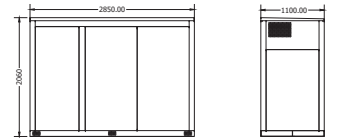
Cooler		OCU-RESEARCH OC-3574	
Rated Output		3 kW	
Rated Capacity (ASHRAE)		16.1 kW (55.0 °F / 13.0 °C)	
Refrigerant		R744	
Ambient Temperature		45 °C / 113 °F	
Evaporator Temperature		-45 °C / -5 °F	
Compressor	Oil	6.11	
	Charge Volume	0.24 m ³ (8.65 cu ft)	
Compressor	Compression System	1:1	
	Discharge Compression Ratio × Expansion	20:1	
Condenser	Type	Air-cooled	
	Area	2.0 m ² (21.5 sq ft)	
Fan Motor (Rated Output)	Type	Asynchronous control in table	
	Power	142 W	
Fan Motor (Rated Output)	Current (400 V, 50 Hz)	0.70 A	
	Power Factor	0.80	
Fan Motor (Rated Output)	Max Fan Flow	4,600 m ³ /h	
	Max Fan Flow	3.54 m ³ /min (126 cfm (actual))	
Max Motor Flow Control		Ratio: speed control at 0 ~ 100 % 100 % DC motor	
Capacity Control	System	Inverter Control 50% (100 Hz) ~ 100 % (120 Hz)	
	CO ₂ Cut Off	12.0 ppm	
High-Pressure Switch (Rated Output)	CO ₂ Cut Off	0.30 MPa	
	Pressure	0.30 MPa	
Compressor Over Current	Inverter	At 100 Hz at 1 min (PMSM-60 Hz PCB)	
	Compressor	118.1 °C (FF 75 °C) (ON/OFF PCB)	
Compressor Discharge Gas Temperature		Average	
Power Supply (Rated Output / Max Power)		3-Phase 380V/400V 3P3W 50/60 Hz	
Compressor	Gas Cooler	AC/DCV 200A2 AC/DCV 100A1 AC/DCV 20A1 AC/DCV 20A1	
	Intermediate Cooler	Asynchronous control in table	
Compressor	Minimum gas inlet temperature with the oil	7.0 °C	
	Oil Separator	0.3 μm	
Connection Pipe	Section Line	1.21 (0.53 of the gas evaporator) /	
	Line Length	112 mm (4.4 in)	
Copper Dimension	Outer Line	9.8 mm (Outer diameter) /	
	Inner Line	6.3 mm (Inner diameter) /	
Copper Dimension (with passage)	Outer Line	141 mm ± 1.42 mm ± 588 mm	
	Inner Line	104 mm ± 1.25 mm ± 720 mm	
Net Weight (kg)		130	
Power Weight (kg)		122	
Energy Class		Inverter (rated) (EER) 2.13	
Flow (Rated Output) (with or without fan)		Asynchronous control with or without fan (0.007)	
Flow (Rated Output) (with or without fan)		Asynchronous control with or without fan (0.012)	
Ambient Temperature	Indoor	22 °C	
	Outdoor	35 °C	
Cooling Temperature	Indoor	17 °C	
	Outdoor	35 °C	
Compressor Refrigerant Rated	Indoor	60 °C (140 °F)	
	Outdoor	50 °C (122 °F)	
Power consumption	Indoor	1.77 (1.11) kW (7.44)	
	Outdoor	4.51 (4.51) kW (19.3)	
Power consumption	Indoor	0.71 (0.71) kW (3.0)	
	Outdoor	2.02 (2.02) kW (8.5)	
Starting current	Indoor	1.47 (1.47) A	
	Outdoor	4.02 (4.02) A	
Start Pressure Level	Indoor	94.1 (94.1) bar	
	Outdoor	36.1 (36.1) bar	

Chiller CU Data:

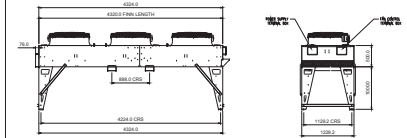
Type (M1 medium term, L1: low level 3)		MT (ZAW)	
Standard model		OCU-OR-NOVOU	
Assembled casting model		OCU-OR-NOVOU-ES	
Power supply	Voltage	V	Three Phase 400V/415
	Phase		Three Phase
	Frequency	Hz	50
Cooling capacity at L1: 35°C at 32°C	kW	6,0	
Cooling capacity at L1: 35°C at 32°C	kW	6,16	
Evaporator connection			
High pressure	MPa → Max	°C	-20 ~ 5
Ambient temperature			
High pressure	MPa → Max	°C	+5 ~ +43
Refrigerant			R244
Design pressure liquid line	MPa		8
Design pressure suction line	MPa		8
Use system external alarm, Digital input, low-voltage control			Yes
Signal line (three-phase voltage)	Vac	380V/400V/415	Yes
Shut down communication OC/NO signal, Digital input, low-voltage control			Yes
Modbus communication RS-485	Ports	2	Yes
Compressor type		2-stage rotary	
Compressor	HP or kW	90/113/120/129	
Net height	kg		
Weight	kg	112,12,9	
Length of connection piping	inch (mm)	3/8 (10,16)	
Weight of connection piping	kg	10	
Evaporator connection			
Evaporating temperature	°C	-10 ~ 10	
Cooling capacity	kW	6,90	6,90
Power consumption	kW	7,60	7,60
Normal load ampere	A	18C	18C
Sound pressure level	dBS(A)		33
PED			
Air volume	m³/min		
Design static pressure	Pa		
Heat recovery port	Yes		
Filter liquid line, diameter 5,5mm	Yes		
Filter gas line, diameter 5,5mm	Yes		
Other accessories			
Flameout protection alarm for vaporizer and sensor	SPC-TU125		
Suction filter, filter for degasser (back welding)	S-008T		

Sacrificial Coating (Blygold) recommended - Yes

CLADE Reach-in Pack Housing (75kW)
Noise Level @10m: 32dBA



CLADE Gas Cooler- G32-145-Amg
GFHE1.4-136AMg-EC91.LL
Noise Level @ 10m: 32dB(A)



Weight (dry approx.): 735kg

Gas cooler data:

Reference:	G32-145-AMg
Model:	GFHE1.4-136AMg-EC91 L
GAS COOLER	
Coil Code:	1 x CO-48-6-2-31-4320
Performance Sub-Critical	
Capacity	118.8 kW
Ambient	10 °C, 50 %RH
Condensing Temp.	20 °C
TD	10 K
Performance Supercritical	
Capacity	144.3 kW
Ambient	40 °C
Gas Pressure	100 Bar
Gas Inlet	100 °C
Gas Outlet	42 °C
Volume flow Inlet	15 m³/hr
Volume flow Outlet	5 m³/hr
Mass Flow	2808 kg/hr
Pressure drop	140 kPa
DUMP COIL	
Coil Code:	N/A
Capacity	
Ambient	
Evaporating Temp	
TD	
AIR PERFORMANCE:	
Volume flow humid	7.3m³/s, (26410m³/hr)
Height over sea level	0 m
Pressure	1013.25 hPa
Number of Fans	3
External Resistance	0 Pa
Supply	400v 3ph 50/60Hz
Fan Type	EC - 910 mm diameter
Speed Setting / Maximum	395 / 640 rpm
Total Power Input	484.5 W
Energy Rating	A
Full Load Current / Motor	1.1 A
Sound Power Level	63.8 dBA
Mean Speed Pressure @ 10m	32 dBA
PHYSICAL:	
Tube material	Copper - Plain
No Rows	6
Fin Material	Alum Mag
Fin Spacing	2.31 mm / 11 fpi
Surface	682.6 m²
Internal Volume	53.1 dm³
No Section / Coils	1 coil in 1 section
No Circuits	24
Connection Size	1 x 35 / 35
Unit Dimensions	1250 mm
Height + Fan	1175 mm
Length over headers	4620 mm
Weight (dry approx):	735 kg

Plant Key:

-  Existing - to remain in situ
-  Existing - to be relocated
-  Existing - to be removed for refurb
-  Existing - to be removed for scrap
-  New Panasonic Condensing Units
-  Temporary units
-  New CLADE Refrigeration Pack & Gas Cooler

Builders Work Key:

-  Existing - to remain in situ
-  Existing - to be removed
-  Temporary
-  New
-  New concrete base

A	19/11/2024	plant layout updated as per the latest site boundary	FN	GD
Rev	Date	Details	Revised	Checked

Project:
ALDI- BAGULEY
ALTRINCHAM ROAD, BAGULEY, M23 9SR

Store ID: #54-BOL

Client:



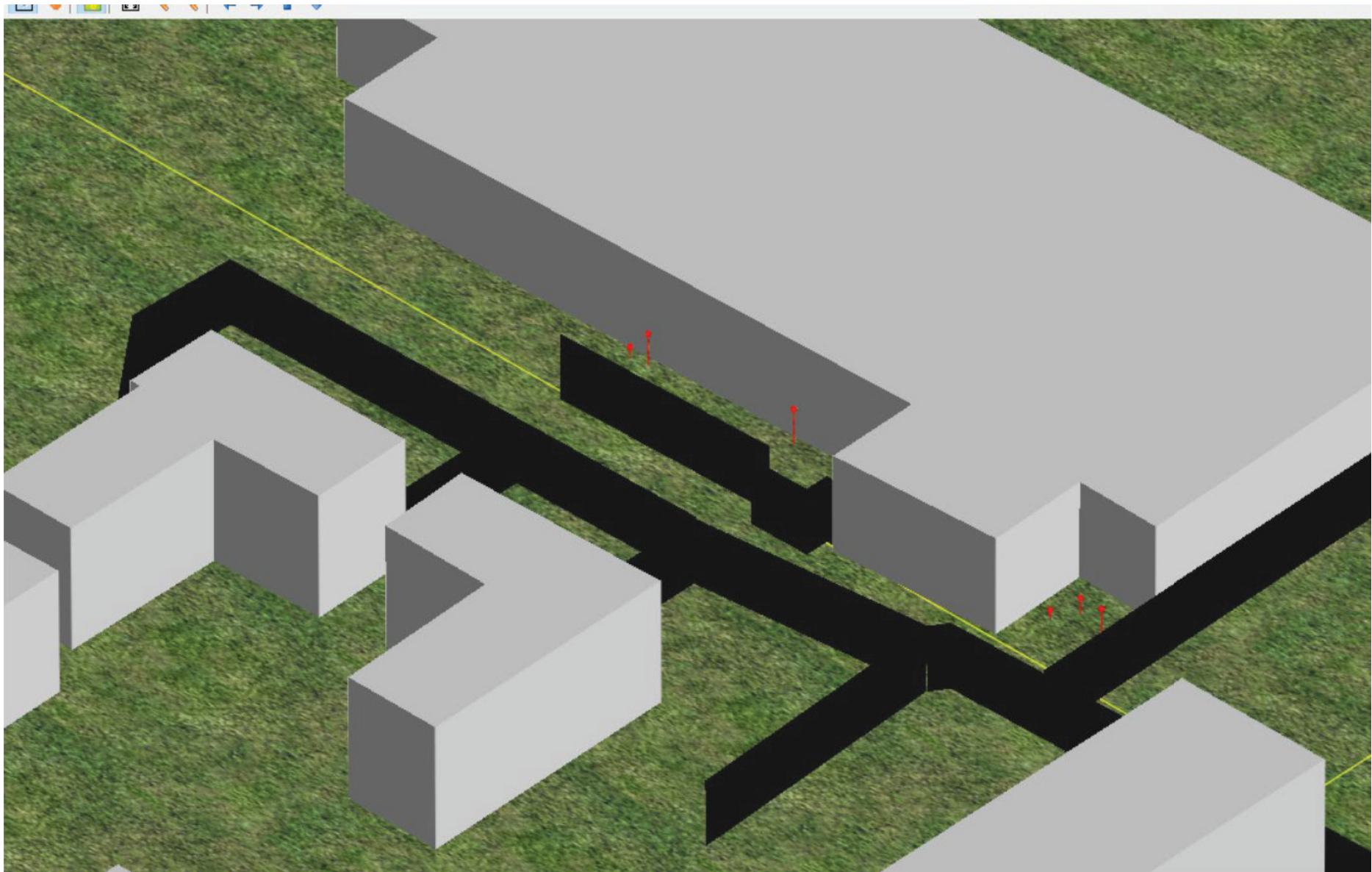
Unit 16G, Calderdale Business Park
Club Lane, Ovenden
Halifax
HX2 8DB
Tel: 07702 548083
E-Mail: garye@wave-refrigeration.com

PROPOSED PLANT LAYOUT

Issue Status: 2025 PROJECT FRESH	
Client Drawing Revision:	
Wave Consultant: GARY ERNEST	
Drawn By: SP	First Drawn: 09/10/2024
Scale: 1:100 ON ISO A1	Checked: GD
	Approved: GE
Drawing No: 24-BOL-54-06	Revision: A

APPENDIX C

Results of the noise prediction model relating to the existing mechanical plant

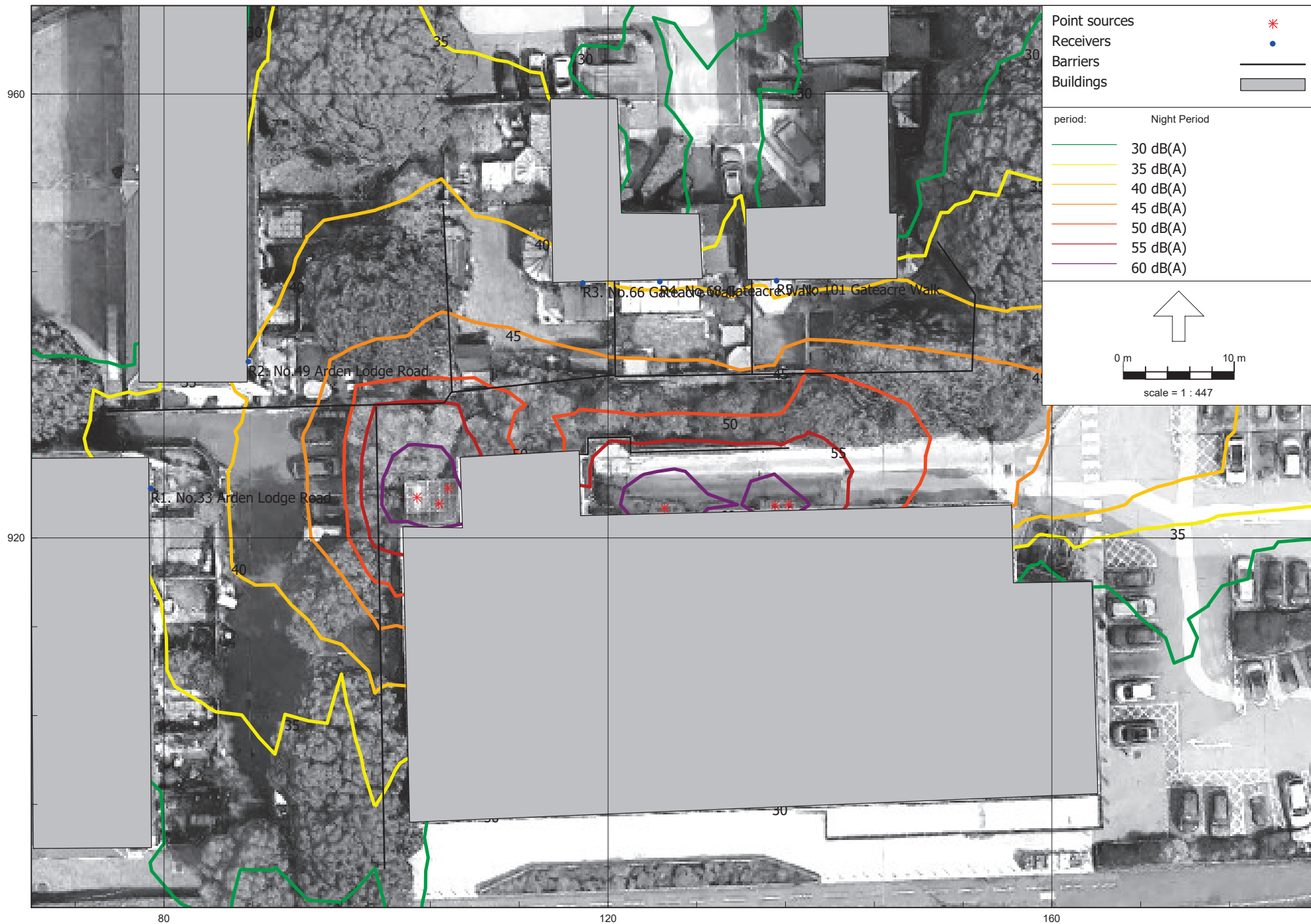


Aldi Baguley
Predicted Noise Levels - Existing Plant

Report: Table of Results
Model: Existing Plant - Rev 0
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: Yes

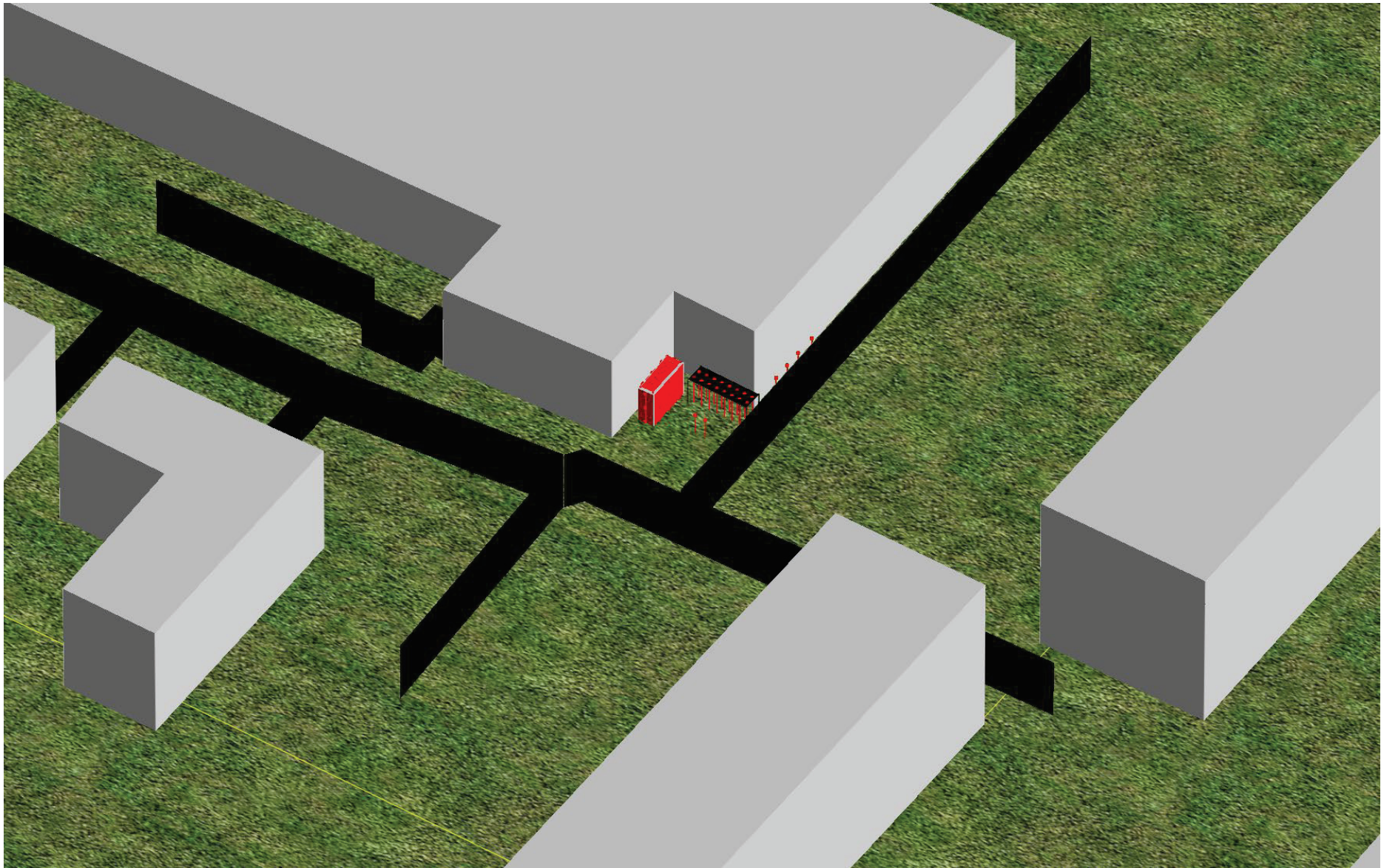
Name		Height	Night									
Receiver	Description		Total	31	63	125	250	500	1000	2000	4000	8000
_A	R1. No.33 Arden Lodge Road	4.50	36	--	20	26	34	30	25	20	11	-1
_A	R2. No.49 Arden Lodge Road	4.50	40	--	21	28	37	34	29	23	15	2
_A	R3. No.66 Gateacre Walk	4.50	41	--	25	30	36	36	33	27	20	7
_A	R4. No.68 Gateacre Walk	4.50	40	--	25	29	35	35	33	27	20	7
_A	R5. No.101 Gateacre Walk	4.50	39	--	25	29	34	34	32	26	20	8

All shown dB values are A-weighted



A P P E N D I X D

Results of the noise prediction model relating to the proposed new mechanical plant



Aldi Baguley
Predicted Noise Levels - Proposed New Plant

Report: Table of Results
Model: Proposed New Plant - Rev 0
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: Yes

Name		Height	Night									
Receiver	Description		Total	31	63	125	250	500	1000	2000	4000	8000
_A	R1. No.33 Arden Lodge Road	4.50	28	-89	10	16	20	23	23	17	8	-2
_A	R2. No.49 Arden Lodge Road	4.50	31	-87	12	18	24	26	26	20	11	-1
_A	R3. No.66 Gateacre Walk	4.50	30	-90	9	15	20	26	26	21	13	1
_A	R4. No.68 Gateacre Walk	4.50	27	-93	6	11	17	22	22	17	9	-3
_A	R5. No.101 Gateacre Walk	4.50	24	-95	2	7	14	19	20	14	6	-9

All shown dB values are A-weighted



Head Office

Spectrum Acoustic Consultants Ltd
27-29 High Street
Biggleswade
Bedfordshire
SG18 0JE
UNITED KINGDOM

 +44 (0)1767 318871

 enquiries@spectrumacoustic.com

 www.spectrumacoustic.com