

ADDENDUM REPORT

on behalf of

LIDL GB LTD

for the site at

**FALLOWFIELD RETAIL PARK,
MANCHESTER M14 6FS**

REPORT DATE: 18TH MAY 2022

REPORT NUMBER: 102452-2

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Summary

A Noise Assessment was undertaken with respect to the impact of noise from a proposed Lidl Store on the Fallowfield Retail Park site (report ref 102452_V3), submitted in support of a planning application for the site (application number 130189/FO/2021).

The proposed Lidl store includes a sublet unit within the building (Unit 4). At the time of Noise Assessment 102452_V3, fixed plant proposals associated with Unit 4 were not available.

This report assesses noise from fixed plant associated with Unit 4 and is an addendum to Miller Goodall report ref 102452_V3. The plant was incorporated into the existing noise model of the site, which demonstrated that plant associated with Unit 4 does not alter the noise predictions or the outcome of the assessment.

Based on the available information within Noise Assessment 102452_V3, and this addendum report, the impact of fixed plant noise emissions from the proposed Lidl store and Unit 4 cumulatively is low when assessed to BS 4142:2014+A1:2019.

Record of changes

Prepared By Reid Malster AMIOA

Reviewed By

Michael Rickard MIOA

Signed



Signed



Date

18th May 2022

Date

18th May 2022

Version	Date	Change	Initials
1	18th May 2022	Initial Issue	RM

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1 Introduction

- 1.1 Miller Goodall provided a noise assessment (report ref 102452_V3) in support of a planning application (application number 130189/FO/2021) to erect a new Lidl store on the Fallowfield Retail Park site.
- 1.2 Within the proposed Lidl building a smaller Unit is located (Unit 4), which is proposed to be sublet to another operator. At the time of this report we understand that the Pizza Hut unit that currently operates on the Fallowfield Retail Park site will occupy the unit.
- 1.3 Noise assessment 102452_V3 referred to Unit 4, explaining that noise emissions associated with the unit would be assessed at a later date when information about the unit became available. This addendum report assesses noise emissions from fixed plant associated with Unit 4.

2 Unit 4 Proposals

- 2.1 Appendix 1 shows the proposed floorplan and elevations for Unit 4. The plans show four external noise sources on the rear façade of the building:
 - 2 no. wall mounted Condensing units. We understand that these are different models from J&E Hall – a JEHR-0113-B1-M-1 unit and a JEHR-0210-B2-L-3 unit.
 - The kitchen extraction system intake located on the façade.
 - The kitchen extraction system extract flue, which terminates at roof level.
- 2.2 Manufacturer's noise levels for the four noise sources above are provided in Appendix 2.
- 2.3 The operational times of the noise sources above are unknown. It is likely that the kitchen extract intake and extract flue will only be in operation while the kitchen is in use, while the condensers will likely operate throughout the night (for the purposes of keeping food and ingredients refrigerated and frozen). Due to uncertainty surrounding operational times, for the purposes of this assessment, we have assumed that all four noise sources will be in constant operation, and consider this to be worst-case.

3 Noise Modelling

- 3.1 The proposed noise sources were incorporated into the existing model of the site associated with noise assessment 102452_V3.
- 3.2 The general horizontal plan information of the area surrounding and including the proposed development site was imported from Google Maps. This was used to determine road positions, building footprint areas and relative locations and is considered accurate to within 5%. Building height information was based on site observations and Digital Surface Model (DSM) survey data obtained through Google Earth. Topography was modelled with Digital Terrain Model (DTM) Lidar Survey data obtained from DEFRA to ensure that the screening effects of the railway line were modelled as accurately as possible.
- 3.3 The following parameters were assigned to the model:

- Propagation model: ISO 9613¹
- Default ground absorption: 0.1 (acoustically reflecting)
- Two orders of reflection
- Buildings are reflecting (smooth, non-structured facade)

3.4 L_w sound power level spectra for the condensers were derived within the model based on the manufacturer's noise data (reported as sound pressure level octave bands from 125 Hz – 8 kHz measured at 1m). For the kitchen ventilation, the supplied noise data is stated as 'extraction' and 'supply', with no indication as to whether they are sound power levels or sound pressure levels measured at a described distance. Based on previous experience with similar operators and supplied data, we have assumed the stated noise levels are sound pressure levels at 3 m (this is also a reasonable worst-case assumption). Equal A-weighted octave band spectra were assumed for the kitchen ventilation as no octave band data is available. The equivalent sound power spectra of the noise sources associated with Unit 4 are given in Table 1 below:

Table 1: Noise source data used within CadnaA

Description	Sound Power Level, L_w dB in Octave Band Centre Frequency, Hz								L_w dB(A)
	63	125	250	500	1k	2k	4k	8k	
JEHR-0113-81-M-1 Condenser	N/A	63.2	58.7	53.4	48.2	45	35.9	35.4	55.7
JEHR-0210-B2-L-3 Condenser	N/A	62.4	70.2	64.3	58.1	54.9	47.3	44.6	65.9
Kitchen supply/intake	75.7	65.6	58.1	52.7	49.5	48.3	48.5	50.6	58.5
Kitchen extract flue	79.7	69.6	62.1	56.7	53.5	52.3	52.5	54.6	62.5

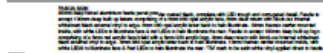
- 3.5 The location and heights of the noise sources were scaled from the elevation plans shown in Appendix 1.
- 3.6 Appendix 3A shows the previous noise modelling results for plant associated with the Lidl store, from Noise Assessment 102452_V3.
- 3.7 The results of the noise modelling including Unit 4 are shown in Appendix 3B and 3C. Two scenarios have been reported: the predicted noise levels associated with Unit 4 plant in isolation, and the cumulative predicted noise levels of plant from both the proposed Lidl store and Unit 4.
- 3.8 It can be seen in Appendix 3B that the highest predicted noise level at a residential receptor is 15 dB $L_{Aeq,T}$, demonstrating that, based on the available information and data, noise emissions from Unit 4 will be low.
- 3.9 Comparison of Appendix 3A (Lidl plant) and 3C (Lidl and Unit 4 plant, cumulative predictions) demonstrates that plant noise emissions from Unit 4 cause an increase in overall level at some receptors, however, at the worst-case residential window the predicted noise level is still only 27 dB L_{Aeq} .

¹ ISO 9613-2: 1996 Acoustics - Attenuation of sound during propagation outdoors – Part 2: General method of calculation

- 3.10 Plant associated with Unit 4 therefore does not alter the outcome of the assessment reported in Noise Assessment 102452_V3, and the assessment outcome is still Low Impact when the noise emissions are assessed to BS 4142:2014+A1:2019.

4 Conclusions

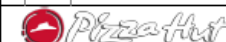
- 4.1 A Noise Assessment was undertaken with respect to the impact of noise from a proposed Lidl Store on the Fallowfield Retail Park site (report ref 102452_V3), submitted in support of a planning application for the site (application number 130189/FO/2021).
- 4.2 The proposed Lidl store includes a sublet unit within the building (Unit 4). At the time of Noise Assessment 102452_V3, fixed plant proposals associated with Unit 4 were not available.
- 4.3 This report assesses noise from fixed plant associated with Unit 4 and is an addendum to Miller Goodall report ref 102452_V3. The plant was incorporated into the existing noise model of the site, which demonstrated that plant associated with Unit 4 does not alter the noise predictions or the outcome of the assessment.
- 4.4 Based on the available information within Noise Assessment 102452_V3, and this addendum report, the impact of fixed plant noise emissions from the proposed Lidl store and Unit 4 cumulatively is low when assessed to BS 4142:2014+A1:2019.



NOTES:

1. To be read in conjunction with all other consultants drawings.
2. Contractors to check site conditions prior to commencement of work.
3. Any discrepancies to be reported directly to the RW Architectural Design Ltd.
4. Do not scale off drawing; Use figured dimensions only.
5. All dimensions to be checked on site.
6. All drawings are the copyright of RW Architectural Design Ltd.

REV	DATE	DESCRIPTION

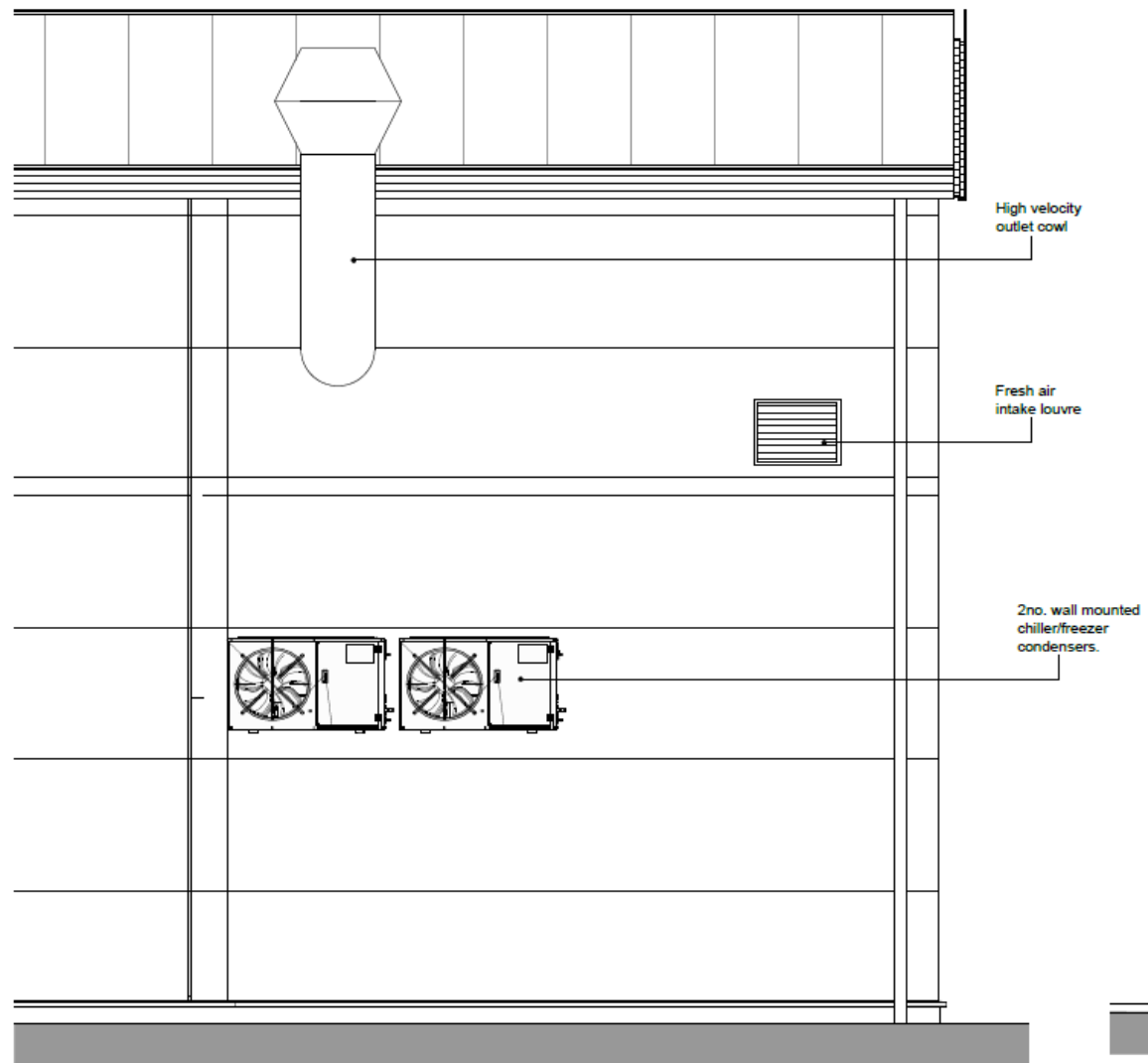


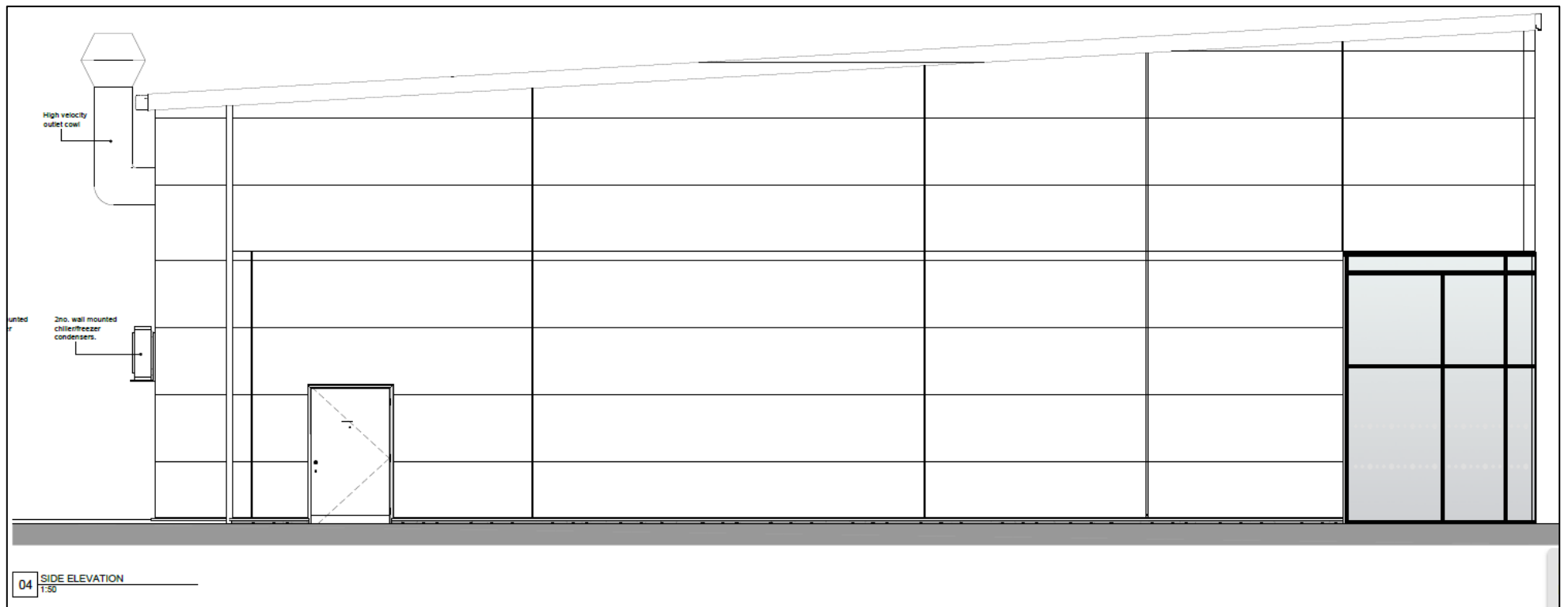
ADDRESS:
FALLOWFIELD RETAIL PARK
BIRCHFIELD ROAD

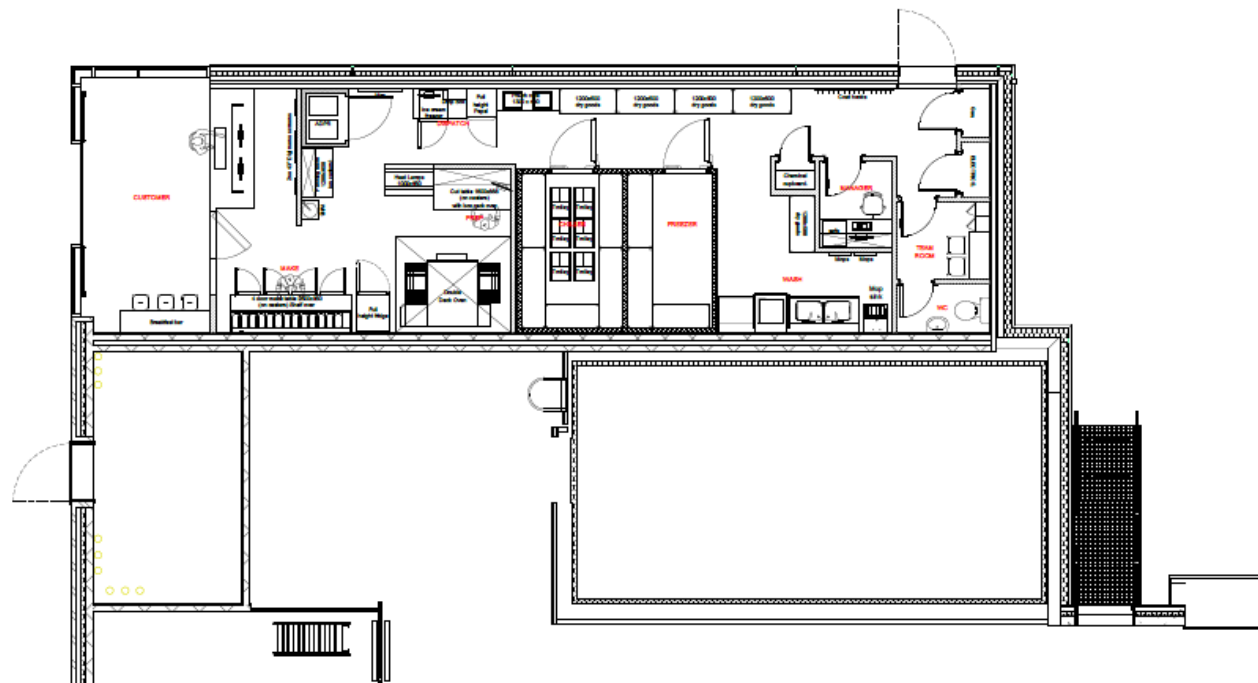
SCALE:	DATE:
As shown @ A1	March 2022

JOB NO: FFY22	DAS NO: 30	R 1
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FOR PLANNING

REV	DATE	DESCRIPTION



PROJECT:
FALLOW FIELD RETAIL PARK

ADDRESS:
FALLOWFIELD RETAIL PARK
BIRCHFIELD ROAD

DRAWING TITLE:
PROPOSED GA

SCALE: 1:50 @ A1	DATE: March 2022
JOB NO: FFY22	ORG NO: 20
DRAWN BY: AW	CHECKED BY: NJ

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Appendix 2: Manufacturer's Noise Data For Unit 4 Noise Sources



CONDENSING UNIT SPECIFICATION SHEET

Condensing Unit Details

Model	JEHR-0113-B1-M-1
Application	Medium Temperature

Electrical Supply

230V / 1Ph / 50Hz

Weights & Dimensions

Width	876 mm
Depth	420 mm
Height	607 mm
Mounting Dims.	545 mm (W) x 400 mm (D)
Weight (Dry)	58 kgs

Compressor Data

Type	CAJ9S13Z
Swept Volume	4.21 m ³ /h
Oil Charge	0.48 litres
Nom. Current (A)	4.9
MCC (A)	11.3
LRC (A)	33.5

Fan Motors

No.	1
FLC (A)	0.2

Condenser Coil

Type	Microchannel
Volume	0.44 litres

Liquid Receiver

Volume 2.4 litres

Airflow

Volume 1250 m³/h

Applicable Refrigerants

R404A/R407A/R407F/R448A/R449A/R452A

Unit Connections

Liquid	3/8"
Suction	1/2"

Sound Pressure Level @ 10m (-10°C/+32°C)

28 dB(A)

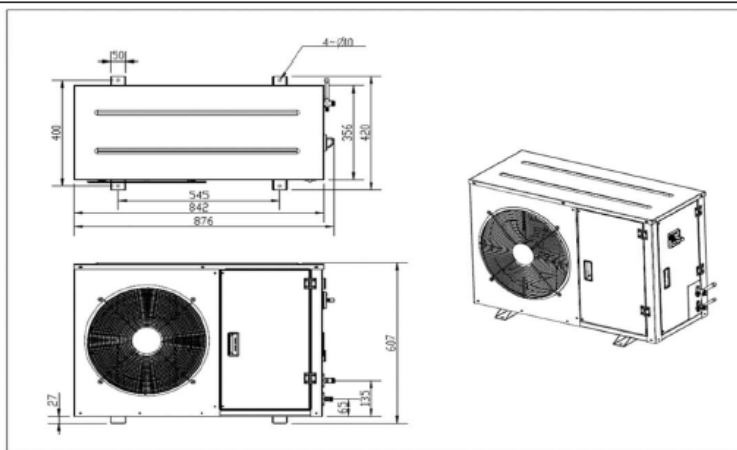
Performance Data at -10°C/+32°C Conditions

	Capacity (W) 10K SH	Capacity (W) 20°C RGT
R404A	1761	1934
R407A	1487	1662
R407F	1550	1739
R448A	1523	1639
R449A	1523	1639
R452A	1612	1788

1/1 Octave Sound Pressure Levels @ 1 meter from the unit

Frequency

125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	A (dBA)
55.2	50.7	45.4	40.2	37.0	27.9	27.4	47.7



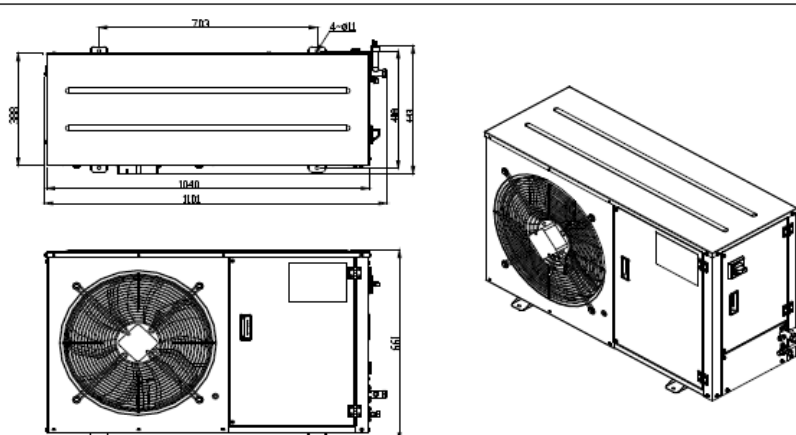


CONDENSING UNIT SPECIFICATION SHEET

Condensing Unit Details		Condenser Coil	
Model	JEHR-0210-B2-L-3	Type	Microchannel
Application	Low Temperature	Volume	0.51 litre
Electrical Supply		Liquid Receiver	
	400V / 3Ph / 50Hz	Volume	4.5 litres
Weights & Dimensions		Airflow	
Width	1101 mm	Volume	2700 m ³ /h
Depth	444 mm		
Height	662 mm		
Mounting Dims.	703 mm (W) x 408 mm (D)	Applicable Refrigerants	
Weight (Dry)	81 kgs	R448A/R449A/R452A	
Compressor Data		Unit Connections	
Type	FH2511-XG1A	Liquid	3/8"
Swept Volume	11.83 m ³ /h	Suction	5/8"
Oil Charge	1.14 litre		
Nom. Current (A)	3.4		
MCC (A)	8.3		
LRC (A)	60.0		
Oil Separator		Sound Pressure Level @ 10m (-25°C/+32°C)	
Oil Charge	0.50 litre		38 dB(A)
Fan Motors		Performance Data at -35°C/+32°C Conditions	
No.	1	Capacity (W) 10K SH	Capacity (W) 20°C RG
FLC (A)	0.6	R448A 1170	1356
		R449A 1170	1356
		R452A 1228	1532

1/1 Octave Sound Pressure Levels @ 1 meter from the unit

Frequency							
125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	A (dBA)
54.4	62.2	56.3	50.1	46.9	39.3	36.6	57.5





Kitchen Ventilation SPECIFICATION INFORMATION

Requirements for the installation of a complete kitchen ventilation system. Document includes canopy, ventilation and other associated specifics

Springfield Group

thespringfieldgroup.net - info@thespringfieldgroup.net

Property Details

PIZZA HUT

FALLOWFIELD RETAIL PARK

BIRCHFIELD ROAD

MANCHESTER

Site Requirements

Brief description of site requirement

High level discharge with high velocity cowl and bird mesh guard.

This proposed system to be mounted or hung on anti-vibration mountings to reduce any reverberation type vibration from the extraction system, travelling through the building.

Access doors installed in ducting system for cleaning and maintenance.

We can confirm that the design and specification for the extraction system at the above address is in accordance with DW172 specification.

Summary of detailed information attached in this specification

Extraction:

Volume M3/second	Resistance	Discharge Velocity	Filtration	Noise level
1.55 M3/sec	115 pa	12.40	-	45 dba

Supply:

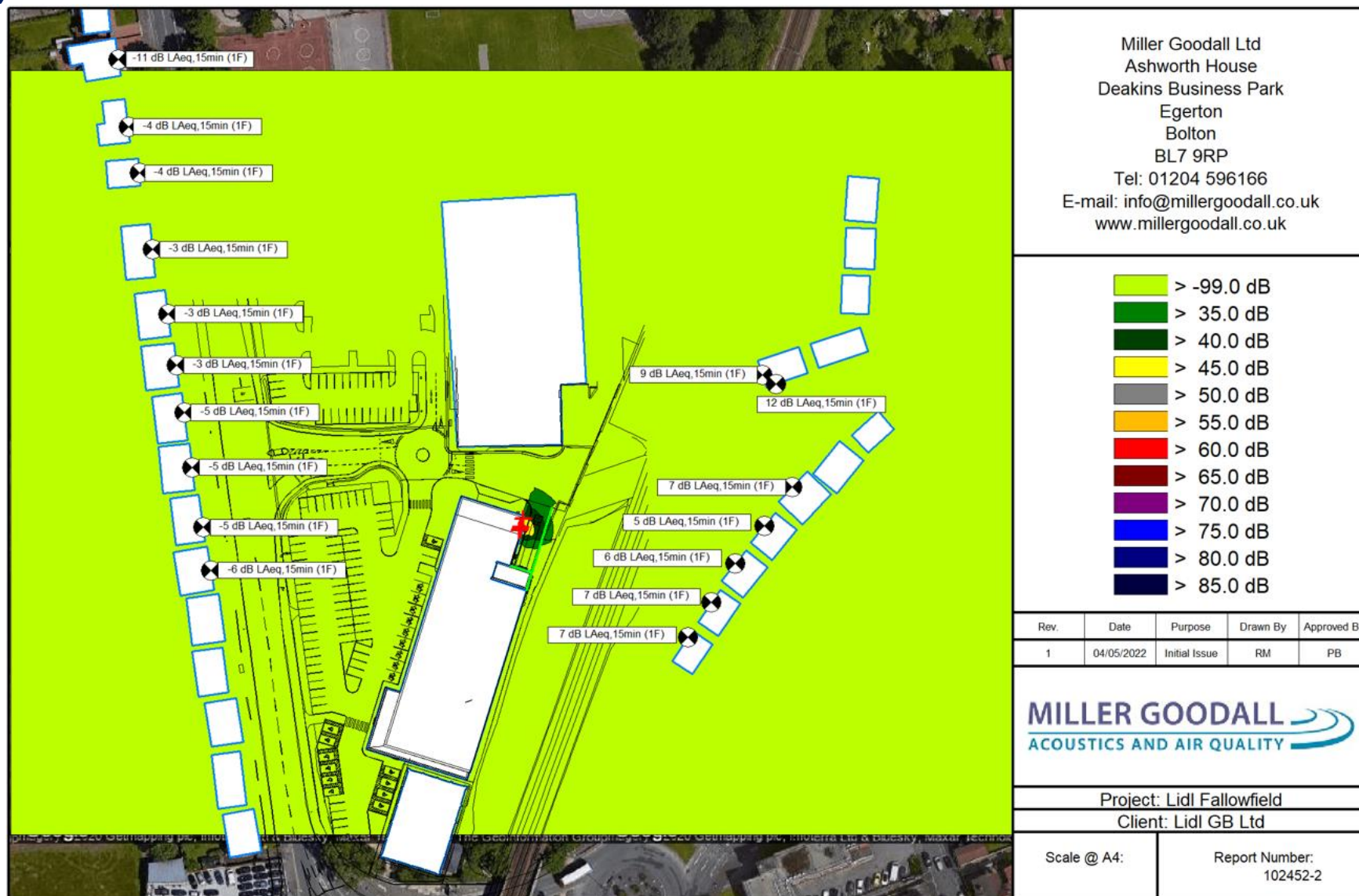
Volume m3/second	Resistance	Replacement Percentage	Air Filter	Noise level
1.32 M3/sec	120 pa	80%	EU4	41dba

Gas needs a minimum of 0.50 M/Sec Face velocity in order to meet the emissions requirements

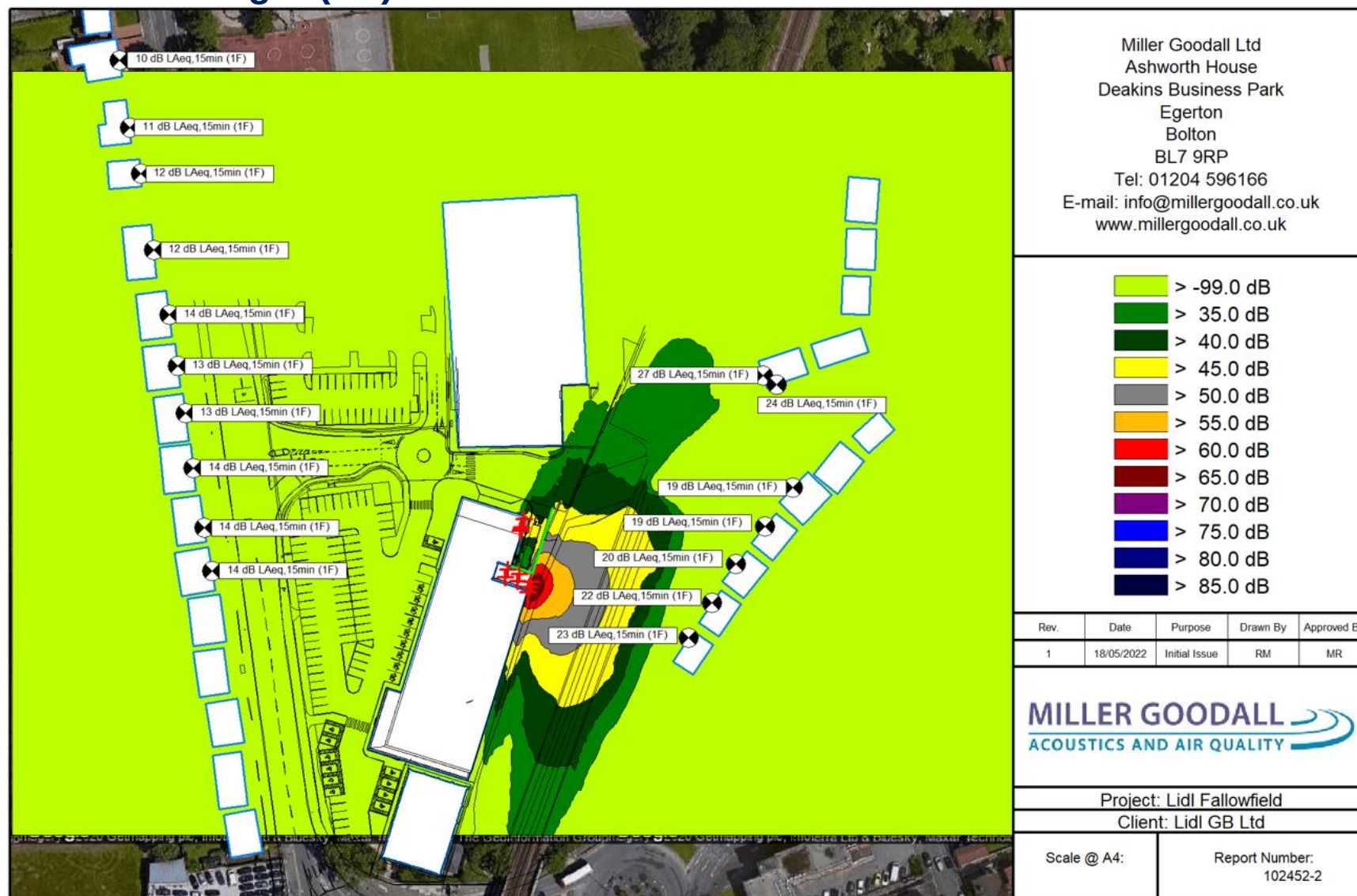
Appendix 3A: Previously Predicted Plant Noise Modelling Results (Lidl store only) – 4.0m Grid Height (dB)



Appendix 3B: Predicted Plant Noise Modelling Results (Unit 4 Only) – 4.0m Grid Height (dB)



Appendix 3C: Cumulative Predicted Plant Noise Modelling Results (Lidl Store and Unit 4) – 4.0m Grid Height (dB)



Glossary of Terms

Decibel (dB) The unit used to quantify sound pressure levels; it is derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is 20 μPa , the threshold of normal hearing is in the region of 0 dB, and 140 dB is the threshold of pain. A change of 1 dB is usually only perceptible under controlled conditions.

dB L_A Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB L_A broadly agree with an individual's assessment of loudness. A change of 3 dB L_A is the minimum perceptible under normal conditions, and a change of 10 dB L_A corresponds roughly to halving or doubling the loudness of a sound. The background noise level in a living room may be about 30 dB L_A ; normal conversation about 60 dB L_A at 1 meter; heavy road traffic about 80 dB L_A at 10 meters; the level near a pneumatic drill about 100 dB L_A .

$L_{A90,T}$ The A weighted noise level exceeded for 90% of the specified measurement period (T). In BS 4142: 1997 it is used to define background noise level.

$L_{Aeq,T}$ The equivalent continuous sound level. The sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period (T). $L_{Aeq,T}$ is used to describe many types of noise and can be measured directly with an integrating sound level meter.

