

Straight Mile, Llay Wrexham, LL12 0NE

Planning Noise Impact Assessment for a Proposed Aldi Food Store

Report ref.

RK3010/19049/Rev 3

Issued to

Aldi Stores Limited

Prepared by

Rob Kirkaldy BSc (Hons) MIOA
Senior Consultant

Version	Remarks	Date
Rev 0	Initial report issue.	12.04.2019
Rev 1	Revised to include updated scheme plans.	11.07.2019
Rev 2	Revised to include updated scheme plans.	07.10.2020
Rev 3	Revised to include updated scheme plans.	10.11.2020



SECTION	TITLE	PAGE
1.	INTRODUCTION	1
2.	SITE DESCRIPTION AND PROPOSALS.....	1
3.	ASSESSMENT METHODOLOGY	1
4.	BACKGROUND NOISE MEASUREMENT SURVEY	2
4.1	COMMUNITY RECEPTOR LOCATIONS	2
4.2	NOISE SURVEY DETAILS AND INSTRUMENTATION.....	2
4.3	NOISE SURVEY RESULTS.....	2
5.	ASSESSMENT CRITERIA	4
6.	POTENTIAL NOISE IMPACTS.....	5
6.1	PREDICTION OF MECHANICAL PLANT NOISE	6
6.2	PREDICTION OF DELIVERY NOISE	7
7.	ASSESSMENT OF NOISE IMPACTS	9
7.1	ASSESSMENT OF MECHANICAL PLANT NOISE	9
7.2	ASSESSMENT OF DELIVERY NOISE.....	10
8.	CONCLUSIONS	11
APPENDIX A:	Existing site location plans	
APPENDIX B:	Proposed scheme layout drawings	
APPENDIX C:	Email correspondence with Environmental Health Officer	
APPENDIX D:	Results of the noise prediction model relating to mechanical plant	
APPENDIX E:	Results of the noise prediction model relating to deliveries	



1. INTRODUCTION

Aldi Stores Limited is seeking planning permission for a new 1,941m² (GEA) food store at land off Straight Mile in Llay, Wrexham. The proposed development site is located in a sensitive area. Consequently, a noise impact assessment is required to cover the operation of the proposed store.

Accordingly, Spectrum Acoustic Consultants have been commissioned by Jones Lang LaSalle, on behalf of Aldi Stores to carry out a noise assessment for the purpose of establishing the potential noise impacts associated with the development. 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

The proposed development is to be located at land off Straight Mile in Llay, Wrexham, LL12 0NE. Straight Mile bounds the development to the north, beyond which are agricultural fields. To the east of the site are agricultural fields where outline planning permission has been granted for 365 dwellings and the erection of a 300 square meter retail unit. To the south are existing houses at Old Meadow Court. Gresford Road bounds the site to the west and has a number of residential properties located along it. Existing site location plans are included in Appendix A.

The 1,858m² (GIA) store would have provision for 116 car parking spaces. The main access to the store would be provided off Gresford Road. A secondary entry point would also be located off Straight Mile. The mechanical plant equipment and delivery bay would be located on the southern aspect of the store and would be accessed via a separate service yard. The service yard would be surrounded by barrier fences 4m, 3.5m and 3m high respectively. Proposed scheme layout plans are included in Appendix B.

The proposed Aldi food store would trade between 08:00 and 22:00, Monday to Saturday and a six hour period between 10:00 and 18:00 on Sundays. Deliveries would be carried out during the daytime between 06:00 and 23:00.

3. ASSESSMENT METHODOLOGY

To assess the environmental noise impact of a new commercial development, it is generally accepted that the predicted noise levels from the use need to be compared with the existing background noise levels at the nearest noise sensitive receptor locations to the site. The potential noise impacts associated with the proposed Aldi store include continuous noise from mechanical services plant and intermittent noise from deliveries.

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

Spectrum has previously carried out a detailed noise measurement survey at an existing Aldi food store to measure and evaluate noise produced through the delivery process. This involved vehicle movements on site and unloading activity. The results from the survey have been used to inform the BS 4142:2014 assessment, relating to the potential noise impact from deliveries to the proposed store.



4. BACKGROUND NOISE MEASUREMENT SURVEY

4.1 COMMUNITY RECEPTOR LOCATIONS

For the purpose of the noise assessment, the following noise measurement locations have been identified as being representative of the most sensitive residential properties to the proposed store:

- Position 1 – Home Farm, Old Meadow Court.
- Position 2 – Eastern boundary of site, representative of the consented residential development.

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

4.2 NOISE SURVEY DETAILS AND INSTRUMENTATION

A background noise measurement survey, completed for providing information to use in the noise impact assessment, was carried out from Tuesday 26 to Wednesday 27 February 2019.

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 Sound Level Meter s/n 3000713
- Bruel & Kjaer Type 4189 Microphone s/n 2780512
- Bruel & Kjaer Type 4231 Acoustic Calibrator s/n 3001598
- Bruel & Kjaer Type 2238 Sound Level Meter s/n 2654440
- Bruel & Kjaer Type 4188 Microphone s/n 2658551

Before and after the survey, the sound level meters were field-calibrated in accordance with the manufacturer's guidelines, and no significant drift was observed. The meters, microphones 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 suitable for noise measurement purposes.

4.3 NOISE SURVEY RESULTS

During the daytime, ambient noise levels in the environment around the development site are controlled by road traffic movements on Straight Mile, Gresford Road and other nearby roads. During the night time road traffic movements reduce.

The measured noise profiles at each of the noise monitoring locations are shown in the following charts.

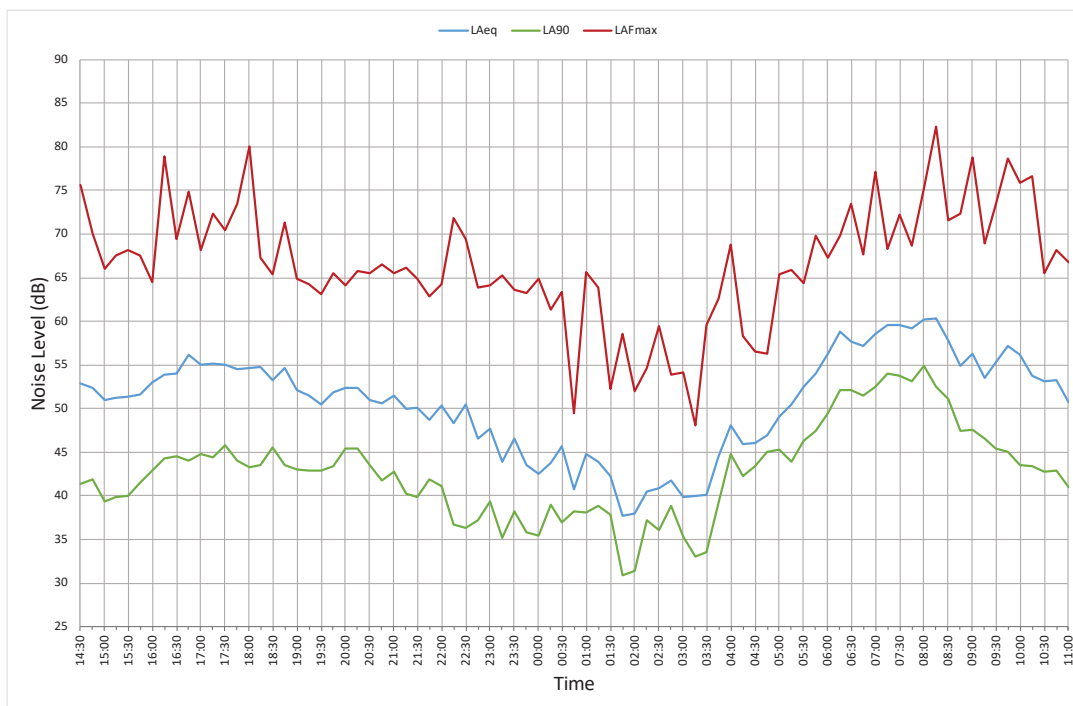


Chart 1: Position 1 (Home Farm, Old Meadow Court) ambient noise profile – Tuesday 26 to Wednesday 27 February 2019.

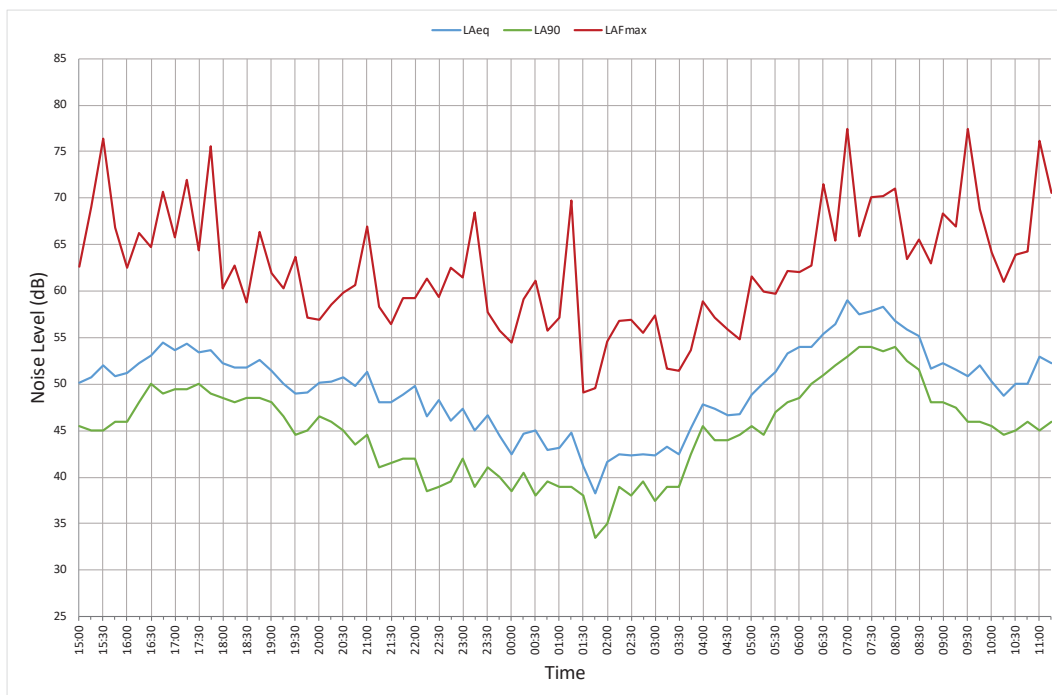


Chart 2: Position 2 (Eastern boundary of site, representative of the consented residential development) ambient noise profile – Tuesday 26 to Wednesday 27 February 2019.



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 derived the Mode, Mean and Mean -1 standard deviation values. Once these three values have been established, a judgement is made as to which value is considered representative. In this instance the modal values $L_{A90,T}$ values were used for each of the periods at both measurement positions, as they were considered to be the most representative.

Table 1 shows the representative background noise levels during the sensitive periods at each of the noise measurement locations from Tuesday 26 to Wednesday 27 February 2019.

Measurement Location	Representative Background L_{A90} Noise Levels (dB)			
	21:00-22:00 (1 hour)	22:00-23:00 (1 hour)	23:00-06:00 (15 min)	06:00-07:00 (15 min)
1 – Home Farm, Old Meadow Court.	41	37	39	52
2 – Eastern boundary, representative of the consented residential development.	42	40	39	50

Table 1: Summary of the measured background noise levels during sensitive periods

During the most sensitive 22:00 to 23:00 evening period when deliveries are proposed at the Aldi store, background noise levels are $L_{A90,1 \text{ hour}}$ 37-40dB. During the sensitive night-time period when much of the mechanical plant items at the Aldi store would still be running, the representative background noise levels are $L_{A90,15 \text{ min}}$ 39dB.

5. ASSESSMENT CRITERIA

The noise impact assessment relating to both mechanical plant and deliveries at the proposed store will be carried out in accordance with the procedures set out in BS 4142:2014 *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.’

¹ BS 4142:2014 *Methods for rating and assessing industrial and commercial sound*



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.'*

Following a consultation with the Environmental Health Officer of the Environmental Health Department at Wrexham County Borough Council, it was advised that rating levels should not exceed 5dB above the representative background LA90 level, in accordance with BS 4142:2014. A copy of the email correspondence is included in Appendix C.

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 day time 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.'*

It is recommended that all WHO guidance should be noted, but it is recommended that it should also not be relied upon in assessments without reference to other relevant detailed guidance, especially that in British Standards. These may align better with Planning Practice Guidance² in England.

6. POTENTIAL NOISE IMPACTS

For the planned operation of the proposed development, the following noise impacts have been identified for the assessment:

- Noise produced from mechanical services plant
- Noise produced from deliveries

In order to accurately assess the level of potential noise impact, a quantitative prediction for each of the above is provided.

² PPG - Noise, MHCLG, 6 March 2014



6.1 PREDICTION OF MECHANICAL PLANT NOISE

The mechanical plant layout proposals are outlined on the plans included in Appendix B. A large CO₂ unit comprising of compressor housing and a separate fan condenser table would be located at the southern end of the store within the service yard. The CO₂ plant would run continuously throughout the daytime and night time periods.

Ventilation fans have been designed to discharge to atmosphere at a series of points to the rear of the store. Two small condenser units may also be located externally to the rear. However, these items would only operate during the daytime, so they have been omitted from the noise prediction model. An air handling unit is proposed to be located inside a dedicated plant room within the store. However, noise levels from this unit are low and would be insignificant outside of the plant room, once the effects of the building attenuation have been accounted for. Therefore, the air handling unit has been omitted from the noise prediction model.

The noise outputs (in terms of sound power levels) generated by each item of mechanical plant to be included in the proposed scheme, are shown in Table 2. The noise data is based upon information provided in specifications issued by the mechanical services contractor and equipment suppliers.

Plant Item	Sound Power Level L_{WA} ³ (dB)	Equivalent Sound Pressure Level at 10m (dB)
CO ₂ Plant Compressor Housing	61	33
Fan Gas Cooler Table	66	33

Table 2: Sound Power Levels of the proposed new external mechanical plant

Predictions of how the noise from each of the mechanical plant sources propagates to sensitive community receptors, together with the cumulative effect of these noise sources, has been determined by noise modelling using proprietary software (Predictor⁴) which meets the requirement of ISO 9613 Part 2:1996⁵. 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 scheme, a diagram showing the distribution and locations of mechanical plant noise sources, superimposed on a 3D view of the site, is included in Appendix D. A noise map, showing the noise contours produced by the mechanical services plant is also provided in Appendix D of this report.

³ Sound power levels (L_{WA}) are calculated from sound pressure level (L_{pA}) measurements made at a specified distance from equipment.

⁴ Bruel and Kjaer – Predictor V7 Environmental Noise Calculation Software Package, Type 7810

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



Predicted specific noise levels at each of the nearby receptor locations 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. Home Farm, Old Meadow Court.	17	-	10	10	10	11	6	-	-
R2. The Rookery, Old Meadow Court.	15	-	9	8	8	9	6	-	-
R3. Nearest consented residential property.	9	-	1	3	3	3	-	-	-
R4. No.16 Gresford Road	16	-	9	9	10	11	6	-	-

Table 3: Predicted specific noise contribution from the mechanical services plant at the nearby residential receptor locations.

As indicated in Table 3, predicted noise levels at the community locations, from the combined mechanical services plant, would be in the range of L_{Aeq} 9-17dB(A).

6.2 PREDICTION OF DELIVERY NOISE

For the purpose of this assessment, the specific L_{Aeq} noise levels produced by a delivery to the proposed Aldi food store, at the noted residential receptor locations, will be established by prediction.

The delivery process is broadly similar at all Aldi stores. Consequently, as the basis of the prediction, the typical noise levels produced during this activity have been referenced from detailed noise measurements covering deliveries made to the Aldi store in Sandbach, Cheshire.

For these measurements, continuous 2-second noise measurements were carried out at a height of 1.5m above ground, approximately 10m from the acoustic centre of the noise source (in this case the delivery operation). The same instrumentation was used, as for the background noise survey detailed in Section 4.2.

Deliveries to Aldi stores typically last between fifty minutes, and an hour and twenty minutes. However, this period can be variable depending on the amount of stock being accepted by the store, with some delivery cycles taking just thirty to forty minutes. The procedure for a delivery is for the delivery vehicle to reverse and lock into a dock sleeve within the loading bay, so that stock is directly unloaded into the store warehouse with no external unloading.

Observations made during the measurement survey indicated that noise from the delivery vehicle (a HGV) is evident when the vehicle arrives, manoeuvres into position (with reverse alarm on) on the loading bay and then departs. However, the engine of the vehicle is then turned off once it has docked onto the loading bay, so for the greater part of the delivery, HGV engine noise is not evident.

With respect to noise from unloading of the vehicle, noise produced in the delivery bay area primarily consists of noise breaking out of the side of the trailer from pallets of stock being moved using a pallet truck, operating within the trailer and the dock sleeve. It is worth noting that the trailer of the vehicle under test was a temperature controlled unit, with noise emanating from a dedicated, diesel powered refrigeration motor. This presents a typical worst case delivery scenario, with regards to noise.

The noise profile taken over the delivery period (of approximately 40 minutes) is shown in Figure 1 below.

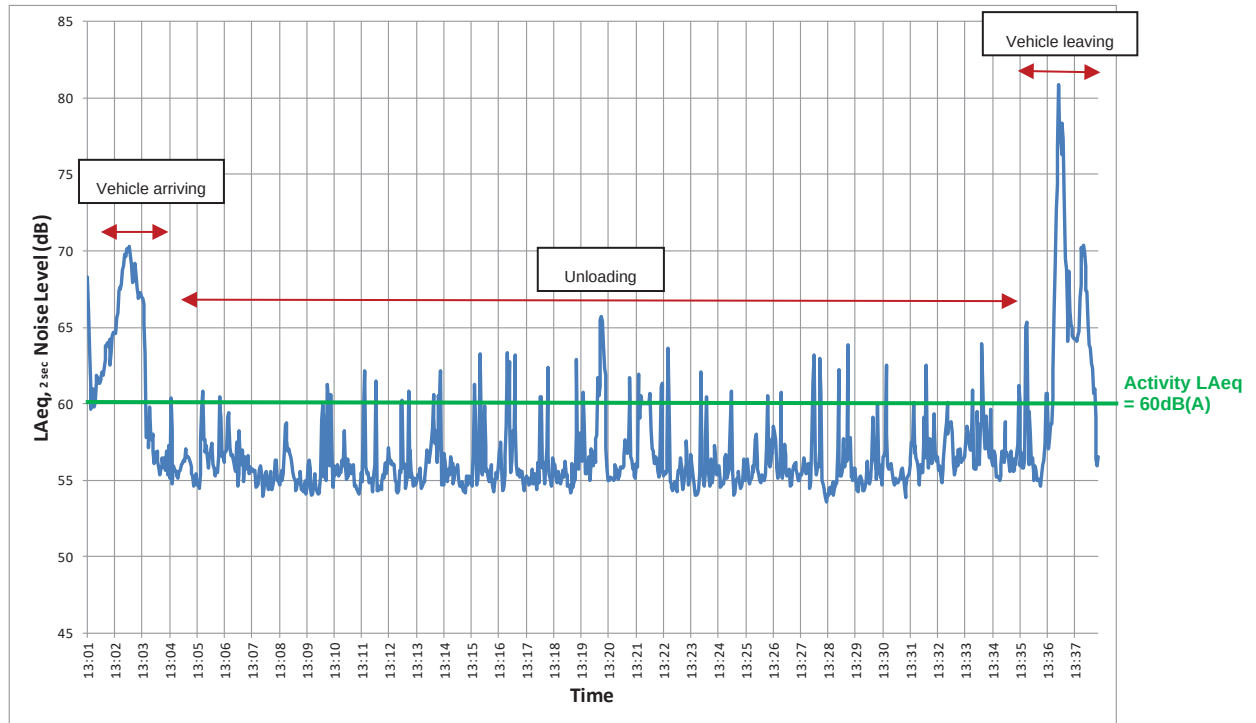


Figure 1: Measured noise levels from delivery activity at approximately 10m from the centre of the delivery area

Prediction methodologies use the sound power level (L_w) of a source as input data, so for this purpose the measured delivery activity noise level, expressed in terms of $L_{Aeq,T}$, needs to be converted to the equivalent activity sound power level. This is derived using the measured delivery $L_{Aeq,T}$ (where T is the delivery period), corrected firstly for the pre-existing ambient noise levels in the absence of the delivery and then to take account of the measurement surface area enveloping the noise source. A summary of the calculated activity sound power level associated with the delivery operation is shown in Table 4 below.

Detail	dB(A)	Octave Band Sound Power Levels (dB)							
		63	125	250	500	1k	2k	4k	8k
Activity $L_{Aeq,T}$ at 10m	60	66	65	55	53	55	54	45	38
L_p to L_w Correction	25	25	25	25	25	25	25	25	25
Activity Sound Power Level L_w	85	91	90	80	78	80	79	70	63

Table 4: Calculated activity sound power level associated with delivery operation

To accurately evaluate the overall effect of delivery noise, it is necessary to consider the noise that is likely to be generated by this operation, at the nearby residential receptor locations.

The sound power level of the delivery activity (as detailed in Table 4) is used as a starting point for the purpose of predicting noise levels in the surrounding environment and at specified community receptor locations near to the site, using an environmental noise propagation model. As with mechanical plant noise, the prediction of noise associated with deliveries is carried out using Bruel & Kjaer's 'Predictor' software.



The noise map, showing the noise contours produced by the delivery is included in Appendix E of this report. Predicted specific noise levels at the nearby receptor locations 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. Home Farm, Old Meadow Court.	32	21	27	21	23	27	25	12	-
R2. The Rookery, Old Meadow Court.	31	19	25	19	21	26	23	10	-
R3. Nearest consented residential property.	28	17	22	17	20	23	21	8	-
R4. No.16 Gresford Road	34	19	26	21	25	30	28	16	-

Table 5: Predicted specific noise contribution from the delivery activity at the nearby residential receptor locations.

As indicated in Table 5 predicted noise levels at the community locations would be in the range of L_{Aeq} 28-34dB(A).

7. ASSESSMENT OF NOISE IMPACTS

7.1 ASSESSMENT OF MECHANICAL PLANT NOISE

The proposed mechanical plant items would potentially run during the night time period. Consequently, for the purposes of this assessment, the predicted plant rating levels will be compared with the background sound levels measured during the most sensitive night time period, at the nearby residential receptor locations.

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

Residential Position	Specific Level (dB)	Feature Correction (dB)	Rating Level (dB)	Background L_{A90} (dB)	Assessment Level (dB) (Background excess)
R1. Home Farm, Old Meadow Court	17	+3	20	39	-19
R2. The Rookery, Old Meadow Court	15	+3	18	39	-21
R3. Nearest consented residential property	9	+3	12	39	-27
R4. No.16 Gresford Road	16	+3	19	39	-20

Table 6: Predicted rating levels from mechanical plant at the nearby residential properties, compared with the representative night time (23:00-06:00) background $L_{A90,15min}$ level

The study predicts that at the nearest residential positions, mechanical plant rating levels would not exceed the background noise levels during the night time. The difference between the rating levels and background levels is such that any uncertainty would have no significance on the outcome of the assessment. The difference between the rating levels and background level is such that any uncertainty is likely to have no significance on the outcome of the assessment. Furthermore, specific noise levels from mechanical plant would be comfortably lower than the GCN $L_{Aeq,8\text{ hour}}$ 45dB advised night time criteria at all of the nearby residential receptor locations.



Note the assessment represents a worst case scenario, as it assumes the proposed mechanical services plant associated with the Aldi store would be operating at full duty simultaneously. It would be very rare that all of the plant items would be operating at full duty at any given moment, particularly during the night-time, as much of the plant operates on thermostatic, speed and timer controls according to heat loads and occupation rates and so would not be operating 100% of the time. Therefore, the proposed mechanical plant would have a low noise impact.

7.2 ASSESSMENT OF DELIVERY NOISE

Table 7 shows a BS 4142 assessment covering the delivery noise impact. As indicated, the predicted delivery rating levels are compared with the background sound levels measured during the most sensitive evening period, when background noise levels are lower, at the nearby residential receptor locations.

In this instance, the rating level includes a +3dB(A) feature correction, as the delivery noise contains some occasional bangs and clatters, which may be considered as having impulsive character which could be just perceptible at the nearby residential receptor locations. No on-time correction has been applied, as the duration of the loading activity is typically equal to or greater than the assessment period.

Residential Position	Specific Level (dB)	Feature Correction (dB)	Rating Level (dB)	Background L_{A90} (dB)	Assessment Level (dB) (Background excess)
R1. Home Farm, Old Meadow Court	32	+3	35	37	-2
R2. The Rookery, Old Meadow Court	31	+3	34	37	-3
R3. Nearest consented residential property	28	+3	31	40	-9
R4. No.16 Gresford Road	34	+3	37	37	0

Table 7: Predicted rating level of delivery activity at the residential properties, compared with the most sensitive evening (22:00-23:00) period background $L_{A90,1hour}$ levels

The study predicts that the delivery rating levels would not exceed the background noise levels during the most sensitive late evening period at all of the nearest residential properties. In line with BS 4142:2014 guidance, deliveries to the store between 06:00 and 23:00 would have a low noise impact. Furthermore, predicted rating levels would not exceed Wrexham County Borough Council's advised criteria of rating levels not exceeding 5dB above the representative background L_{A90} level.

In an attempt to minimise uncertainty, continuous noise measurements have been carried out throughout the most sensitive periods at the site. Furthermore, the predictions of noise have been carried out in accordance with ISO 9613 Part 2:1996⁶. Therefore, the difference between the rating levels and background level is such that any uncertainty is likely to have no significance on the outcome of the assessment.

Again, specific levels from a delivery would also be comfortably lower than the GCN $L_{Aeq,16\text{ hour}}$ 50dB advised daytime criteria at all of the nearby residential receptor locations.

⁶ ISO 9613-2:1996 "Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation to determine Noise Levels"



8. CONCLUSIONS

A noise assessment has been completed to consider the potential impacts of noise produced by mechanical services plant and deliveries associated with a proposed Aldi food store at land off Straight Mile in Llay, Wrexham.

A background noise measurement survey has been conducted at locations representative of the most sensitive residential positions to the development site and predictions of noise from the cumulative mechanical plant equipment has been completed, utilising a proprietary software package. An assessment of the potential noise impact produced by deliveries to the store has also been completed.

The conclusions resulting from these assessments may be summarised as follows:

- Noise limits for mechanical services plant at the proposed Aldi store have been established, based on the measured background noise levels, as well as taking account of BS 4142 and GCN. Predictions have indicated that the overall noise levels from these services would meet noise limit objectives and consequently have a low impact.
- Noise limits for deliveries at the proposed Aldi store have been established, based on measured background noise levels, as well as taking account of BS 4142 and GCN. Predictions have indicated that noise levels from deliveries between 06:00 and 23:00 at the proposed Aldi store would meet noise limit objectives and consequently have a low impact.

The assessment has indicated that the development would have a low noise impact on the nearby residential community.

APPENDIX A

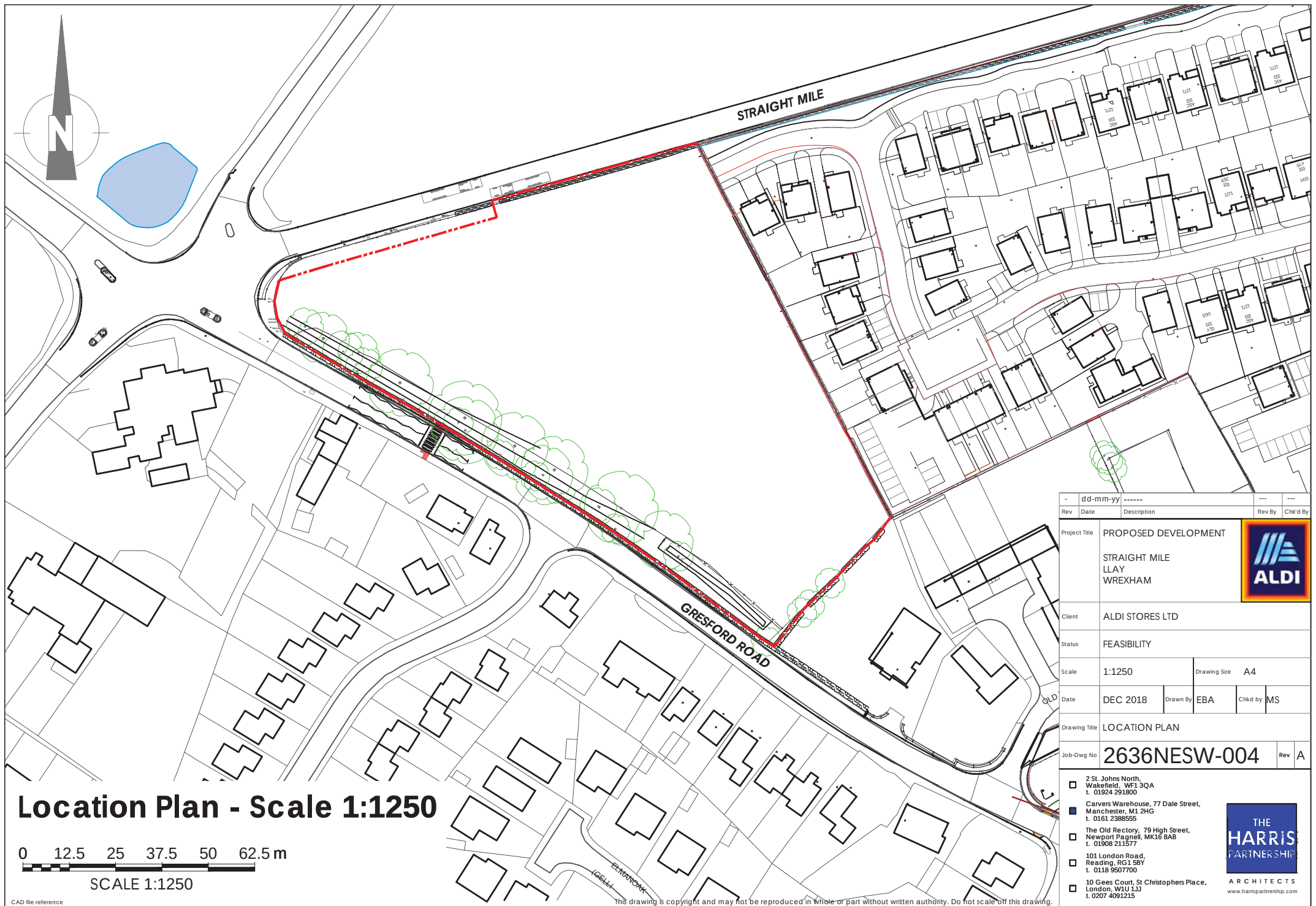
Existing site location plans



Proposed Development Site

Position 2

Position 1



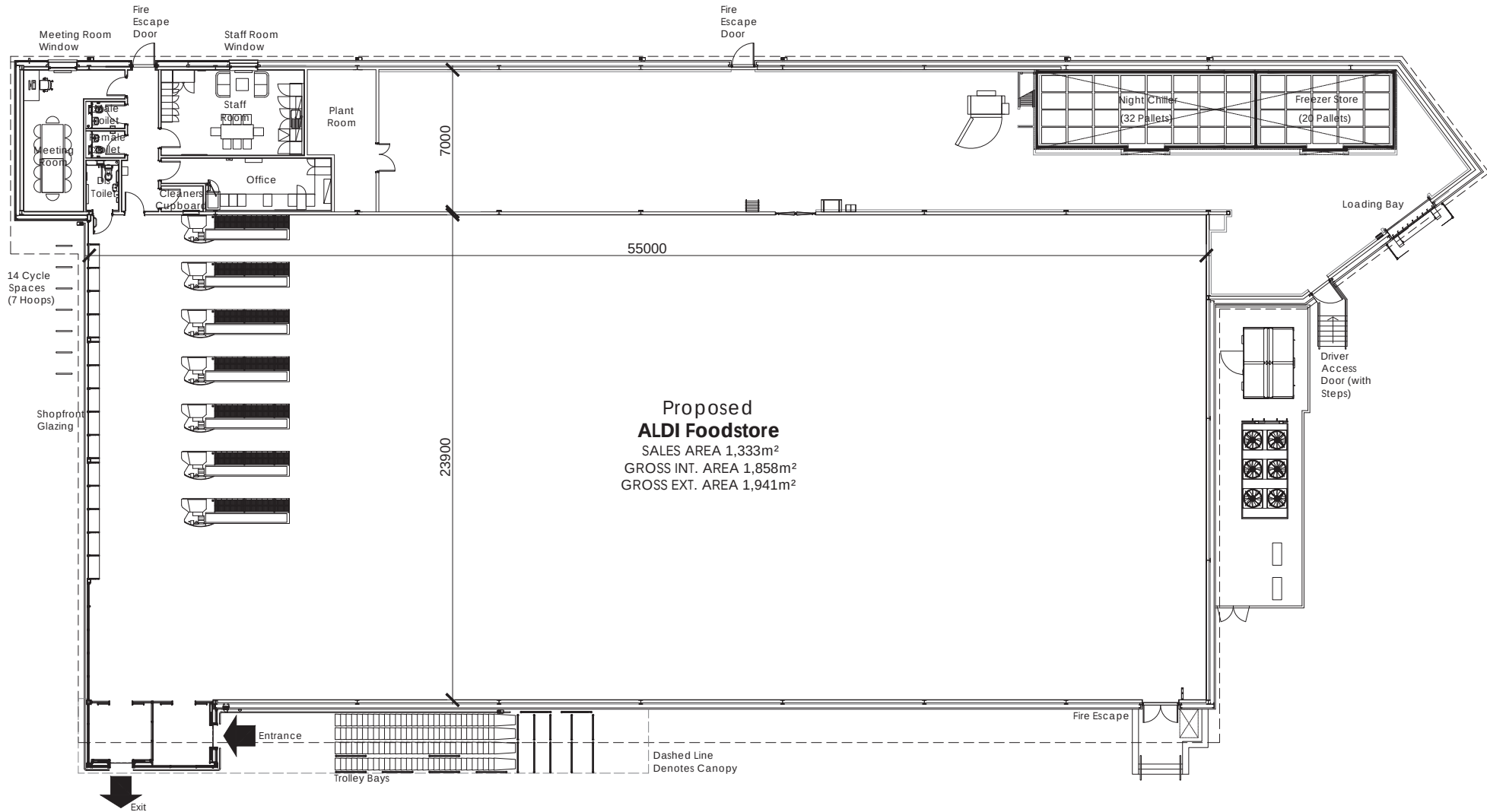
Rev	dd-mm-yy	Date	Description	Rev By	Chkd By
Project Title					
PROPOSED DEVELOPMENT					
STRAIGHT MILE					
LLAY					
WREXHAM					
Client					
ALDI STORES LTD					
Status					
FEASIBILITY					
Scale				Drawing Size	
1:1250				A4	
Date	DEC 2018	Drawn By	EBA	Chkd by	MS
Drawing Title					
LOCATION PLAN					
Job-Dwg No					Rev
2636NESW-004					A
☐ 2 St. Johns North, Wakefield, WF3 3QA t. 01924 291800					
☒ Carvers Warehouse, 77 Dale Street, Manchester, M1 2HG t. 0161 2388555					
☐ The Old Rectory, 79 High Street, Newport Pagnell, MK16 8AB t. 01595 215177					
☐ 101 London Road, Reading, RG1 5BY t. 0118 9507700					
☐ 10 Gees Court, St Christophers Place, London, W1U 1JJ t. 0207 4091215					



A P P E N D I X B

Proposed scheme layout drawings





Proposed General Arrangement Plan
Scale 1:100 @ A1

0 1000 2000 3000 4000 5000mm
SCALE 1:100

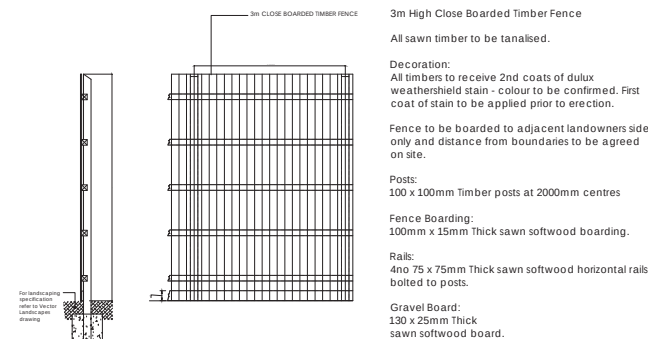
				A Revision		PLANT UPDATE:		MS		MS	
				Rev		Description		Rev		CHK	
Project Title		PROPOSED DEVELOPMENT				Drawing Title		PROPOSED GENERAL ARRANGEMENT PLAN			
LRESS ROAD GLAYFORD		Job-Draw No.				2636NESW-123		Rev			
Client		ALDI STORES LTD.		☐		2 St. Johns North Walsford, MF1 3QA 01939 230000		☐		Canv's Warehouse, 77 Dale Street, Manchester, M1 2PD 0161 2380050	
Status		PLANNING		☐		The Old Rectory, 75 High Street, Walsford, Northants, NN4 6DA 01930 215577					
Scale		1:100		Drawing Size		A1		100 London Road, Reading, RG1 5BT 0118 9677700			
Date		SEPT 2020		Drawn By		MS		100 Great Court St, Chippinghase Place, Reading, RG1 1LS 01800 409215		ARCHITECTS www.harrisarchitects.com	
				Checked		MS					



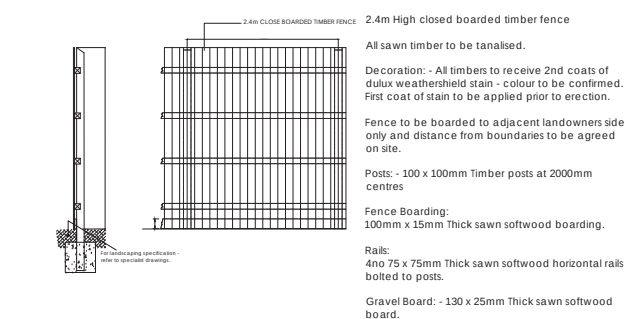
3m High Acoustic Fence: Scale 1:50

3.5m High Acoustic Fence: Scale 1:50

4m High Acoustic Fence: Scale 1:50



2.4m High Close Boarded Timber Fence: Scale 1:50



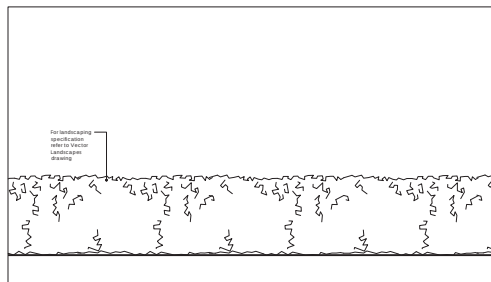
Existing Hedge:

Photo taken from Gresford Road



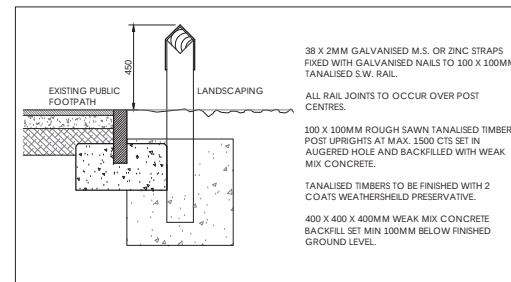
Proposed Hedge:

Refer to Landscape Plan for further information



Proposed Timber Knee Rail:

1:20 scale



Boundary Treatment
Scale 1:500 @ A2

0 5 10 15 20 25m
SCALE 1:500



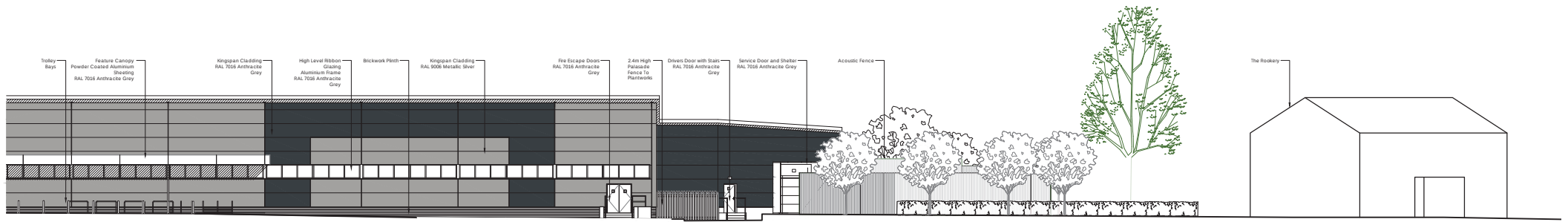
Application Boundary
11,029sqm/2.73 acres

A	06/11/2020	UPDATED TO MATCH 122A.		MS	MS
Rev	Date	Description		Rev By	Chkd By
Project Title	PROPOSED DEVELOPMENT				
	GRESFORD ROAD LLAY				
Client	ALDI STORES LTD				
Status	PLANNING				
Scale	1:500		Drawing Size	A2	
Date	SEPT 2020		Drawn By	MS	Checked MS
Drawing Title	PROPOSED BOUNDARY TREATMENT				
Job-Dwg No	2636NESW-127				Rev A

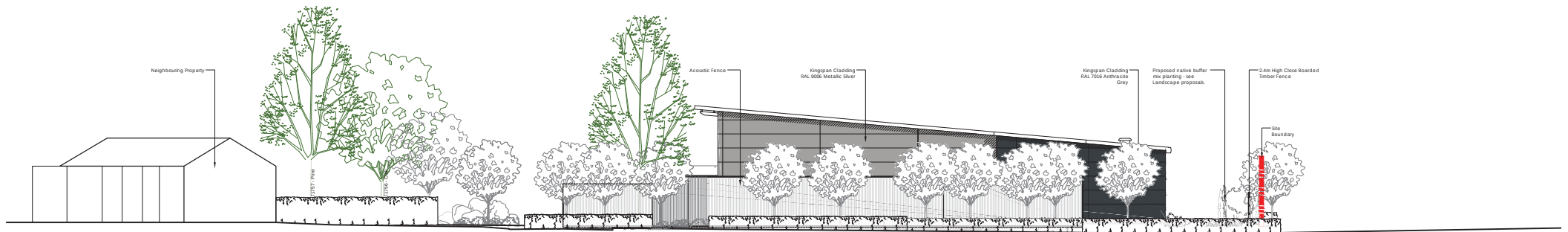
- 2 St. Johns North, Wakefield, WF1 3QA
t. 01924 291900
- Carvers Warehouse, 77 Dale Street, Manchester, M1 2HG
t. 0161 2389555
- The Old Rectory, 79 High Street, Newport Pagnell, MK16 8AG
t. 01908 211577
- 101 London Road, Reading, RG1 1SB
t. 0118 9507700
- 10 Gees Court, St Christophers Place, London, W1U 1JJ
t. 0207 4891215

THE HARRIS PARTNERSHIP
ARCHITECTS
www.harrispartnership.com

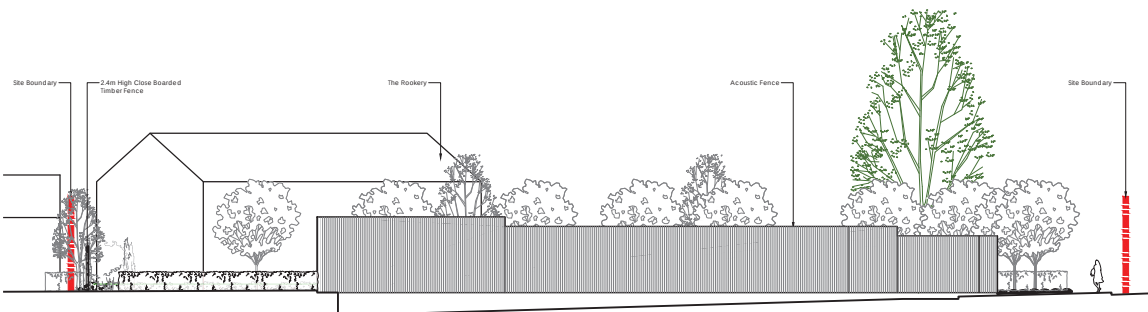
This drawing is copyright and may not be reproduced in whole or part without written authority. The Harris Group Ltd does not accept liability for any deviation from our drawings or specifications. Do not scale off this drawing.



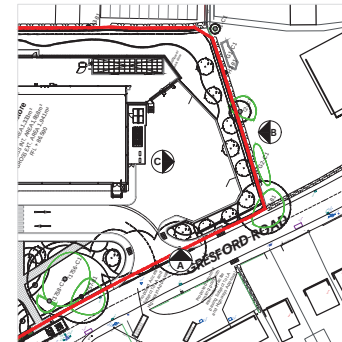
A - GRESFORD ROAD ELEVATION 1:200



B - LOADING BAY ELEVATION 1:200



C - LOADING BAY INTERNAL ELEVATION 1:200



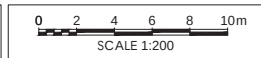
Elevation Key: Not to Scale

A	06/11/2020	UPDATED TO MATCH 122A.	MS	MS
Rev	Date	Description	Rev By	Chkd By
Project Title			ALDI	
GRESFORD ROAD LLYAY				
Client			ALDI STORES LTD	
Status			PLANNING	
Scale		1:500	Drawing Size A2	
Date	SEPT 2020	Drawn By	MS	Checked MS
Drawing Title			PROPOSED FENCE ELEVATIONS	
Job-Dwg No			2636NESW-129	Rev A

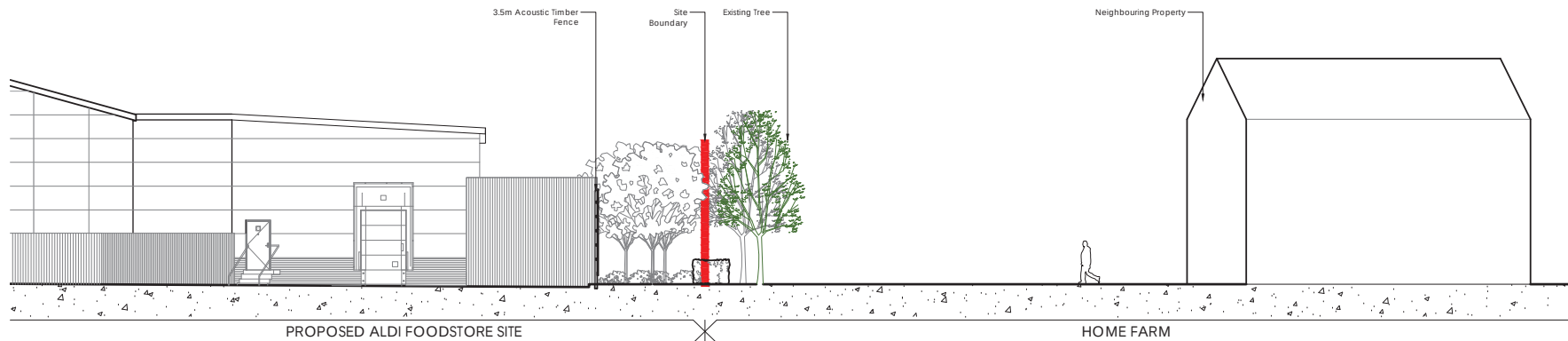
- ☐ 2 St. Johns North, Wakefield, WF1 3QA t. 01524 291900
- ☒ Carvers Warehouse, 77 Dale Street, Manchester, M1 2HG t. 0161 2389555
- ☐ The Old Rectory, 79 High Street, Newport Pagnell, MK16 8AB t. 01908 211577
- ☐ 101 London Road, Reading, RG1 1BY t. 0118 9507700
- ☐ 10 Gees Court, St Christophers Place, London, W1U 1JJ t. 0207 4891215



Proposed Fence Elevations
Scale 1:200 @ A2

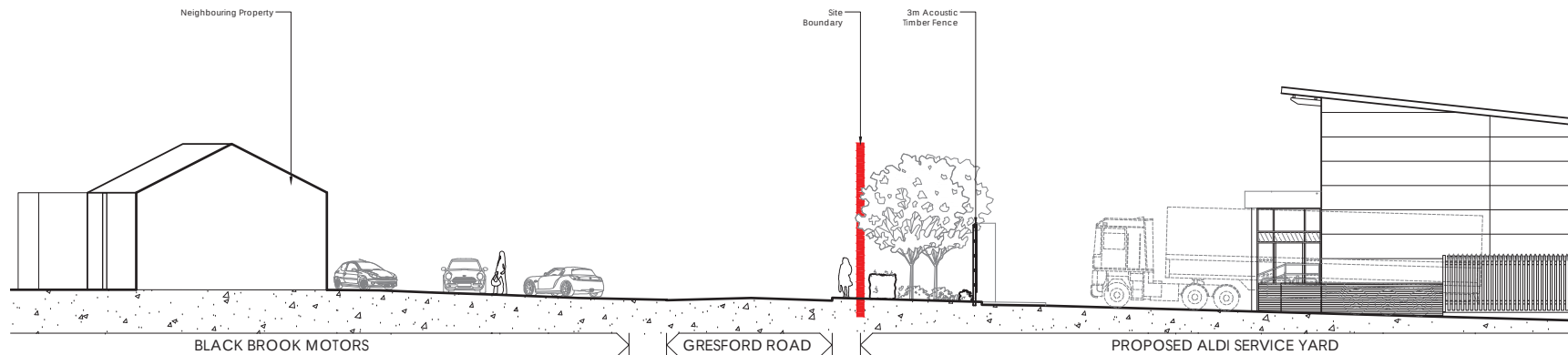


This drawing is copyright and may not be reproduced in whole or part without written authority. The Harris Group Ltd does not accept liability for any deviation from our drawings or specifications. Do not scale off this drawing.



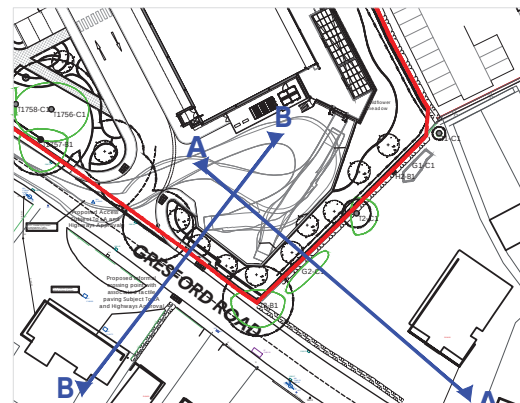
A-A: SERVICE AREA SECTION

1:200



B-B: GRESFORD ROAD SECTION

1:200



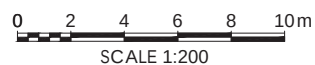
SECTION KEY: NTS

A	06/11/2020		PLANT UPDATED		MS	MS
Rev	Date	Description			Rev By	Chk'd By
Project Title	PROPOSED DEVELOPMENT					
	GRESFORD ROAD LLAY					
Client	ALDI STORES LTD.					
Status	PLANNING					
Scale	1:200			Drawing Size	A3	
Date	SEPT 2020		Drawn By	MS	Checked	MS
Drawing Title	PROPOSED FENCE SECTIONS					
Job-Dwg No	2636NESW-130				Rev	A

- ☐ 2 St. Johns North, Wakefield, WF1 3QA t. 01524 251800
- ☒ Carvers Warehouse, 77 Dale Street, Manchester, M1 2HG t. 0161 2388555
- ☐ The Old Rectory, 79 High Street, Newport Pagnell, MK16 8AB t. 01908 211577
- ☐ 101 London Road, Reading, RG1 5BY t. 0118 550700
- ☐ 10 Gees Court, St Christophers Place, London, W1U 1JJ t. 0207 4091215



Proposed Fence Sections
Scale 1:200 @ A3



APPENDIX C

Email correspondence with Environmental Health Officer

From: [Nick Minshall](#)
To: [Rob Kirkaldy](#)
Subject: RE: Proposed Aldi Store in Llay, Wrexham - Planning Noise Impact Assessment
Date: 25 February 2019 16:43:00

Hello Rob

I confirm that the proposed methodology for the noise assessment is acceptable.

Regards Nick

From: Rob Kirkaldy
Sent: 25 February 2019 15:59
To: Nick Minshall
Cc: Gabrilatsou, Joanna; Black, Yvette
Subject: Proposed Aldi Store in Llay, Wrexham - Planning Noise Impact Assessment

Hi Nick

Good to speak to you this afternoon. As discussed, please find a summary of our noise impact assessment methodology below. For information, I have attached a site location plan and pre-app comments. Note, planning permission for a residential development to the rear of the site was recently granted, so those proposed dwellings will be included in this assessment.

The potential noise impacts identified at the Aldi Store development are as follows:

- Noise from fixed external mechanical plant, including refrigeration and ventilation equipment.
- Noise from vehicle deliveries to the store.

Background Noise Survey

The proposal is to undertake an unmanned noise measurement survey, with monitoring equipment set up to represent the positions of the nearest affected noise sensitive properties and left to operate for at least 24 hours.

Plant Noise

The impact of noise from mechanical plant at the proposed store will be established by prediction, using sound power data provided by the suppliers of the mechanical services equipment. The predictions will be carried out using a computer noise model which follows the procedures included in ISO 9613-1:1993 Acoustics – Attenuation of sound during propagation outdoors. The calculated mechanical plant noise contribution will then be compared with the measured background noise data for the relevant periods, in order to provide an assessment in accordance with BS 4142:2014 Methods for rating and assessing industrial and commercial sound. Predicted plant noise levels will also be compared with the guideline absolute noise levels listed in Guidelines for Community Noise – World Health Organization, 1999 (WHO).

I understand you have a standard planning condition which requires plant rating levels to not exceed 5dB above the representative background LA90 level, in accordance with BS 4142:2014.

Delivery Noise

The impact of the noise associated with deliveries to the proposed store will also be established by prediction. The prediction will utilise delivery noise levels previously measured by Spectrum at a number of existing Aldi stores in the North West region. The prediction will again be made using a computer noise model to determine the contribution at the nearest residential locations to the site. The calculated delivery noise contribution will then be compared with the measured background noise data for the relevant period in order to provide an assessment in accordance with BS 4142:2014 Methods for rating and assessing industrial and commercial sound. Predicted delivery noise levels will also be compared with the guideline absolute noise levels listed in Guidelines for Community Noise – World Health Organization, 1999 (WHO).

I understand there are no standard planning conditions relating to delivery noise levels. Having attached a site location plan, are you able to provide some guidance on the target BS 4142:2014 assessment level?

Report

The report will provide the results of the background noise measurement survey, as well as both mechanical plant and delivery noise assessments. The noise impact assessment report will also include comments, as necessary, on any required mitigating measures to achieve reasonable noise limit objectives.

If you can confirm the above is acceptable, it would be much appreciated.

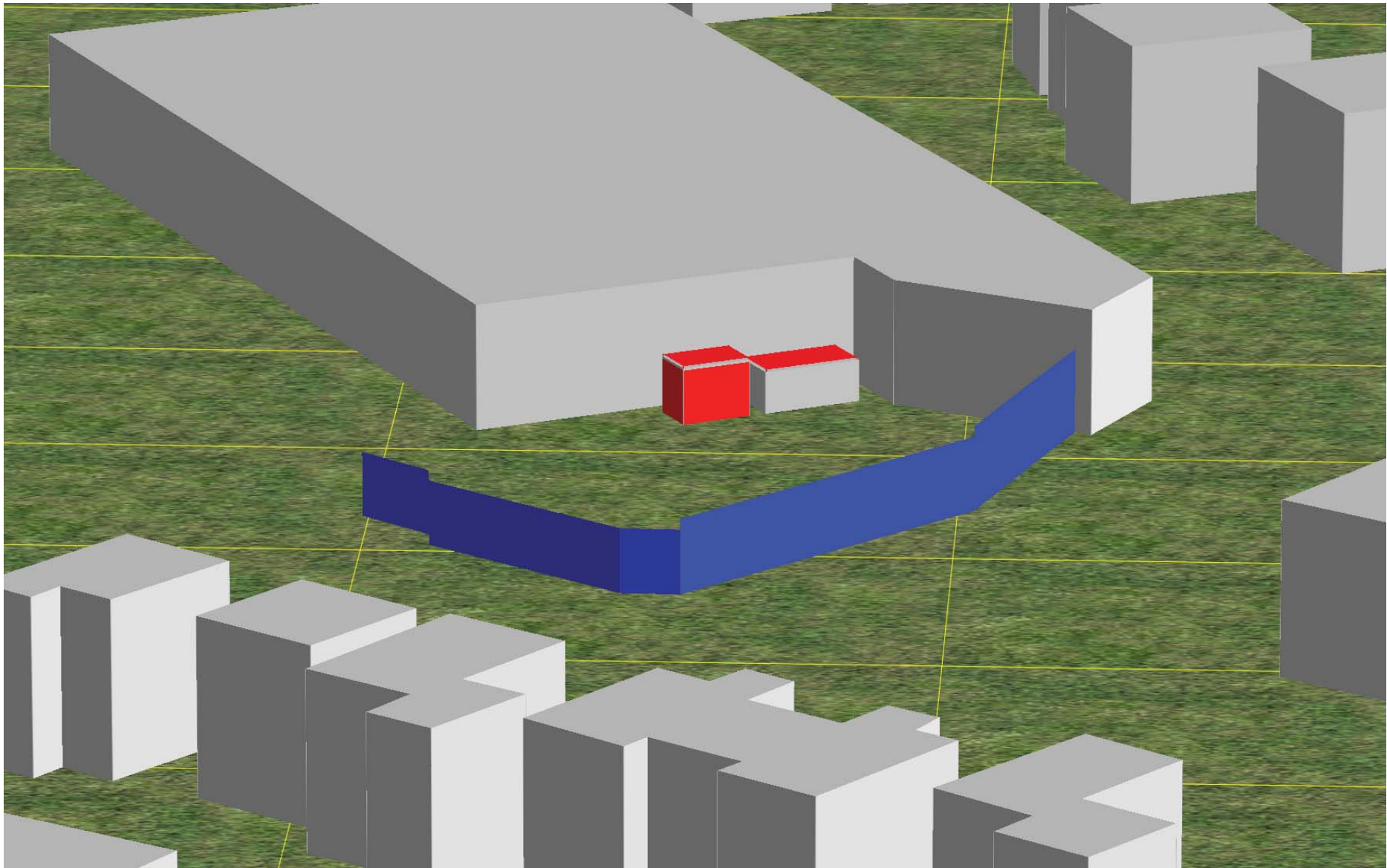
Kind regards

Rob Kirkaldy
Senior Consultant

Spectrum Acoustic Consultants Ltd

A P P E N D I X D

Results of the noise prediction model relating to mechanical plant



Aldi Llay, Wrexham

Predicted Plant Noise Levels

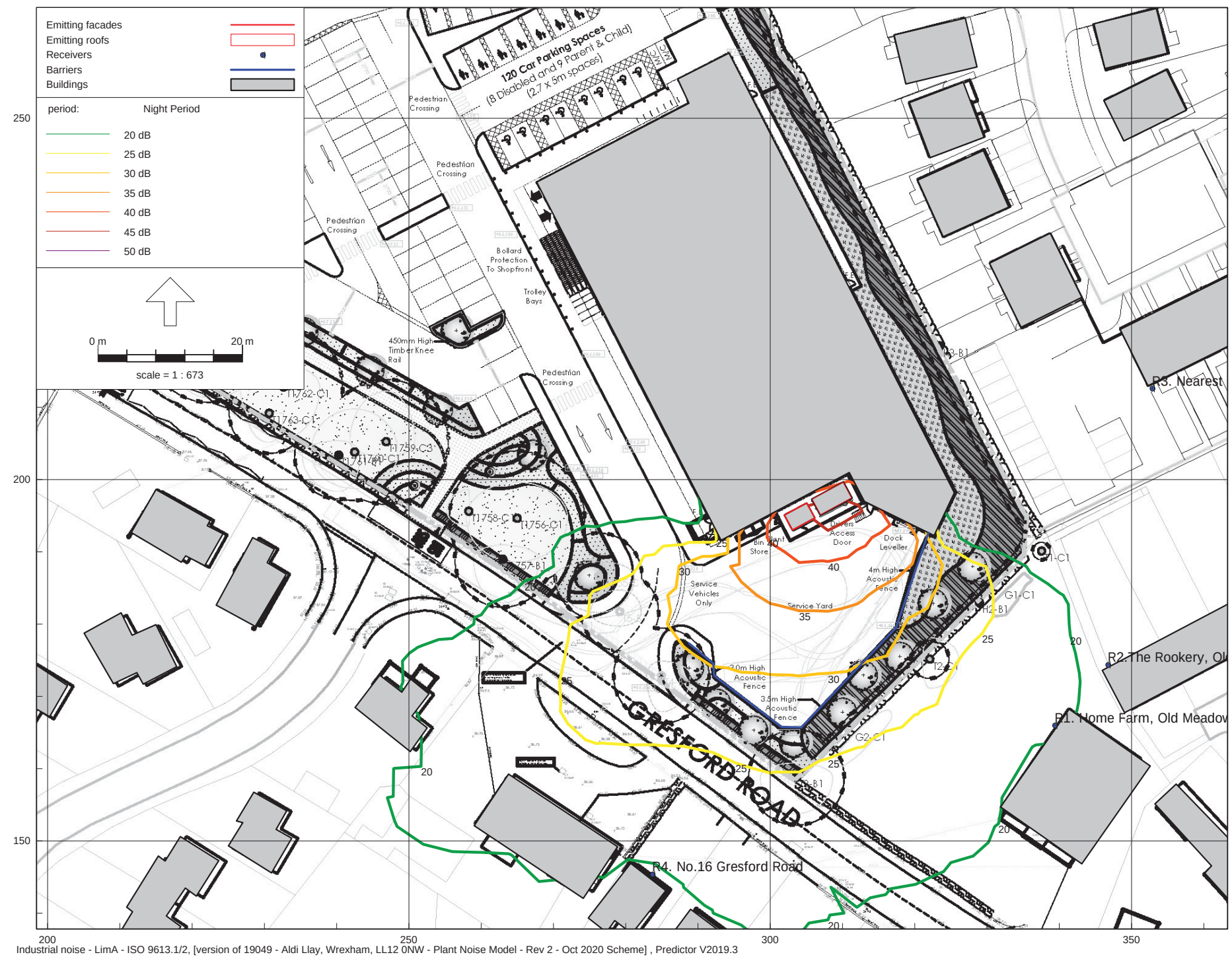
Report: Table of Results
Model: Plant Noise Model - Rev 2 - Oct 2020 Scheme
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name		Height	Night								
Receiver	Description		Total	63	125	250	500	1000	2000	4000	8000
_A	R1. Home Farm, Old Meadow Court.	1.50	17	--	10	10	10	11	6	--	--
_A	R2.The Rookery, Old Meadow Court.	1.50	15	--	9	8	8	9	6	--	--
_A	R3. Nearest consented residential property.	1.50	9	--	1	3	3	3	--	--	--
_A	R4. No.16 Gresford Road	1.50	16	--	9	9	10	11	6	--	--

All shown dB values are A-weighted

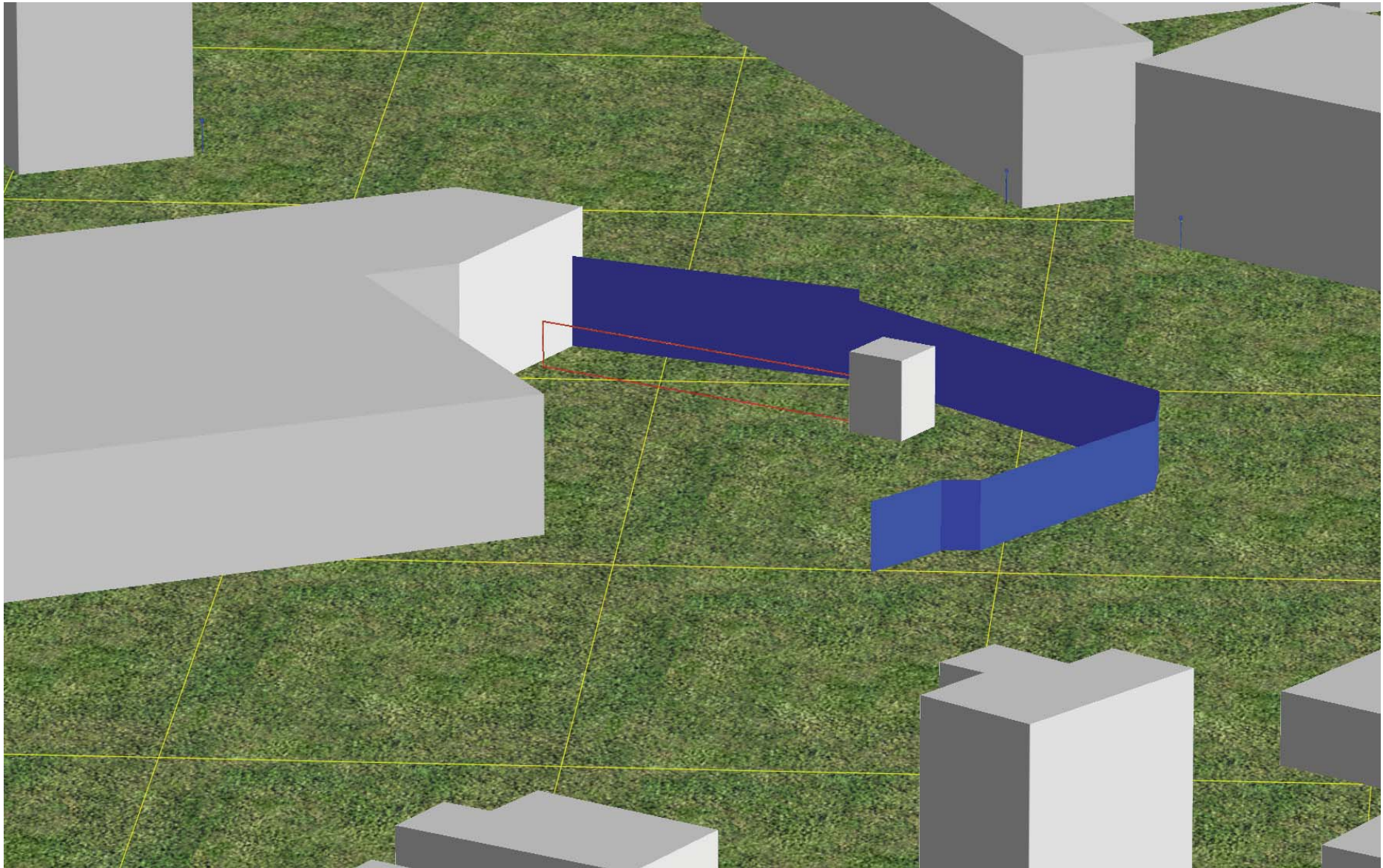
Predictor V2019.3

07/10/2020 12:21:26



APPENDIX E

Results of the noise prediction model relating to deliveries



Aldi Llay, Wrexham

Predicted Delivery Noise Levels

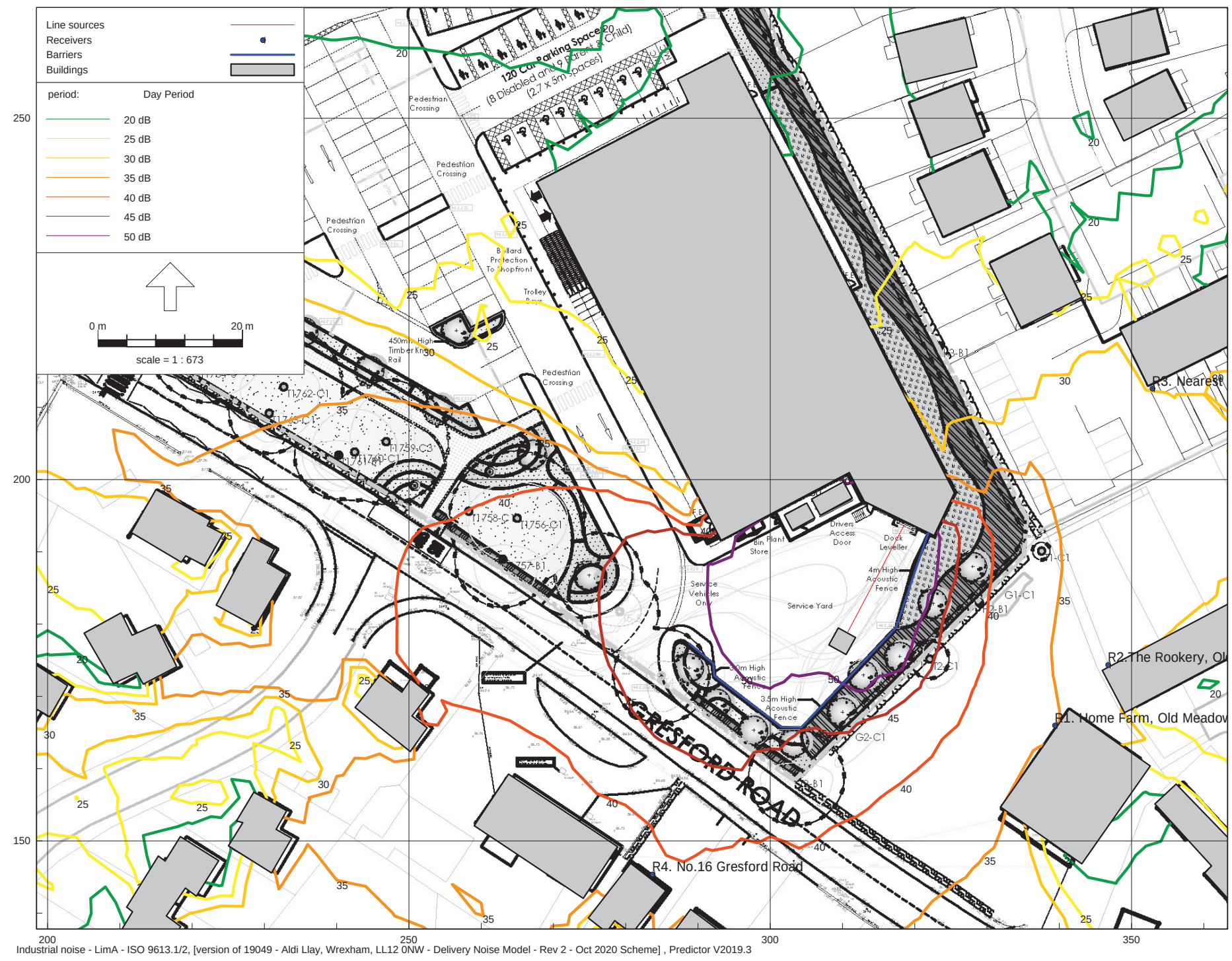
Report: Table of Results
Model: Delivery Noise Model - Rev 2 - Oct 2020 Scheme
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name		Height	Day								
Receiver	Description		Total	63	125	250	500	1000	2000	4000	8000
_A	R1. Home Farm, Old Meadow Court.	1.50	32	21	27	21	23	27	25	12	--
_A	R2.The Rookery, Old Meadow Court.	1.50	31	19	25	19	21	26	23	10	--
_A	R3. Nearest consented residential property.	1.50	28	17	22	17	20	23	21	8	--
_A	R4. No.16 Gresford Road	1.50	34	19	26	21	25	30	28	16	--

All shown dB values are A-weighted

Predictor V2019.3

07/10/2020 12:25:35



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