

SHARPS REDMORE

ACOUSTIC CONSULTANTS ▪ Established 1990



Report

Aldi Foodstore

**Sussex House, Perrymount
Road, Haywards Heath**

Environmental Noise Report

Prepared by

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Date December 2024

Project No 2422720

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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 carry out a noise assessment for a new Aldi food store at Sussex House, located on Perrymount Road, Haywards Heath, RH16 1DN. The site location is shown in Figure 1 below:

FIGURE 1: Site Location



- 1.2 The application site is within the administrative area of Mid Sussex District Council (MSDC) and is currently a commercial building, known as Commercial House and 54-56 Perrymount Road. The site is located approximately 150 metres to the east of Haywards Heath train station and is bounded by Perrymount Road to the west and Sydney Road located further to the north. The surrounding area is mixed use with a Waitrose supermarket immediately to the west, the Elan pre-school and nursery to the south and residential properties to the north of the site. Planning permission has been granted¹ for conversion Commercial House, which is part of the site and currently retail/office use to create 8 new flats. Sussex House has also recently been granted prior approval² for change of use to residential.
- 1.3 Planning permission is being sought for redevelopment of the site for the construction of a Class E foodstore (Aldi) alongside access, parking, landscaping and associated works. The proposed layout is shown in Appendix A.
- 1.4 The purpose of this assessment is to assess the impact of the proposed retail store on surrounding noise sensitive properties, including the residential properties to the north of the site and Clair's House to the south. Based on experience of similar retail developments the following main impacts have been identified.
- Noise from mechanical services plant e.g. refrigeration units;
 - Noise from servicing activity;
 - Noise from car park activity

¹ Planning Permission Reference DM/24/1097

² Planning Reference DM/24/1707

- 1.5 Section 2.0 contains a discussion of the available methods of assessment and assessment criteria.
- 1.6 Section 3.0 of this report contains details of the environmental noise survey.
- 1.7 Sections 4.0 of the report contain an assessment of the impact of noise from the development of the surrounding residential properties. The report conclusions are summarised in Section 5.0.
- 1.8 A guide to the acoustic terminology used within the report is included in Appendix C.

2.0 Assessment Methodology and Criteria

National Policy

- 2.1 The National Planning Policy Framework (NPPF), December 2023, sets out the Government's planning policies for England and "these policies articulate the Government's vision of sustainable development." In respect of noise, Paragraph 191 of the NPPF states the following:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and*
- c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation".*

- 2.2 Regard is also had to the 2024 NPPF which is currently in draft form, in terms of noise there are no changes to the advice above.

- 2.3 Guidance on the interpretation of the policy aims contained within the NPPF is contained within National Planning Policy Guidance (NPPG). The NPPG introduces the concept of a noise exposure hierarchy based on likely average response. The guidance contained in the NPPG is summarised in the table below:

TABLE 1: Noise Exposure Hierarchy

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not noticeable	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			

Response	Examples of Outcomes	Increasing Effect Level	Action
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

- 2.4 The NPPF and NPPG reinforce the March 2010 DEFRA publication, “Noise Policy Statement for England” (NPSE), which states three policy aims, as follows:

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

- *avoid significant adverse impacts on health and quality of life;*
- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life.”*

- 2.5 Together, the first two aims require that no significant adverse impact should occur and that, where a noise level which falls between a level which represents the lowest observable adverse effect and a level which represents a significant observed adverse effect, then according to the explanatory notes in the statement:

“... all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life whilst also taking into consideration the guiding principles of sustainable development. This does not mean that such effects cannot occur.”

Local Policy

- 2.6 With regard to local policy regard is had to Policy DP 29 of the Mid Sussex District Plan which in terms of noise states that development should be designed, located and controlled to minimise the impact of noise on health and quality of life and if likely to generate significant levels of noise incorporate attenuation measures. Policy DP29 refers to the Sussex guide on noise for developers which is discussed in more detail below.
- 2.6 Policy DPN7 of the emerging local plan() considers noise impacts and is consistent with the policy aims contained in the NPPF i.e. that development will only be permitted where it avoids significant adverse impacts on health and quality of life and mitigates and minimise adverse impacts.
- 2.7 Existing and emerging local policy is consistent with national policy in that the significance of the noise impact must be considered. The fact that a noise can be heard is not reason to refuse planning permission.
- 2.8 Neither national or local policy provide any objective guidance on noise however it is possible to apply objective standards to the assessment of noise and the effect produced by the introduction of a certain noise source may be determined by several methods, as follows:
- i) The effect may be determined by reference to guideline noise values. British Standard (BS) 8233:2014 and World Health Organisation "Guidelines for Community Noise" contain such guidelines.
 - ii) Alternatively, the impact may be determined by considering the change in noise level that would result from the proposal, in an appropriate noise index for the characteristic of the noise in question. There are various criteria linking change in noise level to effect. This is the method that is suited to, for example, the assessment of noise from road traffic because it is capable of displaying impact to all properties adjacent to a road link irrespective of their distance from the road.
 - iii) Another method is to compare the resultant noise level against the background noise level (L_{A90}) of the area. This is the method employed by BS 4142:2014 to determine the impact of noise of an industrial or industrial type nature. It is best suited to the assessment of steady or pseudo-steady noise.

Guideline noise values

- 2.9 There are a number of guidance documents that contain recommended guideline noise values. These are discussed below.
- 2.10 British Standard 8233:2014 is principally intended to assist in the design of new dwellings; however, the Standard does state that it may be used in the assessment of noise from new sources being brought to existing dwellings.
- 2.11 The original BS 8233 was based on the advice contained in the draft World Health Organisation document "Guidelines for Community Noise". This document was released in final form in 2000. The World Health Organisation guidance is referenced in the NPSE.

- 2.12 The WHO advice is the most useful, comprehensive, and pertinent advice in this case, because it is not specific to the circumstances of the assessment. Instead, it provides guidance on acceptable limits in, for example, schools, dwellings and offices.
- 2.13 The WHO guideline values are appropriate to what are termed “critical health effects”. This means that the limits are at the lowest noise level that would result in any psychological, physiological or sociological effect. They are, as defined by NPSE, set at the Lowest Observed Adverse Effect Level (LOAEL), but do not define the level above which effects may be considered significant (SOAEL). Compliance with the LOAEL should, therefore, be seen as a robust aim.
- 2.14 The WHO LOAEL guideline values are summarised in the following table.

TABLE 2: WHO Guidelines

Document	Level	Guidance
World Health Organisation “Community Noise 2000”	$L_{AeqT} = 55$ dB	Serious annoyance, daytime and evening. (Continuous noise, outdoor living areas)
	$L_{AeqT} = 50$ dB	Moderate annoyance, daytime and evening. (Continuous noise, outdoor living areas).
	$L_{AeqT} = 35$ dB	Moderate annoyance, daytime and evening. (Continuous noise, dwellings, indoors)
	$L_{AeqT} = 30$ dB	Sleep disturbance, night-time (indoors)
	$L_{AMAX} = 60$ dB	Sleep disturbance, windows open at night. (Noise peaks outside bedrooms, external level).
	$L_{AMAX} = 45$ dB	Sleep disturbance at night (Noise peaks inside bedrooms, internal level)

- 2.15 For L_{AeqT} criteria the time base (T) given in the document is 16 hours for daytime limits and 8 hours for night time limits. When assessing impact, this has the tendency to smooth out the hourly variations in noise level. As such, our calculations are carried out to a 1-hour time base, which is more stringent assessment than is given in the guidance but is reflective of the actual duration of the delivery process.
- 2.16 In 2018 the WHO published the “Environmental Noise Guidelines for the European Region” (ENGER). The new WHO Environmental Noise Guidelines (page 28) explain that “*The current environmental noise guidelines for the European Region supersede the CNG from 1999. Nevertheless, the GDG (Guideline Development Group) recommends that all CNG indoor guideline values and any values not covered by the current guidelines (such as industrial noise and shopping areas) should remain valid*”. Hence the CNG remain relevant to this assessment.
- 2.17 The WHO ENGER brings together the latest research on the effects of specific types of noise on health in relation to transportation noise sources (road, rail and aircraft noise exposure), wind turbines and leisure noise. Hence in direct relation to the specific proposal that this noise assessment considers, the new WHO ENGER are not of material consideration.

Changes in noise level

- 2.18 Changes in noise levels of less than 3 dBA are not perceptible under normal conditions and changes of 10 dB are equivalent to a doubling of loudness. This guidance has been accepted by Inspectors, at Inquiry, to encompass changes in noise levels in the index $L_{Aeq,T}$ in relation to road traffic noise and therefore if of limited use in this case.
- 2.19 The following table shows the response to changes in noise level (known as the Semantic Scale).

TABLE 3: Change in noise level

Change in noise level $L_{Aeq,T}$ dB	Response	Impact
<3	Imperceptible	None
3 - 5	Perceptible	Slight
6 - 10	Up to a doubling	Significant
11 – 15	More than a doubling	Substantial
> 15	-	Severe

BS 4142:2014+A1:2019

- 2.20 As discussed, this BS described a method for rating and assessing sound of industrial and/or commercial nature according to the following summary process:
- Carry out a numerical assessment of the noise, taking into the character and areas of uncertainty, by comparing the noise against the existing background noise level. The greater the difference between the two, the greater the impact.
 - By considering the noise impact against the context in which it is placed. There are many contextual points to consider when considering an assessment of sound impact including the following:
 - The absolute level of sound.
 - The character and level of the specific sound compared to the existing noise climate.
 - The sensitivity of the receptors.
 - The time and duration that the specific sound occurs. The conclusions of assessments undertaken using alternative assessment methods, for example WHO guideline noise values or change in noise level.
 - The ability to mitigate the specific sound through various methods, for example by screening, the selection of quiet plant equipment, the use of attenuators, through the imposition of noise management plans and good practice, façade design and layout/orientation.
 - The form and scale and scale of a development. For example, does not the proposed development involve a new industrial/commercial premise or is the proposal the installation of new plant or an extension to an existing premises?

- 2.21 It is therefore entirely possible that whilst the numerical outcome of a BS 4142 assessment is indicative of adverse or even significant adverse impact, when the proposal is considered in context the significance of the impact is reduced to an acceptable level.

Local Design Guidance

- 2.22 The Planning Noise Advice Document Sussex, (2023) provides further guidance on the assessment of noise. This document compliments the advice contained within the NPPF and NPSE and also contains guidance on objective noise criteria for various types of development. In relation to Industrial and commercial sites and plant, the following noise thresholds are recommended:

1. The rating level of the plant should, where practicable, be no greater than the existing background levels, when measured in accordance with BS 4142.
2. Where background noise levels are very low, discussions should be had with the LPA on the objectives to be agreed;
3. Apply the indoor ambient noise levels in Tables 4 and 6 of BS 8233:2014.

3.0 Survey Details

- 3.1 A noise survey was undertaken at the site between 13 and 16 September 2024 to obtain measurements of the existing noise climate. Measurements were taken at two locations as shown in Figure 2 below. The measurement locations were chosen to represent the nearest noise sensitive properties to the site.

FIGURE 2: Monitoring Location



- 3.2 The sound level meters were set up to continually record noise levels at 5-minute intervals. Noise measurements were taken using Norsonic type 1 sound level meters which were calibrated at the start and end of the survey and no variation in level was noted. All measurements were carried out in free-field conditions.
- 3.3 The weather conditions during the survey were noted from site observations when setting up and picking up the equipment and from online information. Weather conditions were generally dry with light breeze and were suitable for taking sound level measurements.
- 3.4 A summary of the survey results are shown in Figures 3 and 4 below.

FIGURE 3: Survey Results – NL1

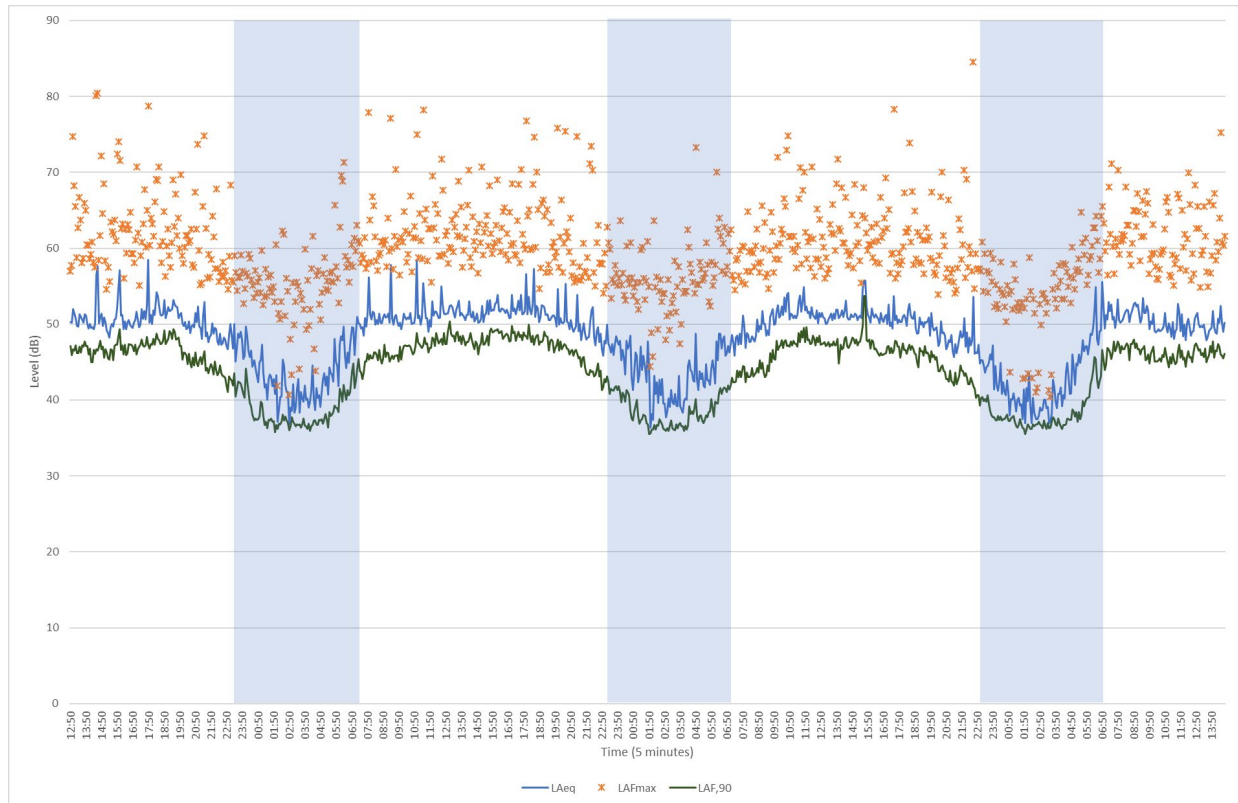
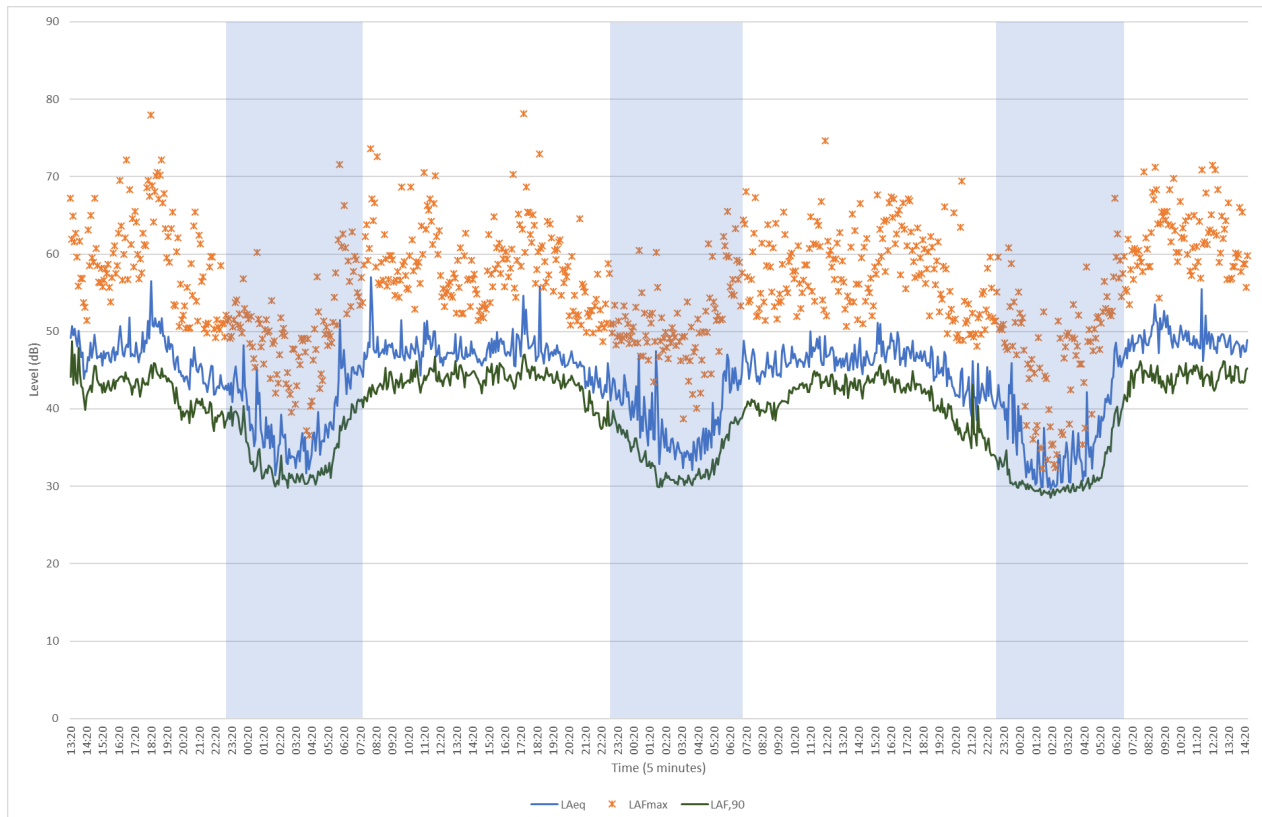


FIGURE 4: Survey Results – NL2



- 3.5 Existing noise levels were dictated by road traffic noise. As shown in Figures 3 and 4 above, noise levels were reasonably steady during the day, reducing during the evening period, with the lowest noise levels recorded during the early hours between 0100 – 0200 hrs. Background noise levels determined from a modal analysis of the measured noise levels at each location were at NL1, 48 dB during the day and 37 dB during the night time period and at NL2 around 44 dB during the day and 31 dB during the night time period.

4.0 Noise Assessment

- 4.1 As outlined in section 1.0 of this report the main impacts from the proposed works will be noise from mechanical services plant, delivery activity and car park activity.

Mechanical Services Plant

- 4.2 The precise details of the mechanical services plant and refrigeration equipment (type and noise signature) are not known at this stage. However, it is expected that fixed plant would include refrigeration pack, condenser units and heat pumps which will be located in an external plant area located on the rear (northern/eastern) corner of the building.
- 4.3 With regard to the assessment of industrial noise sources in commercial premises (i.e. fixed mechanical plant associated with the supermarket) BS 4142:2014+A1:2019 enables the resultant noise from new equipment to be compared to the existing background noise level (L_{A90}) of an area to assess the significance of impact.
- 4.4 In terms of seeking to set appropriate plant rating sound limits, the advice in BS 4142 is *“The lower the rating level is relative to the measured background sound level, the less likely is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source of having a low impact, depending on context”* (clause 11 noted’).
- 4.5 Based on the survey results at NL2 the representative background noise level for the day and night time period has been calculated as follows:

TABLE 4: Representative Background Levels

Daytime (0700-1900hrs)	Night time (2300 – 0700 hrs)
44 dB	31 dB

- 4.6 To prevent significant adverse impacts on the health and quality of life of existing noise sensitive receptors, the “rating noise level” (the predicted noise level plus any penalty for character), should not exceed the typical measured daytime and night time background noise level by more than 10 dB, and to prevent adverse harm by around 5 dB depending on context. Where the rating level does not exceed the background noise level, this is an indication of a specific sound having a low impact. The guidance in the Sussex Noise Advice is that the rating level of plant noise should not exceed background levels i.e.44 dB during day and 31 dB at night.
- 4.8 Based on experience of similar sites it is likely that the proposed noise limits can be complied with, however to reduce noise levels at night it may be ‘quiet’ plant is selected or localised screening is provided around the plant area.

Noise from delivery activity

- 4.9 HGV service vehicles will enter via the site off Perrymount Road drive into the car park and manoeuvre onto the loading bay at the southern side of the building. Goods would then be off-loaded via a level dock directly into the warehouse. The benefit of this system in terms of noise are that there is no external movement of pallets or goods. In relation to the existing residential properties the loading bay is the optimum position screened by the store building.

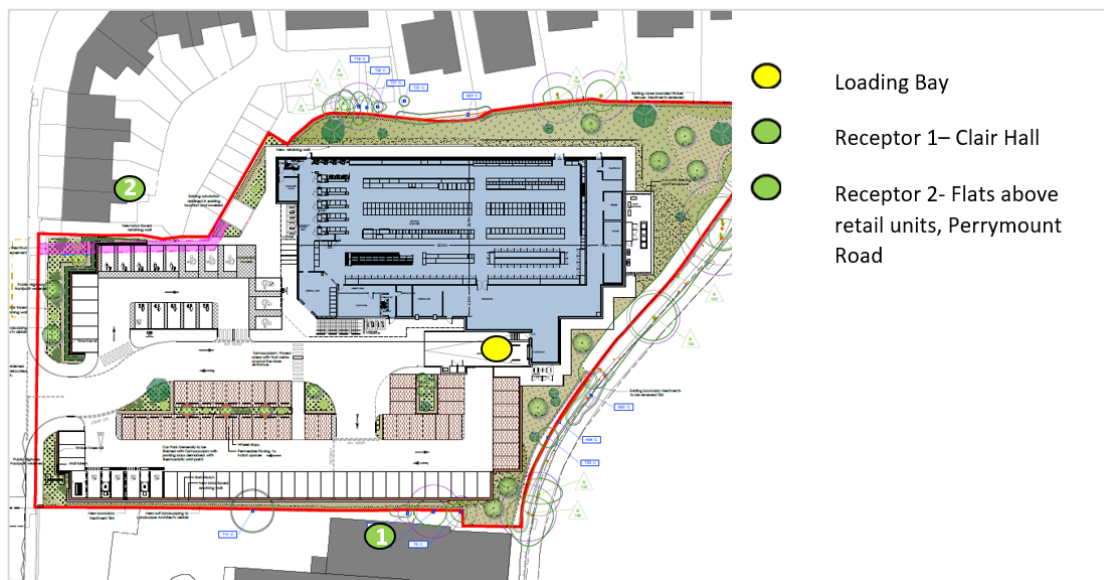
- 4.10 Noise levels of the different components of service activity have been measured at similar stores and the following maximum levels have been recorded. All measurements are normalised to 10 metres.

TABLE 5 – Service yard noise levels (10m)

Event Noise Level						
Arrival		Unloading		Departure		Overall
Duration (Mins)	L _{AeqT} (dB)	Duration (Mins)	L _{AeqT} (dB)	Duration (Mins)	L _{AeqT} (dB)	L _{AMAX} (dB) Arrival-departure/Unloading
2	67	40	58	0.5	69	75 /79

- 4.11 Based on the proposed layout the nearest noise sensitive receptors to the loading bay have been identified as shown below.

FIGURE 5: Receptor locations



- 4.12 Using the above the delivery activity levels (Table 5) predicted noise level from delivery activity has been calculated at the receptor locations shown in Figure 5 above. For Clair House only, daytime calculations have been predicted as the site is not operated during the night time period. Full details of the calculations are shown in Appendix B and summarised in Table 6 below:

TABLE 6: Predicted noise levels

Receptor	Overall Predicted Service Yard Noise Level dB		
	Day time	Night Time	
	L _{Aeq,1hr}	L _{Aeq1hr} /L _{Aeq15min} *	L _{Amx} arrival & departure/unloading
R1	47	--	--
R2	39	44	65/46

*Where T = 1 hour for comparison with WHO guidelines and daytime BS 4142 assessment, and 15 minutes for BS 4142 night time assessment

- 4.13 Aldi would typically receive deliveries between 0600 and 2300 hours, therefore, the following assessment considers the impact of deliveries during the day (0800 – 1800 hrs) at Clair House and during the early morning 0600 – 0800 hours and late evening 2100 – 2300 hours at the flats above the shops in Perrymount Road. The times have been chosen to represent the most noise sensitive times that deliveries may occur. The results of the assessment are shown in Table 7 below.

TABLE 7: BS 4142 Assessment

	Period	Specific Level L_{AeqT} ¹	Rating Level	Background Level (L_{A90}) ³	Difference
R1	0800 – 1800	47	53 ²	48	+5
R2	0600 – 0700	44	47 ⁴	44	+3
	0700 – 0800	39	42 ⁴	46	-4
	2100 – 2200	39	42 ⁴	43	-1
	2200 – 2300	39	42 ⁴	42	0

¹Specific level $L_{Aeq1hr(day)}/L_{Aeq15min(night)}$ ²+6dB feature correction for impulsivity during unloading.

³Representative background noise level for period based on measurements at NL1

⁴ +3dB for other characteristics

- 4.14 The advice in BS 4142 is the greater the difference between the rating level and background level the greater the magnitude of impact. A difference of around +10dB is an indication of a significant adverse impact, a difference of around +5dB is an indication of an adverse impact and where the rating level is below the background level the impact is considered low. Based on the above assessment noise from delivery activity during the period 0600 – 2300 hours will not cause a significant adverse impact in line with the policy aims of the NPPF.
- 4.15 As advised BS 4142 also requires that any assessment should have regard to contextual considerations, and an *“effective assessment cannot be conducted without an understanding for the reason(s) for the assessment and the context in which the sound occurs/will occur.”* This is particularly relevant in relation to the proposed retirement apartments, where mitigation measures will be included within the design of the care home.
- 4.16 Of main consideration to the existing residential properties is that neither of the of receptors identified have any outdoor amenity space. Therefore, in terms of impact it is internal level which is the main consideration rather than by how much the predicted noise level exceeds the external background. For the residential receptors identified, assuming a 10dB reduction through an open window, internal noise levels during delivery activity would be around 29 dB L_{Aeq1hr} . This is below the recommended daytime and night time internal guidelines in BS 8233 and therefore the impact is considered low.
- 4.17 To ensure there is adequate time to receive deliveries and stock shelves before the store opens the majority of deliveries will be received outside hours when Clair House is open. Whilst there may be occasional deliveries during the day, these will be low in number and typical take place for no more than 1 hour. Therefore, whilst the predicted rating level will exceed the background noise level by around 5 dB, it is not considered that this will cause unacceptable disturbance to activities within Clair House.

- 4.18 Notwithstanding, the above assessment it is recommended that deliveries outside trading hours are carried out in accordance with a delivery management plan (DMP). Such plans have been used at many stores to reduce noise levels. The DMP will include the following measures.
- No movement of goods pallets or roll cages on open areas of the service yard;
 - No audible reversing beepers to be used outside trading hours;
 - Refrigeration units should be switched off when vehicles enter the service yard;
 - Restriction on Sunday delivery hours between 0800 and 2100 hrs
- 4.19 Having regard to the contextual considerations and the mitigation measures proposed it is concluded that deliveries could be received during daytime hours (0600 – 2300 hours Monday to Saturday). As background noise levels were slightly lower on Sunday it is recommended that on Sundays deliveries will be further restricted to between 0800 and 2100 hours in accordance with the DMP suggested above.

Car Parking

- 4.20 SR has measured noise levels from existing car park activity at similar retail parks and typical noise levels at 10 metres from the boundary of the car park of 48 dB L_{Aeq1hr} during peak periods and 43 dB L_{Aeq1hr} during off-peak periods were recorded. Noise levels included all sources, vehicle movements, customer activity and loading of shopping into cars.
- 4.21 The nearest noise sensitive receptors are at circa. 10 metres from the nearest spaces and therefore predicted noise levels will be the region of 48 – 43 dB L_{Aeq1hr} . Predicted noise levels would be below the recommended WHO Community Noise Guidelines of 50 – 55 dB $L_{Aeq16hour}$ and also below existing daytime ambient (L_{Aeq}) noise levels. It is therefore concluded that the store could trade between 0700 and 2300 hours without causing adverse impact to local residents.

5.0 Summary and Conclusion

5.1 Sharps Redmore has undertaken an environmental noise assessment for a new Aldi store at Perrymount Road, Haywards Heath. The following activities have been assessed.

- Fixed mechanical plant
- Service Yard noise
- Car Parking noise

5.2 A noise survey has been carried out at a location representative of the closest residential properties to the site.

5.3 In terms of noise the following matters are relevant.

- Plant noise will be controlled by condition in accordance with the requirements of BS 4142:2014+A1:2019.
- The impact of deliveries has been assessed against national standards and concluded that deliveries could be received between 0700 and 2300 hour (Monday to Saturday). Sunday deliveries would be restricted in accordance with the agreed DMP.
- Noise from car parking will be below the WHO daytime and the store could trade between 0700 and 2300 hours without causing adverse impact to adjacent noise sensitive properties.

5.4 Taking into account the above and having assessed the main noise impacts from the development against national standards it is concluded that the proposed Aldi store can be developed as outlined within the report without causing significant impact or disturbance as advised by the National Planning Policy Framework.

APPENDIX A

SITE LAYOUT



The Harris Group Ltd does not accept liability for any deviation to our drawings or specification. This Drawing is copyright and may not be reproduced in whole or part without written authority.

Subject to confirmation of legal boundaries, underground services locations, easements & other site constraints.

This drawing has been based on ordnance survey mapping and the following drawings:

Berry Geomatics, dwg 54/24 issued 30/09/24

Barrell Tree Consultancy, dwg 24107-1B issued 26/09/24

0 5 10 15 20 25m

SCALE 1:500

Rev	Date	Description	Drawn	Chk'd
PO1	26.11.24	Highways and landscape update	HWG	ERJ

ALDI FOOD STORE:

Ground Floor		
Proposed	2041m ² (GEA)	
Proposed	1940m ² (GIA)	

External Areas:		
Parking aisles	6m & 7.5	
Parking spaces	2.5m x 5.0m	
Parking spaces	97	
	Inc. 6 Accessible	
	5 Parent & Child	
	6 EV + 20 Future	

Cycle Parking	20 Customer Space	
	10 Staff Spaces	

- Key:**
- Aldi site area (Red line) 1.97 Acres; 0.7977 Hectares
 - Electrical Easement
 - Permeable Paving
 - Proposed new trees

For details of the Landscaping scheme refer to Smeeden Foreman drawing: 19971-SFW-XX-XX-DR-L-1001

THE HARRIS PARTNERSHIP

www.harrispartnership.com

Wakefield Manchester Milton Keynes Reading London Harrogate

Architecture Masterplanning Interior Design

Client

Aldi Stores Ltd

Project Title

Proposed Redevelopment

Sussex House

Perrymount Road

Haywards Heath, RH16 1DN

Drawing Title						
Proposed Site Plan						
Drawn	Checked	Scale @A3	BIM Status		Date	
HWG	ERJ	1:500	NA		11/24	
Drawing Status			Rev.	THP Project No		
Planning			PO1	19971		
Project No.	Originator	Volume	Level	Type	Role	Number
19971	THPK	00	XX	DR	A	0120

APPENDIX B

DELIVERY CALCULATIONS

Appendix B: Delivery Calculations

Assessment project: Aldi Rye	Delivery component		
	Arrival	Unloading	Departure
Delivery noise activity - predicted ambient noise levels ($L_{Aeq T}$) *			
Closest residential property address:	Bungalows (R1)		
Source noise level at 10 metres $L_{Aeq T}$	67	58	69
Time - minutes	2	40	0.5
Distance between noise source and residential property in metres	30	20	30
Screening attenuation dB	8.0	12.0	8.0
Convert to 1 hour - dB	-14.8	-1.8	-20.8
Convert to 15 min - dB	-8.8	0.0	
Distance attenuation correction - dB	-9.5	-6.0	-9.5
Activity $L_{Aeq 1 hr}$	34.7 dB	38.2 dB	30.7 dB
Activity $L_{Aeq 15min}$	40.7 dB	40.0 dB	
Overall delivery activity noise day (arrival, unloading, departure) $L_{Aeq 1 hr}$	40 dB		
Overall delivery activity noise night (arrival, unloading) $L_{Aeq 15min}$		43 dB	
Delivery noise activity - predicted peak noise levels (L_{Amax})			
Source noise level at 10 metres L_{Amax}	75	79	75
Distance between noise source and residential property in metres	30	20	30
Screening attenuation dB	8.0	12.0	8.0
Distance attenuation correction - dB	-9.5	-6.0	-9.5
Peak noise level L_{Amax}	57 dB	61 dB	57 dB

*Where T = 1 hour for comparison with WHO guidelines and daytime BS 4142 assessment and T - 15 min for night time BS 4142 assessment

Assessment project: Aldi Rye	Delivery component		
	Arrival	Unloading	Departure
Delivery noise activity - predicted ambient noise levels ($L_{Aeq T}$) *			
Closest residential property address:	Winchelsea Road - 2nd Floor (R2)		
Source noise level at 10 metres $L_{Aeq T}$	67	58	69
Time - minutes	2	40	0.5
Distance between noise source and residential property in metres	70	60	60
Screening attenuation dB	5.0	5.0	5.0
Convert to 1 hour - dB	-14.8	-1.8	-20.8
Convert to 15 min - dB	-8.8	0.0	
Distance attenuation correction - dB	-16.9	-15.6	-15.6
Activity $L_{Aeq 1 hr}$	30.3 dB	35.7 dB	27.6 dB
Activity $L_{Aeq 15min}$	36.3 dB	37.4 dB	
Overall delivery activity noise day (arrival, unloading, departure) $L_{Aeq 1 hr}$	37 dB		
Overall delivery activity noise night (arrival, unloading) $L_{Aeq 15min}$		40 dB	
Delivery noise activity - predicted peak noise levels (L_{Amax})			
Source noise level at 10 metres L_{Amax}	75	79	75
Distance between noise source and residential property in metres	60	80	60
Screening attenuation dB	5.0	5.0	5.0
Distance attenuation correction - dB	-15.6	-18.1	-15.6
Peak noise level L_{Amax}	54 dB	56 dB	54 dB

*Where T = 1 hour for comparison with WHO guidelines and daytime BS 4142 assessment and T - 15 min for night time BS 4142 assessment

Assessment project: Aldi Rye	Delivery component		
	Arrival	Unloading	Departure
Delivery noise activity - predicted ambient noise levels ($L_{Aeq T}$) *			
Closest residential property address:	Proposed assisted living (R3)		
Source noise level at 10 metres $L_{Aeq T}$	67	58	69
Time - minutes	2	40	0.5
Distance between noise source and residential property in metres	60	80	60
Screening attenuation dB			
Convert to 1 hour - dB	-14.8	-1.8	-20.8
Convert to 15 min - dB	-8.8	0.0	
Distance attenuation correction - dB	-15.6	-18.1	-15.6
Activity $L_{Aeq 1 hr}$	36.7 dB	38.2 dB	32.6 dB
Activity $L_{Aeq 15min}$	42.7 dB	39.9 dB	
Overall delivery activity noise day (arrival, unloading, departure) $L_{Aeq 1 hr}$	41 dB		
Overall delivery activity noise night (arrival, unloading) $L_{Aeq 15min}$		45 dB	
Delivery noise activity - predicted peak noise levels (L_{Amax})			
Source noise level at 10 metres L_{Amax}	75	79	75
Distance between noise source and residential property in metres	60	80	60
Screening attenuation dB			
Distance attenuation correction - dB	-15.6	-18.1	-15.6
Peak noise level L_{Amax}	59 dB	61 dB	59 dB

*Where T = 1 hour for comparison with WHO guidelines and daytime BS 4142 assessment and T - 15 min for night time BS 4142 assessment

APPENDIX C

ACOUSTIC TERMINOLOGY

Appendix C Acoustic Terminology

- C1 Noise, defined as unwanted sound, is measured in units of decibels, dB. The range of audible sounds is from 0 dB to 140 dB. Two equal sources of sound, if added together will result in an increase in level of 3 dB, i.e. 50 dB + 50 dB = 53 dB. Increases in continuous sound are perceived in the following manner:
- 1 dB increase - barely perceptible.
 - 3 dB increase - just noticeable.
 - 10 dB increase - perceived as twice as loud.
- C2 Frequency (or pitch) of sound is measured in units of Hertz. 1 Hertz (Hz) = 1 cycle/second. The range of frequencies audible to the human ear is around 20Hz to 18000Hz (or 18kHz). The capability of a person to hear higher frequencies will reduce with age. The ear is more sensitive to medium frequency than high or low frequencies.
- C3 To take account of the varying sensitivity of people to different frequencies a weighting scale has been universally adopted called "A-weighting". The measuring equipment has the ability automatically to weight (or filter) a sound to this A scale so that the sound level it measures best correlates to the subjective response of a person. The unit of measurement thus becomes dBA (decibel, A-weighted).
- C4 The second important characteristic of sound is amplitude or level. Two units are used to express level, a) sound power level - L_w and b) sound pressure level - L_p . Sound power level is an inherent property of a source whilst sound pressure level is dependent on surroundings/distance/directivity, etc. The sound level that is measured on a meter is the sound pressure level, L_p .
- C5 External sound levels are rarely steady but rise or fall in response to the activity in the area - cars, voices, planes, birdsong, etc. A person's subjective response to different noises has been found to vary dependent on the type and temporal distribution of a particular type of noise. A set of statistical indices have been developed for the subjective response to these different noise sources.
- C6 The main noise indices in use in the UK are:
- L_{A90} : The sound level (in dBA) exceeded for 90% of the time. This level gives an indication of the sound level during the quieter periods of time in any given sample. It is used to describe the "background sound level" of an area.
 - L_{Aeq} : The equivalent continuous sound level in dBA. This unit may be described as "the notional steady noise level that would provide, over a period, the same energy as the intermittent noise". In other words, the energy average level. This unit is now used to measure a wide variety of different types of noise of an industrial or commercial nature, as well as aircraft and trains.

LA10: The sound level (in dBA) exceeded for 10% of the time. This level gives an indication of the sound level during the noisier periods of time in any given sample. It has been used over many years to measure and assess road traffic noise.

LAMAX The maximum level of sound measured in any given period. This unit is used to measure and assess transient noises, i.e. gun shots, individual vehicles, etc.

- C7** The sound energy of a transient event may be described by a term SEL - Sound Exposure Level. This is the L_{Aeq} level normalised to one second. That is the constant level in dBA which lasting for one second has the same amount of acoustic energy as a given A weighted noise event lasting for a period of time. The use of this unit allows the prediction of the L_{Aeq} level over any period and for any number of events using the equation;

$$L_{AeqT} = SEL + 10 \log n - 10 \log T \text{ dB.}$$

Where

n = Number of events in time period T.

T = Total sample period in seconds.

- C8** In the open, known as free field, sound attenuates at a rate of 6 dB per each doubling of distance. This is known as geometric spreading or sometimes referred to as the Inverse Square Law. As noise is measured on a Logarithmic scale, this attenuation in distance = $20 \log$ (ratio of distances), e.g. for a noise level of 60 dB at ten metres, the corresponding level at 160 metres is:

$$60 - 20 \log \frac{160}{10} = 60 - 24 = 36 \text{ dB}$$