SHARPS REDMORE

ACOUSTIC CONSULTANTS • Established 1990

Report

Land at Norway Lane, Littlehampton

Noise Impact Assessment

Prepared by
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Date April 2025

Project No 2422899

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

Contents

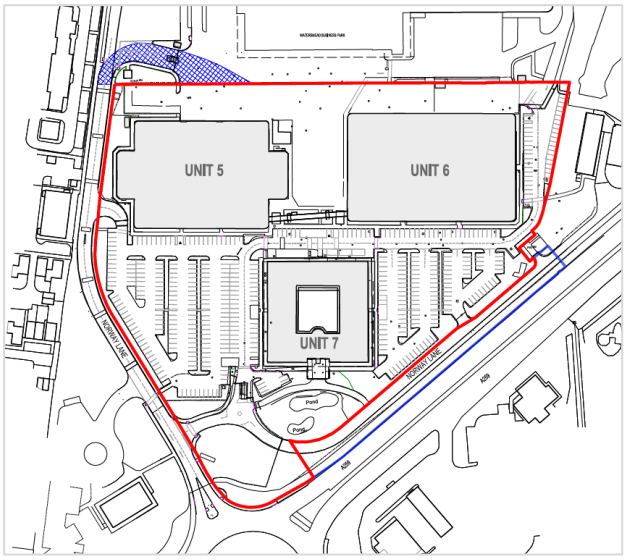
Appendices

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) have been instructed by Hallway Properties Ltd to carry out a noise assessment for land at Norway Lane, Littlehampton. The site location is shown in Figure 1 below:

FIGURE 1: Site Location



1.2 The site is a vacant business park comprising of an office (Unit 7) and two distribution warehouses (Units 5 and 6). Planning permission is being sought for redevelopment of the site, including conversion, refurbishment and re-elevation of Units 5 and construction of retail (food and non-food), leisure and food & beverage units (Units Class E) together with car parking, access, loading areas, landscaping and associated works. Unit 7 (the former Body Shop headquarters) will be demolished to facilitate the proposed development and as a first enabling phase. The demolition of Unit 7 forms part of an earlier Prior Notification of demolition application (ref.LU/27/25/DEM). The proposed layout is shown in Appendix A to this report.

1.3 The purpose of this report is to assess the impact of noise from operation of the proposed development on any noise sensitive properties in the area. For the purposes of the assessment these are considered to be the residential properties to the west of the site.

1.4 A guide to the assessment methodology and criteria used within this report is included in section 2.0. Details of the noise survey to establish the existing noise climate and to determine suitable design criteria at the closest residences are presented in section 3.0.

1.5 Sections 4.0 contains an assessment of the impact of noise from the development on the adjacent noise sensitive buildings. Based on experience of similar sites the following noise impacts have been identified.

- Noise from mechanical services plant;
- Noise from car parking activity; and
- Noise from servicing activity

1.6 A guide to the acoustic terminology used in this report is displayed in Appendix B.

2.0 Assessment Methodology and Criteria

National Policy

2.1 The National Planning Policy Framework (NPPF), December 2024, 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 198 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 Guidance on the interpretation of the policy aims contained within the NPPF is contained within National Planning Practice 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 present	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 or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, 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 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 and/or attitude, 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
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

2.3 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."*

2.4 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."

2.5 Taking an overview of national policy it is clear that when considering the impact of noise, one must consider the significance of any impact. The presence of an adverse impact in itself is not sufficient to refuse permission.

Local Policy

2.6 Current local policy is contained within the Arun Local Plan 2011-2031 (July 2018) Policy QE DM1 'Noise Pollution' which in relation to new noise generating development states that a noise report should provide accurate information about existing noise environment and the likely impact of the proposed development upon noise environment. The report must demonstrate the development meets appropriate national and local standards for noise, as set out in Annex 1 of the Planning Noise Advice Document Sussex. This is discussed in more detail below.

Guidance

2.7 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

2.8 There are a number of guidance documents that contain recommended guideline noise values. These are discussed below.

2.9 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.

2.10 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.

2.11 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.

2.12 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.

2.13 The WHO LOAEL guideline values are summarised in the following table.

TABLE 2

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)
BS 8233:2014 "Sound Insulation and noise reduction for buildings"	L_{AeqT} = 55 dB	Upper limit for external steady noise. (Gardens and balconies).
	L_{AeqT} = 50 dB	Desirable limit for external steady noise. (Gardens and balconies).
	L_{AeqT} = 35 dB	Resting conditions for living rooms during the day. (Internal – steady noise)
	L_{AeqT} = 40 dB	Dining, dining room day. (Internal – steady noise)

	L_{AeqT} = 35 dB	Good resting/sleeping conditions for bedrooms, daytime (Internal – steady noise)
	L_{Aeq} = 30 dB	Sleeping, bedroom night (internal – steady noise)

2.14 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.

Changes in noise level

2.15 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.

2.16 The following table shows the response to changes in noise level (known as the Semantic Scale).

TABLE 3: Changes in noise level

Change in noise level L_{AeqT} 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

2.17 As discussed, this BS described a method for rating and assessing sound of industrial and/or commercial nature according to the following summary process:

i) 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.

ii) By considering the noise impact against the context in which it is placed.

2.18 In terms of context at night the main issue will be noise from bangs and crashes (L_{Amax}) affecting sleep disturbance. During the night time period generally people are inside their properties. Therefore, the outcome of a BS 4142 assessment which considers the difference between the external background noise level at the receptor and the external rating level of the specific noise source under consideration, does not reflect the true nature of the noise impact at the receptors. Therefore, regard should be had not just to the difference between the background level and rating noise level, but also to the absolute level of noise from servicing activity and how it compares to the WHO Guidelines for Community Noise.

Local Design Guidance

2.19 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

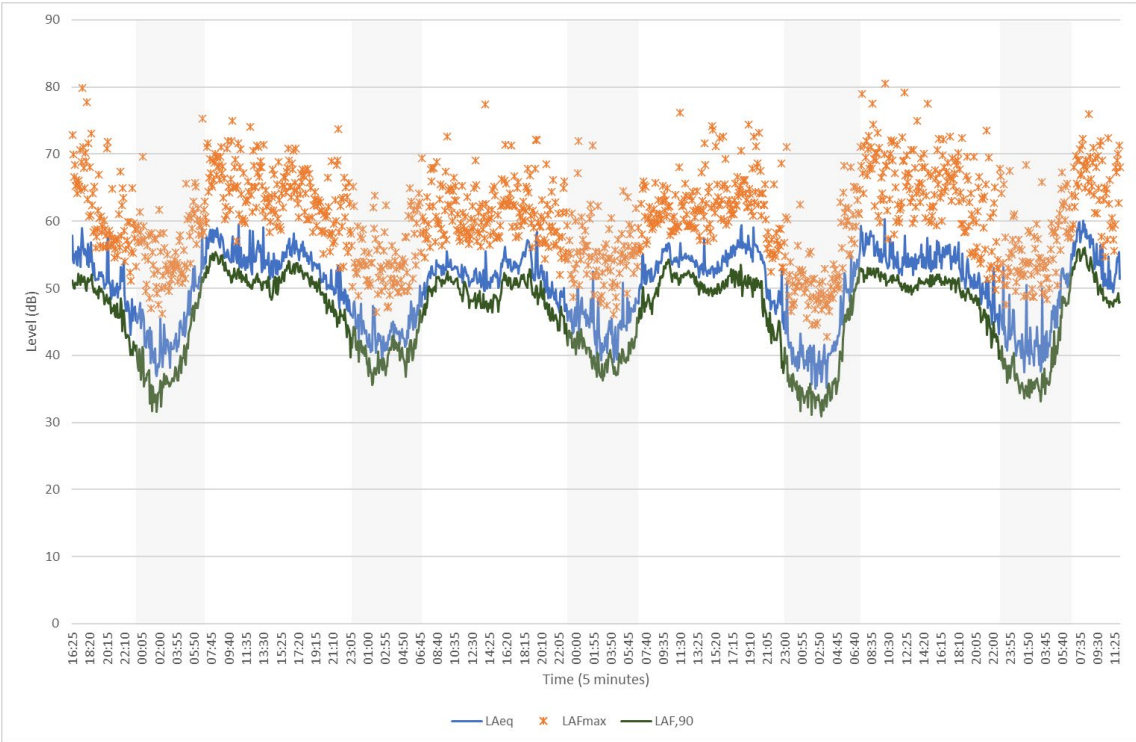
3.1 To determine existing noise levels a noise survey was carried out between 9th and 14th January 2025 to determine the existing noise levels at noise sensitive receptors close to the site. Measurements were taken at a location as shown in Figure 2 below. The measurement location was chosen to represent the nearest noise sensitive properties to the site.

FIGURE 2: Monitoring Location

3.2 Measurements were taken continuously from 16:30 hours on Thursday 9th until Tuesday 14th January. Measurements were taken using a Norsonic type 1 sound level meter which was calibrated before and after the survey with no drift in accuracy noted. Weather conditions during the survey were dry with light winds and suitable for taking sound level measurements.

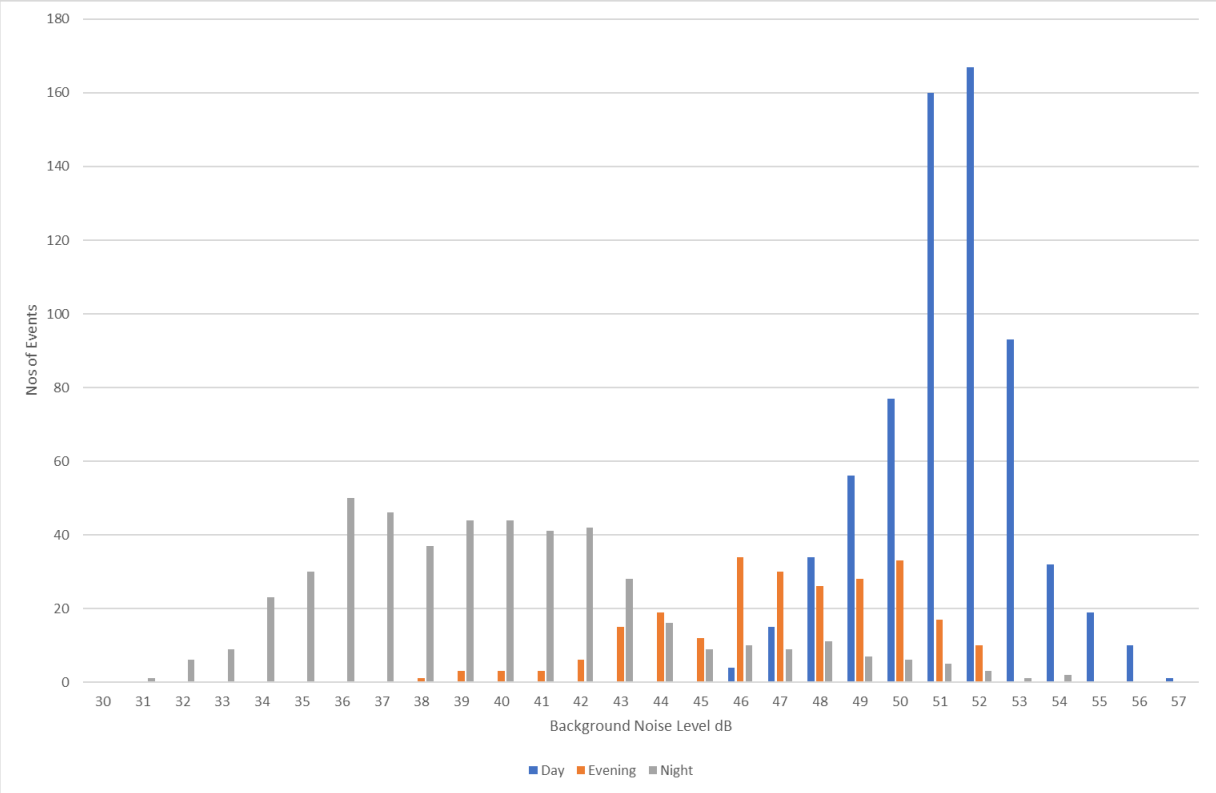
3.3 Details of the survey results are shown in Figure 3 below:

FIGURE 3: Survey Results 9 – 14 January 2025



3.4 Existing noise levels are dominated by road traffic noise (RTN). Based on the survey data background noise levels have been determined using a modal analysis of measurements recorded during the survey. Typical background noise levels during the day, evening and night time periods are 52 dB, 46dB and 36 dB, respectively.

FIGURE 4: Background noise levels



4.0 Noise Assessment

4.1 Planning permission is being sought for redevelopment of the site, including conversion, refurbishment and re-elevation of Units 5 and 6 and construction of retail (food and non food), leisure and food and beverage units (Use Class E) together with associated carparking, access and loading areas. Based on experience of similar schemes the main noise considerations will be as follows:

- Noise from fixed plant and machinery;
- Noise from car parking activity; and
- Noise from servicing.

Noise from mechanical services plant

4.2 The choice and selection of plant will not be made until a later stage in the design process and therefore the precise details of the mechanical services plant and refrigeration equipment (type and noise signature) are not known at this stage. However, the fixed plant may consist of refrigeration and condenser units, air handling units, extract fans, boilers, and emergency generators.

4.3 With regard to the assessment of industrial noise sources BS 4142:2014 enables the resultant noise from new equipment to be compared to the existing background noise level (L_{A90}) of an area to assess the likelihood of complaints.

4.4 The closest noise sensitive properties to the development are the residential properties to the west of the site, in Windroos Drive and Gratwicke Drive.

4.5 In terms of seeking to set appropriate plant rating sound limits, the advice in BS 4142:2014 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').

4.6 For the purposes of the assessment BS 4142:2014 requires that the background noise level should be representative of the particular circumstances and the period of interest. The guidance in the Sussex Noise Advice is that the rating level should not exceed the background level. Based on background noise levels determined in section 3.0 it is recommended that the rating level of noise from plant does not exceed the following criteria at the nearest noise sensitive receptors:

- Day time (0700 – 1900 hours) – 51 dB
- Evening (1900 – 2300 hrs) – 46 dB; and
- Night time (2300 – 0600 hrs) - 36 dB.

4.7 Based on experience of similar sites, it is likely that the proposed noise limits can be achieved, however, to reduce noise levels at night it may be necessary to include localised mitigation such as screening around plant areas or in-line attenuators to air handling units.

Noise from car parking

4.8 The stores will be served by a car park of 426 spaces at the front of the site, with access in and out of car parks via the existing site entrances/exits off Norway Lane. The location of the car park is similar to the existing parking arrangements at the site.

4.9 SR have undertaken many noise surveys of noise levels at the boundaries of retail/commercial car parks, which show a range of noise level, depending on the level of activity, from L_{Aeq1hr} = 43 – 48 dB at a distance of 10 metres. Typical peak noise levels from car door/boot slams were found to be 68 dB L_{AFmax} at 10 metres.

4.10 The nearest noise sensitive receptors to the site are the residential properties to the west. These properties are approximately 30m from the boundary of the car park. Assuming a baseline source noise level of 48 dB L_{Aeq1hr} and 43 dB L_{Aeq1hr} at night the predicted noise levels at the nearest residential properties have been calculated.

TABLE 4: Assessment of car park noise

	Day	Night	
	L_{Aeq1hr} dB	L_{Aeq1hr} dB	L_{Amax}
Baseline at 10 metres	48 dB	43 dB	68 dB
Distance attenuation 20 log($^{10}/_{30}$) = 10 dB	38 dB	33 dB	58 dB
WHO Guideline Values	55 dB	45 dB	60 dB

4.10 Predicted noise from car park activity will be significantly below the WHO daytime and night time guideline values. Predicted noise levels would also be well below the existing ambient and maximum noise levels measured and therefore noise from car parking will not cause an adverse impact in line with national and local policy aims. It is therefore concluded there is no technical noise reason to restrict trading hours of the site.

4.11 Considering the location of the site and the distance to the nearest noise sensitive properties it is considered that the above noise levels can be achieved.

<u>Noise from servicing activity</u>

4.12 The retail units will be serviced at the rear of the stores with vehicles accessing the service yard through a dedicated access off Norway Lane. The servicing arrangements are similar to the arrangements for the existing warehouse units.

4.13 In determining the noise impact from servicing activity it has been assumed each unit will receive one delivery/hour with goods unloaded off the rear of a tail gate or via scissor lift. In practice this will over estimate the impact of servicing activity as it is highly unlikely that each unit will receive a delivery within the same one-hour period.

4.14 Noise levels of the different components of service activity have been measured at many retail units including similar stores to that proposed. Noise source levels derived from these surveys has been used in the assessment to determine noise levels at the nearest noise sensitive properties, this being the four storey residential apartments in Gratwicke Drive. Full details of the calculations are presented in Appendix C and summarised in Table 5 and 6 below.

TABLE 5: Predicted noise levels (dB)-servicing activity

	Noise Level dB						
	Unit A1	Unit A2	Unit A3	Unit A4	Unit A5	Unit A6	Overall
Daytime L_{Aeq1hr}	45	40	27	27	35	32	47
Night $L_{Aeq15min}$	49	44	31	31	38	36	51
Night L_{Afmax}	67	62	49	49	56	50	67

4.15 Using the above calculations an assessment of delivery activity noise levels using BS 4142 has been carried out. For the purposes of the assessment no feature correction has been applied as noise from service yard activity will not be out of character with existing use of the site.

TABLE 6: BS 4142 Assessment – Daytime (0700 – 2300 hrs) Gratwicke Drive

Period	Rating Level	Background Level	Difference
Day (0700 – 1900 hrs)	47 dB	51 dB	-4 dB
Evening (1900 – 2300 hrs)	47 dB	46 dB	+1 dB

4.16 As advised above no feature correction has been applied in this case as noise from servicing activity would not be significantly different from the character of the existing noise climate. However, if a 3dB feature correction was applied for impulsivity for bangs and crashes associated with delivery activity the assessment conclusions would remain the same i.e. low impact during day and potential adverse impact during the evening period.

4.17 At night, based on the initial assessment there would be a potential significant adverse impact subject to context.

Contextual Considerations

4.18 It is clear from BS 4142 that when assessing noise from industrial/commercial premises regard should be had not just to the difference between the background level and rating noise level, but also in context of the site and when the noise impact occurs, this is highlighted in Section 11 of the standard states "*An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is* ***essential*** *to place the sound in context" (*emphasis added)."

4.19 Section 11 also provides examples of what contextual matters may be considered as part of the assessment, this includes the character and level of the existing noise environment. Specific to this application 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."*

4.20 The main contextual consideration during the night time period is that, generally, people are inside their properties. Therefore, as advised in the noise assessment at night the critical factor is the maximum (L_{Afmax}) of vehicles driving along the access road and being unloaded and the relation to recognised sleep disturbance criteria.

4.21 As described in section 1.0 of this report the site is currently a vacant business park comprising of an office (Unit 7) and two distribution warehouses (Units 5 and 6). There is also a large warehouse unit directly adjacent to the site which is accessed via the same entrance off Norway Lane. SR understands that there are no restrictions on operating hours of the warehouse units. Noise from unloading/loading activities, including maximum noise levels, L_{AFmax}, would be no greater or different in character to the existing permitted use of the site.

4.22 The residential properties would have been designed and built with mitigation measures to take into account noise from the existing use of the warehouse use of the site. It would therefore follow that these mitigation measures would also protect residents against noise from the proposed use and the impact of noise from servicing activity would therefore be no greater than the existing unrestricted use of the site.

4.23 Considering the contextual considerations, there is no technical reason to restrict servicing activity during the night time period.

5.0 Summary and Conclusions

5.1 Sharps Redmore has carried out a detailed assessment of noise for a new non-food/food retail scheme at land at Norway Lane, Littlehampton.

5.2 A baseline noise survey has been conducted to determine existing noise levels and having assessed the impact of noise from the proposal against national and local policy aims the following is concluded:

- In accordance with the Sussex Council design guidance on noise, fixed mechanical plant (including refrigeration plant) will be designed to ensure that there is no overall increase in existing background noise levels at the nearest noise sensitive receptors;
- Noise from car parking will be well below the recommended daytime and night time WHO Guidelines and also well below existing noise levels measured. The site can therefore trade 24 hours a day without causing adverse impact to local residents; and
- Having regard to the guidance in BS 4142 and contextual considerations (including extant use of site and adjacent warehouse) the impact of noise from servicing activity will be no greater than current unrestricted use of the site. Therefore, it is concluded that the proposed site could receive deliveries at any time without causing significant adverse impact to local residents.

5.3 It is therefore concluded that noise from the proposal will not cause adverse noise impacts in line with the national policy aims of the NPPF and Arun Local Plan.

APPENDIX A

PROPOSD SITE LAYOUT

SITE SPECIFIC HAZARDS

IN ACCORDANCE WITH THE REQUIREMENTS OF THE CDM REGULATIONS 2015 THE FOLLOWING SIGNIFICANT RESIDUAL HAZARDS HAVE NOT BEEN DESIGNED OUT OF THIS PROJECT AND MUST BE TAKEN INTO CONSIDERATION BY CONTRACTORS PLANNING TO UNDERTAKE THE WORKS SHOWN ON THIS DRAWING:

SCALE 1:500

0m 5 10 15 20 25 30

N

LEGEND:

- OWNERSHIP BOUNDARY
- PLANNING BOUNDARY (4.0 HECTARES)
- CAT U TREES, REFER TO FPCR ENVIRONMENT AND DESIGN LTD TREE SURVEY PLAN
- CAT B TREES, REFER TO FPCR ENVIRONMENT AND DESIGN LTD TREE SURVEY PLAN
- CAT C TREES, REFER TO FPCR ENVIRONMENT AND DESIGN LTD TREE SURVEY PLAN
- DASHED RED LINE DENOTES EXTENTS OF FORMER BUILDINGS
- DENOTES BUILDING
- DENOTES LANDSCAPING
- DENOTES PAVING
- DENOTES ASPHALT ROAD
- DENOTES ASPHALT PARKING
- DENOTES FOOTPATH IN RESIN BOUND GRAVEL
- DENOTES FOOTPATH IN TARMAC
- DENOTES HISTORY TRAIL AROUND THE SITE REFER TO DRAWING '11631-LH-HISTORY-TRAIL' FOR FURTHER INFORMATION
- DENOTES PASSIVE EV BAYS FOR FUTURE CONNECTIONS
- BENCHES
- WASTE BINS

NOTES:

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL CONSULTANTS AND SPECIALIST DRAWINGS, AND SPECIFICATIONS.

OWNERSHIP BOUNDARY BASED UPON HM LAND REGISTRY TITLE PLAN PROVIDED BY THE CLIENT.

THIS DRAWING IS BASED ON:

1) TOPOGRAPHICAL SURVEY INFORMATION PROVIDED BY:
CMS LTD DRAWING REF:
"CMS-205-07"
DATE: JUNE 2024.

2) OS INFORMATION

3) TREE SURVEY BY: FPCR ENVIRONMENT AND DESIGN LTD
DRAWING REF:
"12641-T-01 A" DATE: JUNE 2024.

4) FLOOR PLANS SURVEY BY: CMS LTD
DRAWING REF: "CMS-205-01,02,03,04"
DATE: JUNE 2024.

PROPOSED LEVELS AND FINISHED FLOOR LEVELS TO BE AGREED WITH DRAINAGE AND STRUCTURAL ENGINEER.

DIMENSIONS GIVEN ON THIS DRAING ARE APPROXIMATE ONLY AND MUST BE CHECKED ON SITE FOR ALL PURPOSES.

REFER TO LANDSCAPE ARCHITECT'S PROPOSALS.

REFER TO HIGHWAYS ENGINEER'S PROPOSALS.

SCHEDULE OF ACCOMMODATION:

UNIT A1:	1,722 SQ.M. (18,535 SQ.FT.)
UNIT A2:	2,414 SQ.M. (25,986 SQ.FT.)
UNIT A3:	140 SQ.M. (1,500 SQ.FT.)
UNIT A4:	929 SQ.M. (10,000 SQ.FT.)
UNIT A5:	2,066 SQ.M. (22,240 SQ.FT.)
UNIT A6:	1,020 SQ.M. (10,979 SQ.FT.)
UNIT A7:	1,027 SQ.M. (11,057 SQ.FT.)
UNIT A8:	508 SQ.M. (5,468 SQ.FT.)
UNIT A9:	507 SQ.M. (5,457 SQ.FT.)
TOTAL:	10,333 SQ.M. (111,222 SQ.FT.)

CAR PARKING SCHEDULE

STANDARD BAYS : 337
PASSIVE EV BAYS: 62
ACCESSIBLE BAYS : 30
PARENT AND CHILD BAYS: 28
ELECTRIC VEHICLE BAYS : 20

STAFF PARKING: 9

TOTAL BAYS : 424 (EXC. PASSIVE EV BAYS)

MOTORCYCLE PARKING: 12

CYCLE PARKING: 70 SPACES

REV.	DATE	NOTES	INIT.
C	04.04.25	SITE PLAN UPDATED	EDD
B	26.03.25	SITE PLAN UPDATED	EDD/ AM
A	20.03.25	SITE PLAN UPDATED	EDD

CLIENT / PROJECT

HALLWAY PROPERTIES LIMITED
LAND AT NORWAY LANE
LITTLEHAMPTON

DRAWING TITLE

PROPOSED SITE PLAN

STATUS

PLANNING

DATE	DRAWN	SCALE @ A1
28/02/25	EDD	1:500

PROJECT NUMBER	UNIT / BLOCK	CI / SFB CODE	TYPE & NUMBER	REVISION LETTER
11631			PL	108 C

Site Location Plans	L	GA Plans	P	Elevations	E
Sections	S	Details	D	Prelim Colour	C

THE RATCLIFFE GROVES PARTNERSHIP

MANCHESTER
105 MANCHESTER ROAD
BURY LANCASHIRE BL9 0TD
T. 0161 797 6000 E. manchester@rgp.uk.com
www.rgp.uk.com

LONDON
19 BEDFORD ROW
LONDON WC1R 4EB
T. 020 7600 6666 E. london@rgp.uk.com

RGP architects

APPENDIX B

ACOUSTIC TERMINOLOGY

Ambient noise:

The totally encompassing sound in a given situation at a given time. Most often described in terms of the index L_{AeqT}.

Atmospheric absorption:

The excess acoustic attenuation, over and above that caused by distance attenuation, due to the interaction of an acoustic wave with air molecules.

A-weighting:

A frequency weighting which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Units may be denoted as dB(A) or as sound pressure levels L_{pA} in dB. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound.

Background noise:

See $L_{A90.}$

Correction (for characteristic features of noise source):

A 5 dB penalty applied to the specific noise level if the noise being assessed "contains a distinguishable, discrete continuous note", contains "distinct impulses", or is "irregular enough to attract attention" (ref BS 4142:1997).

Decibel (dB):

A unit of level 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 only perceptible under controlled conditions.

Façade noise level:

The noise level adjacent to the façade of a building, usually at a distance of 1 metre.

Free-field noise level:

The noise level away from the façade of a building or other structure.

Hertz (Hz):

Unit of frequency, equal to one cycle per second. Frequency is related to the pitch of a sound.

L_{A10T} : The A weighted level of noise exceeded for 10% of the specified measurement period, T. It gives an indication of the upper limit of fluctuating noise such as that from road traffic. $L_{A10,18hr}$ is the arithmetic average of the 18 hourly $L_{A10,1hr}$ values from 0600 hrs to 2400 hrs.

L_{A90T} : The A weighted noise level exceeded for 90% of the specified time period, T. In BS 4142:1997 it is used to define background noise level.

L_{AeqT} : 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. This period is taken to be 16 hours (0700 hrs to 2300 hrs) and 8 hours (2300 to 0700 hrs) to describe day and night, in PPG 24 L_{AeqT} is used to describe many types of noise and can be measured directly with an integrating sound level meter.

SEL or L_{AE}: The sound exposure level is the A-weighted sound energy produced by a discrete noise event averaged over one second, no matter how long the event actually took. This allows for comparisons to be made between different noise events which occur for different lengths of time.

APPENDIX C

DELIVERY CALCULATIONS

Appendix C: Delivery Calculations

Table C1: Unit A1

Assessment project: Unit A1	Delivery component		
	Arrival	**Unloading**	**Departure**
Delivery noise activity - predicted ambient noise levels ($L_{Aeq\ T}$) *			
Closest residential property address:	**Gratwicke Drive - Fourth Storey**		
Source noise level at 10 metres $L_{Aeq\ T}$	67	58	69
Time - minutes	2	30	0.5
Distance between noise source and residential property in metres	40	40	40
Screening attenuation dB	0.0	0.0	0.0
Convert to 1 hour - dB	-14.8	-3.0	-20.8
Convert to 15 min - dB	-8.8	0.0	
Distance attenuation correction - dB	-12.0	-12.0	-12.0
Activity $L_{Aeq\ 1\ hr}$	40.2 dB	42.9 dB	36.2 dB
Activity LAeq15min	46.2 dB	46.0 dB	57.0 dB
Overall delivery activity noise day (arrival, unloading, departure) $L_{Aeq\ 1\ hr}$		**45 dB**	
Overall delivery activity noise night (arrival, unloading) $L_{Aeq\ 15min}$		**49 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	40	40	40
Screening attenuation dB	0.0	0.0	0.0
Distance attenuation correction - dB	-12.0	-12.0	-12.0
Peak noise level L_{Amax}	**63 dB**	**67 dB**	**63 dB**

Table C2: Unit A2

Assessment project: Unit A2	Delivery component		
	Arrival	**Unloading**	**Departure**
Delivery noise activity - predicted ambient noise levels ($L_{Aeq\ T}$) *			
Closest residential property address:	**Gratwicke Drive - Fourth Storey**		
Source noise level at 10 metres $L_{Aeq\ T}$	67	58	69
Time - minutes	2	30	0.5
Distance between noise source and residential property in metres	73	73	73
Screening attenuation dB	0.0	0.0	0.0
Convert to 1 hour - dB	-14.8	-3.0	-20.8
Convert to 15 min - dB	-8.8	0.0	
Distance attenuation correction - dB	-17.3	-17.3	-17.3
Activity $L_{Aeq\ 1\ hr}$	35.0 dB	37.7 dB	30.9 dB
Activity LAeq15min	41.0 dB	40.7 dB	51.7 dB
Overall delivery activity noise day (arrival, unloading, departure) $L_{Aeq\ 1\ hr}$		**40 dB**	
Overall delivery activity noise night (arrival, unloading) $L_{Aeq\ 15min}$		**44 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	73	73	73
Screening attenuation dB	0.0	0.0	0.0
Distance attenuation correction - dB	-17.3	-17.3	-17.3
Peak noise level L_{Amax}	**58 dB**	**62 dB**	**58 dB**

Table C3: Unit A3

Assessment project: Unit A3	Delivery component		
	Arrival	**Unloading**	**Departure**
Delivery noise activity - predicted ambient noise levels ($L_{Aeq\ T}$) *			
Closest residential property address:	**Gratwicke Drive - Fourth Storey**		
Source noise level at 10 metres $L_{Aeq\ T}$	67	58	69
Time - minutes	2	30	0.5
Distance between noise source and residential property in metres	105	105	105
Screening attenuation dB	10.0	10.0	10.0
Convert to 1 hour - dB	-14.8	-3.0	-20.8
Convert to 15 min - dB	-8.8	0.0	
Distance attenuation correction - dB	-20.4	-20.4	-20.4
Activity $L_{Aeq\ 1\ hr}$	21.8 dB	24.6 dB	17.8 dB
Activity LAeq15min	27.8 dB	27.6 dB	38.6 dB
Overall delivery activity noise day (arrival, unloading, departure) $L_{Aeq\ 1\ hr}$		**27 dB**	
Overall delivery activity noise night (arrival, unloading) $L_{Aeq\ 15min}$		**31 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	105	105	105
Screening attenuation dB	10.0	10.0	10.0
Distance attenuation correction - dB	-20.4	-20.4	-20.4
Peak noise level L_{Amax}	**45 dB**	**49 dB**	**45 dB**

Table C4: Unit A4

Assessment project: Unit A4	Delivery component		
	Arrival	**Unloading**	**Departure**
Delivery noise activity - predicted ambient noise levels ($L_{Aeq\ T}$) *			
Closest residential property address:	**Gratwicke Drive - Fourth Storey**		
Source noise level at 10 metres $L_{Aeq\ T}$	67	58	69
Time - minutes	2	30	0.5
Distance between noise source and residential property in metres	105	105	105
Screening attenuation dB	10.0	10.0	10.0
Convert to 1 hour - dB	-14.8	-3.0	-20.8
Convert to 15 min - dB	-8.8	0.0	
Distance attenuation correction - dB	-20.4	-20.4	-20.4
Activity $L_{Aeq\ 1\ hr}$	21.8 dB	24.6 dB	17.8 dB
Activity LAeq15min	27.8 dB	27.6 dB	38.6 dB
Overall delivery activity noise day (arrival, unloading, departure) $L_{Aeq\ 1\ hr}$		**27 dB**	
Overall delivery activity noise night (arrival, unloading) $L_{Aeq\ 15min}$		**31 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	105	105	105
Screening attenuation dB	10.0	10.0	10.0
Distance attenuation correction - dB	-20.4	-20.4	-20.4
Peak noise level L_{Amax}	**45 dB**	**49 dB**	**45 dB**

Table C5: Unit A5

Assessment project: Unit A5	Delivery component		
	Arrival	**Unloading**	**Departure**
Delivery noise activity - predicted ambient noise levels ($L_{Aeq\ T}$) *			
Closest residential property address:	**Gratwicke Drive - Fourth Storey**		
Source noise level at 10 metres $L_{Aeq\ T}$	67	58	69
Time - minutes	2	30	0.5
Distance between noise source and residential property in metres	140	140	140
Screening attenuation dB	0.0	0.0	0.0
Convert to 1 hour - dB	-14.8	-3.0	-20.8
Convert to 15 min - dB	-8.8	0.0	
Distance attenuation correction - dB	-22.9	-22.9	-22.9
Activity $L_{Aeq\ 1\ hr}$	29.3 dB	32.1 dB	25.3 dB
Activity LAeq15min	35.3 dB	35.1 dB	46.1 dB
Overall delivery activity noise day (arrival, unloading, departure) $L_{Aeq\ 1\ hr}$		**35 dB**	
Overall delivery activity noise night (arrival, unloading) $L_{Aeq\ 15min}$		**38 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	140	140	140
Screening attenuation dB	0.0	0.0	0.0
Distance attenuation correction - dB	-22.9	-22.9	-22.9
Peak noise level L_{Amax}	**52 dB**	**56 dB**	**52 dB**

Table C6: Unit A6

Assessment project: Unit A6	Delivery component		
	Arrival	**Unloading**	**Departure**
Delivery noise activity - predicted ambient noise levels ($L_{Aeq\ T}$) *			
Closest residential property address:	**Gratwicke Drive - Fourth Storey**		
Source noise level at 10 metres $L_{Aeq\ T}$	67	58	69
Time - minutes	2	30	0.5
Distance between noise source and residential property in metres	180	180	180
Screening attenuation dB	0.0	0.0	0.0
Convert to 1 hour - dB	-14.8	-3.0	-20.8
Convert to 15 min - dB	-8.8	0.0	
Distance attenuation correction - dB	-25.1	-25.1	-25.1
Activity $L_{Aeq\ 1\ hr}$	27.1 dB	29.9 dB	23.1 dB
Activity LAeq15min	33.1 dB	32.9 dB	43.9 dB
Overall delivery activity noise day (arrival, unloading, departure) $L_{Aeq\ 1\ hr}$		**32 dB**	
Overall delivery activity noise night (arrival, unloading) $L_{Aeq\ 15min}$		**36 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	180	180	180
Screening attenuation dB	0.0	0.0	0.0
Distance attenuation correction - dB	-25.1	-25.1	-25.1
Peak noise level L_{Amax}	**50 dB**	**54 dB**	**50 dB**

Table C7: Overall Predicted Sound Level

	Delivery Activity - Gratwicke Drive dB						
	Unit A1	Unit A2	Unit A3	Unit A4	Unit A5	Unit A6	Overall
Daytime L_{Aeq1hr}	45	40	27	27	35	32	46.8
Night $L_{Aeq15min}$	49	44	31	31	38	36	50.7
Night L_{Afmax}	67	62	49	49	56	50	