SHARPS REDMORE

ACOUSTIC CONSULTANTS • Established 1990

Report

Eskdale Road, Uxbridge

Environmental Noise Assessment

Prepared by
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Project No 2422643

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Appendices

1.0 Introduction

1.1 Sharps Redmore (SR) have been instructed to undertake an environmental noise survey and assessment to accompany a proposed planning application for a new industrial unit at Eskdale Road, Uxbridge. The site location is shown in Figure 1 below:

FIGURE 1: Site location

1.2 The site is located to the west of the main settlement of Uxbridge, and is accessed off Cowley Mill Road/Ashley Road junction to the east of the site. The proposal site is surrounded by Eskdale Road, which loops around the site, and is in an existing established industrial/commercial area.

1.3 The closest noise sensitive properties to the site are the residential properties in Hilton Close to the north east of the site, and those in Cowley Mill Road to the east.

1.4 The objective of this technical report is to assess the impact of noise from the proposed development. Based on experience of similar sites the following noise sources have been identified:

- Noise from mechanical services activity;
- Noise from delivery activity including vehicle movements in and out of the site.

1.5 A guide to the assessment methodology and criteria used within this report is included in section 2. Details of a baseline noise survey to establish the existing noise climate and to determine suitable design criteria at the closest residences are presented in section 3.

1.6 Sections 4 and 5 of the report contains an assessment of the impact of noise from the development on the adjacent residential properties.

2.0 Assessment methodology and criteria

National planning 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 Guidance on the interpretation of the policy aims contained within the NPPF is contained within Planning Policy Guidance (PPG). The PPG introduces the concept of a noise exposure hierarchy based on likely average response. The guidance contained in the PPG 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			
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

2.3 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 aims and guidance it is clear that when considering the impact of noise that the fact can be heard and causes impact, is not reason to refusal an application as consideration should also be given to the significance of the impact and the mitigation measures available.

Assessment methodology

2.6 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, such as those contained in the World Health Organisation (WHO) "*Guidelines for Community Noise"*.

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 described within BS 4142:2014+A1:2019 to determine the significance of sound impact from sources of industrial and/or commercial nature. The noise sources that this standard is intended to assess are sound from industrial and manufacturing processes, sound from fixed plant installations, sound from loading and unloading of goods at industrial and/or commercial premises and the sound from mobile plant and vehicles, such as forklift, train or ship movements.

Guidelines for Community Noise

2.7 The WHO "Community Noise Guidelines" (CNG) 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 or physiological 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 are significant (the SOAEL). Compliance with the LOAEL should, therefore, be seen as a robust aim.

2.10 In 2018 the WHO published the "Environmental Noise Guidelines for the European Region" (ENGER). The 2018 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.

2.11 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.

2.12 The relevant World Health Organisation (CNG) noise values are summarised in the following table:

TABLE 2: WHO CNG values

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)

2.13 For L_{AeqT} criteria the time base (T) given in the documents 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 a more stringent assessment than is given in WHO Guidelines for Community Noise.

2.14 The internal CNG values can be converted to an external value by the addition of the attenuation provided by a partially open window of 15 dB.

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 dBA 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_{AeqT}.

2.16 Table 3 below shows the response to changes in noise (known as a semantic scale); this table has been developed from general consensus opinion of acousticians.

TABLE 3: Change in noise level

Change in noise level L_{AeqT} dB	Response	Impact
<3	Imperceptible	None
3 – 5	Perceptible	Slight/moderate
6 – 10	Up to a doubling	Moderate/significant
11 – 15	More than a doubling	Substantial
>15	-	Severe

2.17 Where the existing ambient noise level is already above the criteria developed from the various guidance documents, it may be considered unreasonable to adopt such criteria. It would be reasonable, however, given the above statement, to consider criteria which do not exceed the existing noise climate, thus giving rise to an overall 3 dB increase i.e. the minimum perceptible. If it is less than the minimum perceptible it cannot be described as disturbing or to affect the amenity of residents.

Assessment using BS 4142:2014+A1:2019

2.18 As outlined, this British Standard enables the significance of sound impact to be determined in relation to industrial and commercial sources. The assessment method is a two-step process; firstly, an initial estimate of the noise impact is determined according to the following summary process:

i) Determine the background sound levels, in terms of the index L_{A90}, at the receptor locations of interest.

ii) Determine the specific sound level of the source being assessed, in terms of its L_{AeqT} level (T = 1 hour for day or 15 minutes for night), at the receptor location of interest.

iii) Apply a rating level acoustic feature correction if the source sound has tonal, impulsive, intermittent, or other characteristics which attract attention.

iv) Compare the rating sound level with the background sound level; the greater the difference between the two, the higher the likelihood of adverse impact.

v) A difference (rating – background) of around +10 dB is an indication of significant adverse impact, depending on the context; a difference of +5 dB is an indication of an adverse impact, depending on the context. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending upon context.

vi) The intent of the planning system is to ensure that a development does not result in "significant adverse impacts on health and quality of life." BS 4142:2014 considers that the threshold of significant adverse impact is "a difference around +10 dB or more … depending upon the context".

2.19 BS 4142:2014+A1:2019 uses the concept of '*context*' in the process of identifying noise impact; this is the second part of the BS 4142 assessment process to determine the overall noise impact. It is important to appreciate that a BS 4142 assessment which does not

consider both the initial estimate/numerical level difference and the context upon which the sound occurs is incomplete, and not in accordance with the requirements of the British Standard.

2.20 Section 11 of BS 4142:2014 explains "*The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level* ***and*** *the context in which the sound occurs* (our emphasis). A*n 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"* (our emphasis).

2.21 There are many *context* points to consider when undertaking an assessment of sound impact including:

- The absolute level of sound;
- The character and level of the specific sound in the context of the existing noise climate; for example, is the sound to occur in a location already characterised by similar activities as those proposed?
- The sensitivity of the receptors;
- The time and duration that the specific sound is to occur;
- The conclusions of assessments undertaken using alternative assessment methods, for example WHO guidelines noise values or change in noise level;

2.22 It is therefore entirely possible that whilst the initial estimate/numerical outcome of a BS 4142:2014+A1:2019 assessment is indicative of adverse or significant adverse impact, when the proposal is considered in *context* the significance of the impact is reduced to an acceptable level. This is particularly relevant at night when the most critical factor for delivery activity is the maximum level, L_{Amax}, from bangs and crashes and the relation to recognised sleep disturbance criteria. 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.

3.0 Noise survey details

3.1 A noise survey was undertaken at the site between Tuesday 13th and Wednesday 14th August 2024 to obtain measurements of existing noise levels. Measurements were taken at two measurement locations considered representative of the residential properties to the north east and east of the site. The measurement locations are shown in Figure 2 below.

FIGURE 2: Noise monitoring locations

3.2 The baseline noise measurements were carried out using two Norsonic 140 sound level meters fitted with environmental microphone kits. The sound level meters were calibrated at the start and end of the survey and no variation in levels were observed. The survey at location A comprised of continuous unattended measurements, whilst short term attended measurements were taken at location B. The baseline noise measurements were taken over 15-minute sample periods. Equipment calibration certificates are available on request.

3.3 The sound level meter microphones were positioned approximately 1.5 metres above the ground in free field conditions.

3.4 Weather conditions were dry and partly cloudy, although rain affected the last hour or so of measurements on the Wednesday morning. Temperatures ranged between of 17-25°C; winds were light (<5m/s) and mostly from the south west or west. Weather conditions are not considered to have affected the noise measurements.

3.5 The noise climate was mostly dominated by road traffic sources, with contributions from existing industrial premises in the vicinity of the application site.

3.6 The measured background noise levels are summarised in Figures 3 and 4, and Table 4, and presented in full at Appendix B.

FIGURE 3: Summary of measured noise levels, location A

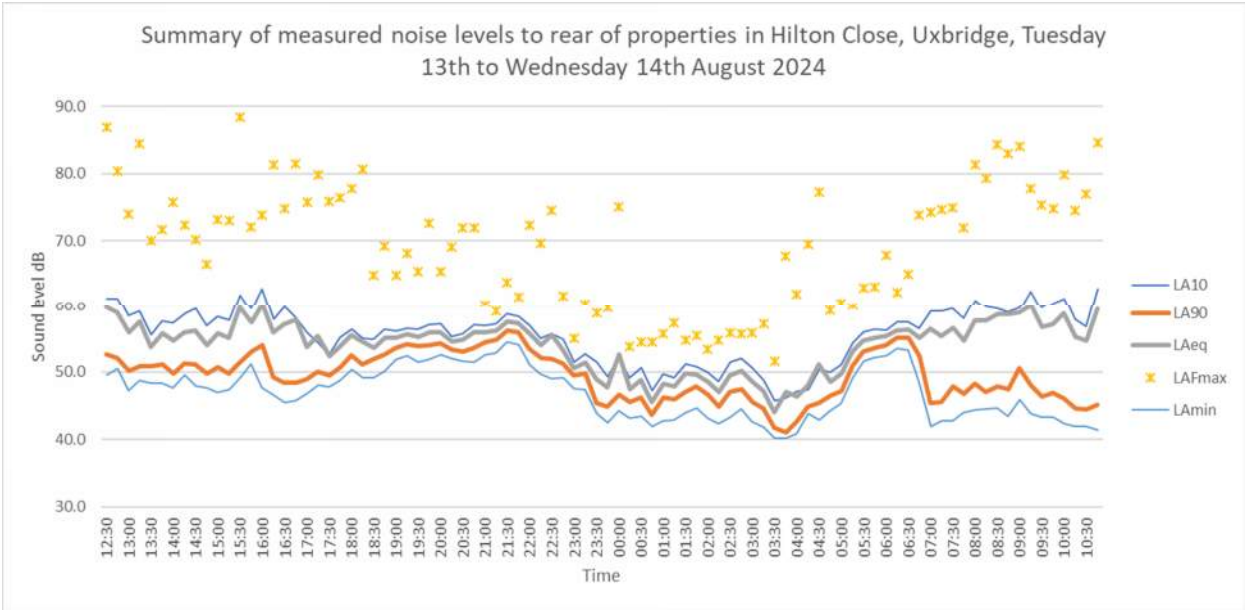
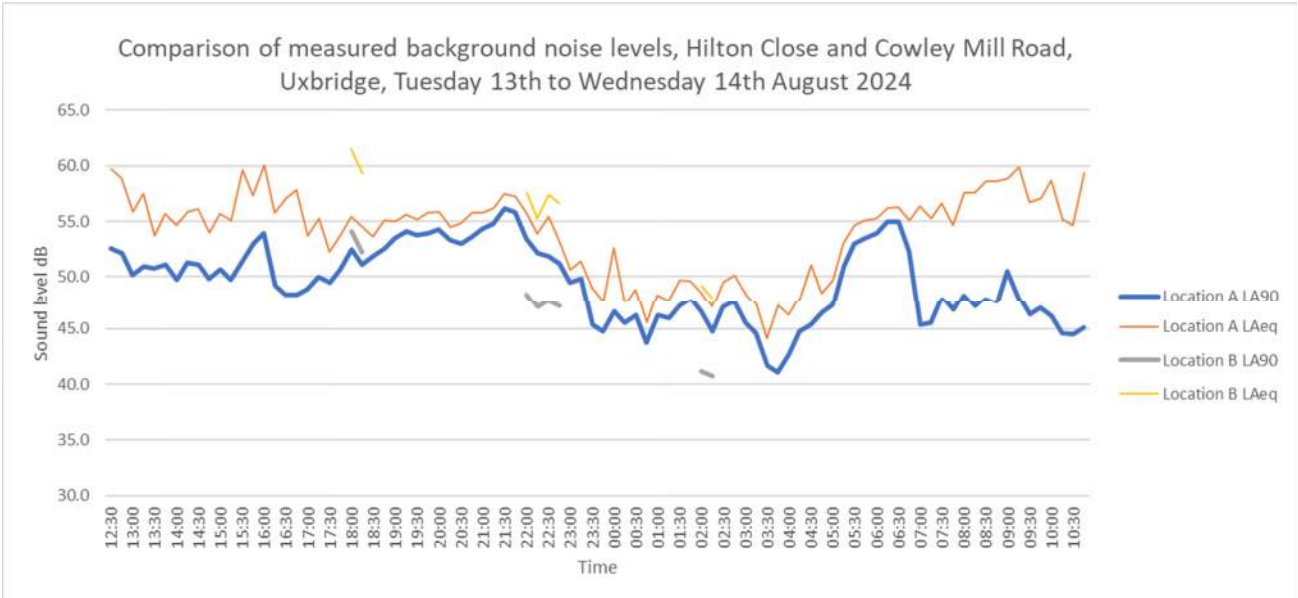


TABLE 4: Attended noise measurements, location B

Date	Time	Sound level dB				
		L_{A10}	L_{A90}	$L_{Aeq\ T}$	L_{AFmax}	L_{Amin}
13.8.24	18:00	64.4	54.1	61.5	78.4	50.9
	18:15	63.2	52.2	59.3	72.3	49.0
	22:00	58.6	48.4	57.6	78.6	46.0
	22:15	58.5	47.0	55.3	74.3	44.4
	22:30	60.4	47.6	57.4	76.6	44.9
	22:45	58.1	47.1	56.6	79.5	43.5
14.8.24	02:00	47.2	41.2	49.2	75.2	38.6
	02:15	48.1	40.7	48.1	69.7	37.6

FIGURE 4: Comparison of measured levels, locations A and B



3.7 The typical background noise climate in the vicinity of the closest residential properties to the proposal site is determined to be 50 dB L_{A90} daytime and 45 dB L_{A90} at night, based on the measured noise levels from locations A and B.

4.0 Noise from fixed plant equipment

4.1 The precise details of the fixed plant equipment for the proposed development are to be finalised, however, the fixed plant may comprise of refrigeration and/or ventilation equipment. It is appropriate to seek to set plant noise limits that could be secured through imposition of a suitably worded planning condition, based on the survey of background sound levels.

4.2 The closest residential properties to the proposed industrial buildings are approximately 120 metres away in Hilton Close, and 175 metres to the properties in Cowley Mill Road, all to the north east and east of the site.

4.3 The objective assessment of plant sound sources in commercial premises should be undertaken in accordance with British Standard 4142:2014+A1:2019. This Standard enables the resultant sound levels from new plant equipment to be compared against the existing background sound level (L_{A90}) of an area to assess the impact.

4.4 In terms of seeking to set appropriate plant rating sound limits, the advice in BS 4142:2014 is that *"The lower the rating level is relative to the measured background sound level, the less likely it 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 the context*" (clause 11, note 'd').

4.5 Hence in relation to the guidance above from BS 4142:2014 there is a technical case to seek to set plant sound limits that match the current typical background sound climate. The baseline noise survey established the existing typical background noise climate as follows; daytime 50 dBA and 45 dBA at night.

4.6 It is proposed to set plant noise criteria on the premise of plant rating noise level limits not exceeding existing typical background noise climate during the day and night time periods. BS 4142:2014+A1:2019 explains that this situation is indicative of low impact, depending on the context.

4.7 The following plant rating noise level limits are proposed; 50 dB daytime and 45 dB at night, to be secured by planning condition.

4.8 The following planning condition is recommended to secure the above criteria:

"No fixed plant and/or machinery shall come into operation until details of the fixed plant and machinery serving the development hereby permitted, and any mitigation measures to achieve this condition, are submitted to and approved in writing by the local planning authority. The rating level of the sound emitted from the site shall not exceed 50 dBA between 0700 and 2300 hours, and 45 dBA at all other times. The sound levels shall be determined by measurement or calculation at the nearest noise sensitive premises. The measurements and assessment shall be made according to BS 4142:2014+A1:2019."

5.0 Noise from delivery activity

5.1 To determine the impact from proposed industrial units SR has utilised the SoundPLAN© computer software to predict noise levels at the existing noise sensitive properties to the north east and east of the site.

5.2 SoundPLAN calculates the overall ambient ($L_{Aeq\ T}$) and maximum/peak (L_{Amax}) levels at defined receptors in accordance with relevant standards including the Calculations of Road Traffic Noise (CRTN) and BS 4142:2014. This calculation is based on a number of input parameters, including noise source data, barriers, topography, intervening ground conditions and other buildings in the area.

5.3 The physical elements of the following models such as location, layout, topography and location of noise sources have been taken directly from the planning application drawings and site observations. The remaining input data is as follows:

Input Assumptions

- All models are based on downwind conditions in all directions;
- Night time models assumed first floor receptor – 4.5m above ground level;
- All daytime receptors 1.5m above ground level;
- Delivery activity daytime – worst case assumption that each unit will have two (one to each loading bay) delivery arrival events, two unloading events, and then two departure events, comprising an HGV vehicle within an hour period;
- Delivery activity night time – worst case assumption that each unit will have a two (one to each loading bay) delivery arrival events and unloading events comprising an HGV vehicle within a 15-minute period;
- HGV unloading: L_{WAeq} = 90 dB; L_{WAmax} = 100 dB (point sources)
- HGV arrival/departure: L_{WAeq} = 103 dB; L_{WAmax} = 107 dB (line sources).

5.4 The above input assumptions represent the very worst-case scenario that could be experienced at the proposed industrial development, with both units receiving two deliveries at exactly the same time.

5.5 During the night time period the main impact will be on sleep disturbance and the critical factor is the maximum level, L_{Amax}, associated with external delivery activity rather than the 'average' sound energy levels ($L_{Aeq\ T}$). Therefore, the outcome of a BS 4142 assessment which considers the difference between external background noise levels at the receptor and external rating level of the specific noise under consideration, does not reflect the true nature of the noise impact. This approach also is not dependant on the site operator and considers the impact of sudden irregular events which have the potential to cause sleep disturbance during the night time period.

5.6 Notwithstanding the above, the following scenarios have been modelled:

- Daytime – $L_{Aeq\ 1\ hour}$
- Night time – $L_{Aeq\ 15\ minutes}$ and L_{Afmax}

5.7 In terms of an assessment in accordance with BS 4142:2014+A1:2019, no rating level corrections for acoustic characteristics have been applied. The rationale behind this is that during both the daytime and night time periods the existing background noise climate is high, and already comprises of the types of characteristics that may occur with the

proposed industrial building. As such noise associated with the proposed development is not considered to be readily distinguishable above the existing noise climate.

5.8 The results of the noise models are displayed in Appendix C to this report and summarised in Table 5 below:

TABLE 5: Predicted noise levels from operational activity

Receptor location	Noise level dB		
	Daytime (0700 to 2300 hours)	Night time (2300 to 0700 hours)	
	$L_{Aeq\ 1\ hour}$	$L_{Aeq\ 15\ mins}$	L_{Afmax}
75 Cowley Mill Road	35	34	48
40-44 Cowley Mill Road	38	37	51
19-30 Hilton Road	32	30	49
31-42 Hilton Road	35	33	50

5.9 In terms of an assessment in accordance with BS 4142:2014+A1:2019, in the context of the existing typical background noise climate (50 dB L_{A90} daytime and 45 dB L_{A90} night time), all predicted delivery activity rating noise levels are well below the existing background noise climate. In accordance with the guidance in BS 4142 this situation is indicative of low noise impact, depending upon context.

5.10 As outlined at paragraph 2.22 and 5.5 above, at night it is the absolute value of noise which best represents noise impact for residential receptors where people are inside sleeping, not the difference between external rating level and background noise level.

5.11 The predicted peak noise levels in the table above indicate that peak noise levels are well below the WHO peak noise criterion of 60 dB L_{Amax}, above which the onset of sleep disturbance may start to occur. Hence the impact of peak noise from delivery activity at night is considered to be low.

5.12 Therefore, it is concluded that noise from external delivery activity at night would be well below the significant adverse impact threshold as set out in paragraph 191 of the NPPF. Hence there is no technical noise reason to seek to restrict operating hours of this proposed industrial development.

6.0 Assessment conclusions

6.1 Sharps Redmore has carried out a noise assessment for a proposed new industrial unit at Eskdale Road, Uxbridge.

6.2 An environmental noise survey has been carried out to establish the existing ambient and background noise levels. The results of the survey have been used to set criteria against which the impact of noise the proposed development on the surrounding noise sensitive receptors can be determined.

6.3 Noise criteria have been recommended based on the guidance in BS 4142. The criteria can be secured by a suitably worded planning condition:

"No fixed plant and/or machinery shall come into operation until details of the fixed plant and machinery serving the development hereby permitted, and any mitigation measures to achieve this condition, are submitted to and approved in writing by the local planning authority. The rating level of the sound emitted from the site shall not exceed 50 dBA between 0700 and 2300 hours, and 45 dBA at all other times. The sound levels shall be determined by measurement or calculation at the nearest noise sensitive premises. The measurements and assessment shall be made according to BS 4142:2014+A1:2019."

6.4 The impact of noise from delivery activity has been considered. Daytime (and night time) predicted delivery activity noise levels will be significantly below the existing background and ambient noise climate. For noise that may occur at night the main consideration are maximum levels associated with vehicle movements and unloading activity. Maximum noise levels have been predicted using SoundPLAN computer modelling software and will be at least 9dB below the WHO night noise guideline value. The WHO guidelines are considered to be the lowest observed adverse effect level (LOAEL) and therefore it is concluded that noise levels from delivery activity would be indicative of low impact, and hence comply with the requirement of the NPPF to avoid significant adverse impact. There is no technical noise reason justification for the local authority to seek to restrict operating hours at the proposal site.

6.5 In conclusion having assessed the noise impact against national design guidance, including BS 4142:2014 and WHO Guidelines for Community Noise, the proposed development would comply with the requirements of paragraph 191 of the National Planning Policy Framework, to avoid significant adverse impact.

APPENDIX A

PROPOSED SITE LAYOUT

N

0m 5m 10m 15m 20m 25m 30m
SCALE

Existing overhead power lines

Total 5 no. staff / visitors parking bays for Unit 2 with drop down bollards

2.4m high paladin fence to perimeter

Secure pedestrian access gates

Total 5 no. staff / visitors parking bays for Unit 1 with drop down bollards

Staff amenity area. Refer drawing no. 11565-P-104 for landscaping plan

EKSDALE ROAD

UNIT 2

UNIT 1

5m clear height to underside of office floor

Office entrance with GF amenities and first floor office space.

Proposed condenser unit

Total 8 no. parking bays with 4 EV charging bays within service yard.

5m clear height to underside of office floor

Proposed condenser unit

Office entrance with GF amenities and first floor office space.

Landscaped area equivilent to 8% of plot, ecologist to advise on providing biodiversity net gain 10% & environment / ecology credits

Total 8 no. parking bays with 4 EV charging bays within service yard.

6 spaces of cycle parking

Bin store

30.8m

32.5m

32.1m

SERVICE YARD

SERVICE YARD

El Sub Sta

6 spaces of cycle parking

Bin store

Heavy duty swing vehicle gates

New sub-station

Heavy duty swing vehicle gates

2.4m high paladin fence to perimeter

OWNERSHIP BOUNDARY

APPLICATION BOUNDARY

UNIT 1 (same to Unit 2)

GF-Warehouse GIA	1,094 sqm	11,776 sqft
GF-Amenity GIA	25 sqm	269 sqft
GF-Circulation	74 sqm	797 sqft
GF-Internal Wall	5 sqm	54 sqft
Total GF GIA	**1,198 sqm**	**12,896 sqft**

1F-Office GIA	119.54 sqm	1,287 sqft
1F-Amenity GIA	18.30 sqm	197 sqft
1F-Circulation	56.9 sqm	612 sqft
1F-Internal Wall	4 sqm	43 sqft
Total 1F GIA	**198.74 sqm**	**2,139 sqft**

TOTAL UNIT 1 GIA	**1,396.74 sqm**	**15,035 sqft**

Car Parking Total	8
Cycle Parking	6
EV Charging	4
Rooflights	10% of warehouse area

REV.	DATE	NOTES	INIT.
A	30.08.24	Planning drawings issued to design teams	JT

CLIENT / PROJECT

GLOBE EXHIBITIONS LTD.

ISLAND SITE, EKSDALE ROAD

UB8 2RT, UXBRIDGE

DRAWING TITLE

PROPOSED SITE PLAN

STATUS

PLANNING

DATE	DRAWN	SCALE @ A3
22.07.2024	JT	1:500

PROJECT NUMBER	UNIT / BLOCK	CI / SFB CODE	TYPE & NUMBER	REVISION LETTER
11565	P		100	A

DRAWING NO.

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

THE RATCLIFFE GROVES PARTNERSHIP

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RGP architects

APPENDIX B

NOISE SURVEY RESULTS

Appendix B1	Title: Noise survey results

Measurement location A - Rear of Hilton Close, Uxbridge

Date	Sample start time	Noise Parameter - dB				
		L_{A10}	L_{A90}	L_{Aeq}	L_{AFmax}	L_{Amin}
13.8.24	12:30	61.3	52.6	59.7	86.9	49.6
	12:45	61.3	52.1	58.9	80.4	50.5
	13:00	58.4	50.2	55.9	74.0	47.3
	13:15	59.0	50.9	57.5	84.4	48.8
	13:30	55.5	50.8	53.7	70.1	48.3
	13:45	57.5	51.1	55.7	71.7	48.3
	14:00	57.3	49.7	54.7	75.8	47.7
	14:15	58.7	51.3	55.9	72.4	49.5
	14:30	59.5	51.1	56.1	70.2	47.9
	14:45	56.9	49.8	54.0	66.5	47.6
	15:00	58.3	50.7	55.7	73.2	46.9
	15:15	57.7	49.7	55.1	73.1	47.4
	15:30	61.9	51.4	59.6	88.4	49.1
	15:45	59.5	53.0	57.3	72.1	51.2
	16:00	62.9	53.9	60.1	73.8	47.6
	16:15	57.8	49.2	55.8	81.3	46.5
	16:30	59.8	48.4	57.1	74.8	45.5
	16:45	58.1	48.4	57.8	81.5	45.8
	17:00	55.8	48.9	53.7	75.8	46.8
	17:15	54.3	50.0	55.3	79.8	48.1
	17:30	52.6	49.5	52.3	75.9	47.8
	17:45	55.1	50.7	53.8	76.4	48.7
	18:00	56.4	52.5	55.4	77.8	50.3
	18:15	55.0	51.1	54.5	80.7	49.2
	18:30	54.8	51.9	53.6	64.9	49.2
	18:45	56.4	52.6	55.1	69.3	50.1
	19:00	56.1	53.5	55.0	64.9	51.8
	19:15	56.5	54.1	55.6	68.1	52.4
	19:30	56.4	53.8	55.2	65.5	51.5
	19:45	57.0	53.9	55.8	72.6	51.9
	20:00	57.1	54.3	55.9	65.5	52.5
	20:15	55.3	53.3	54.5	69.1	52.0
	20:30	55.6	53.0	54.8	72.0	51.6
	20:45	57.0	53.6	55.8	72.0	51.5
	21:00	56.9	54.4	55.8	60.4	52.5
	21:15	57.2	54.8	56.2	59.0	52.8
	21:30	58.6	56.2	57.5	63.8	54.4
	21:45	58.3	55.8	57.2	61.6	54.0
	22:00	56.9	53.4	55.7	72.4	51.0
	22:15	55.0	52.1	53.9	69.7	49.7
	22:30	55.7	51.9	55.4	74.5	49.0
	22:45	54.8	51.2	53.3	61.8	49.2
	23:00	51.5	49.5	50.6	55.0	47.5
	23:15	52.7	49.8	51.4	60.5	47.4
	23:30	51.4	45.4	49.0	58.8	43.8
	23:45	49.3	44.8	47.7	59.6	42.5
14.8.24	00:00	52.1	46.6	52.6	75.1	44.2
	00:15	49.2	45.5	47.5	53.8	43.2
	00:30	50.7	46.2	48.8	54.5	43.5
	00:45	47.2	43.7	45.6	54.4	41.9

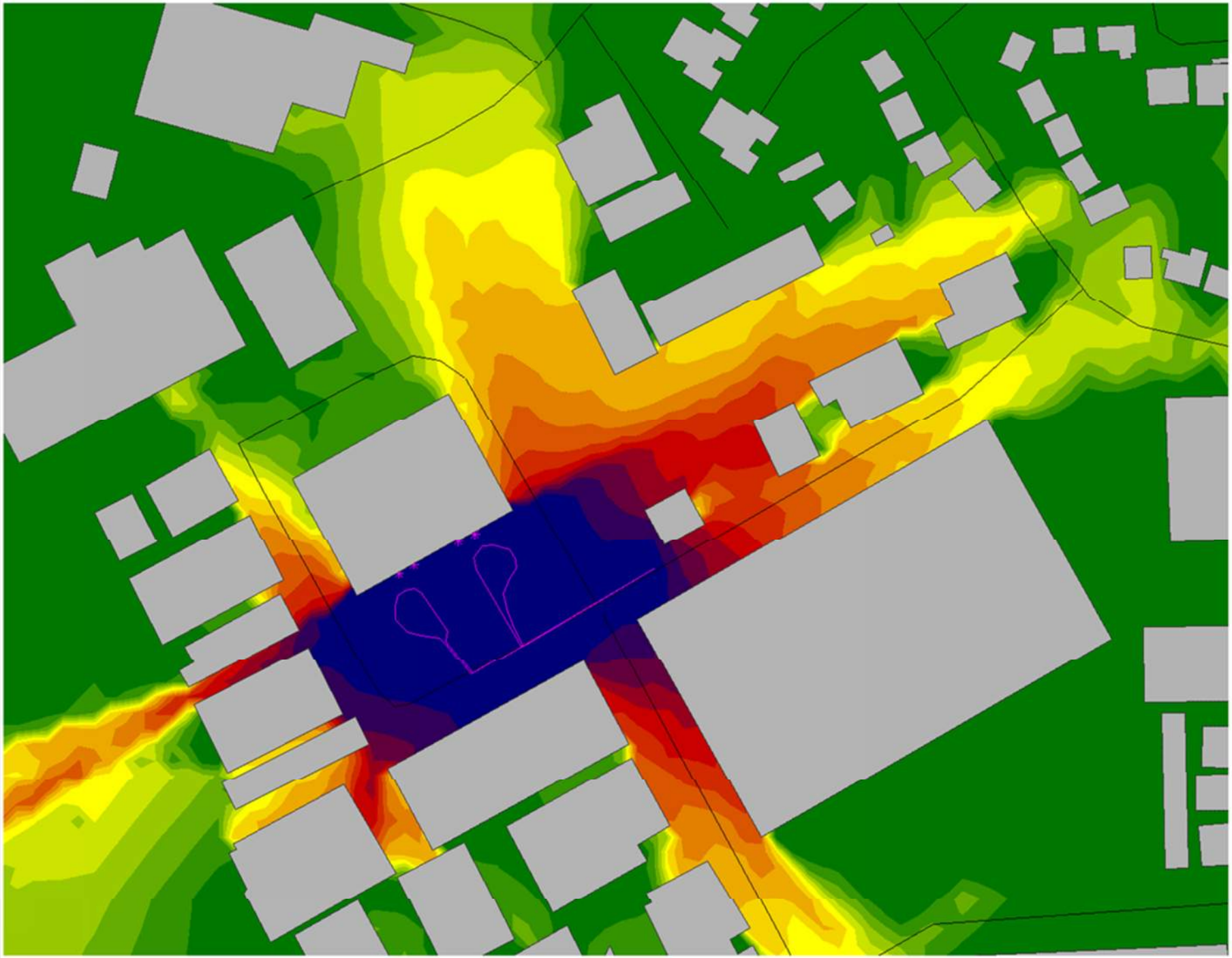
Appendix B2	Title: Noise survey results

Measurement location A - Rear of Hilton Close, Uxbridge

Date	Sample start time	Noise Parameter - dB				
		L_{A10}	L_{A90}	L_{Aeq}	L_{AFmax}	L_{Amin}
14.8.24	01:00	49.7	46.2	48.3	55.7	42.7
	01:15	49.1	46.0	47.8	57.3	42.9
	01:30	51.2	47.1	49.7	54.7	44.0
	01:45	50.8	47.8	49.6	55.4	44.7
	02:00	50.0	46.6	48.5	53.4	43.1
	02:15	48.6	44.8	47.0	54.7	42.4
	02:30	51.4	47.0	49.5	55.8	43.3
	02:45	52.0	47.5	50.1	55.6	44.5
	03:00	50.6	45.5	48.5	55.8	42.6
	03:15	48.7	44.6	47.2	57.2	41.8
	03:30	45.8	41.7	44.1	51.6	40.2
	03:45	46.2	41.1	47.1	67.7	40.2
	04:00	47.1	42.7	46.3	62.1	40.8
	04:15	47.4	44.8	48.0	69.5	43.8
	04:30	50.4	45.4	51.1	77.2	42.9
	04:45	50.0	46.5	48.5	59.2	44.3
	05:00	51.1	47.2	49.7	60.7	45.4
	05:15	54.3	50.9	53.0	60.0	49.1
	05:30	55.9	53.0	54.7	63.0	51.6
	05:45	56.3	53.5	55.1	63.1	52.1
	06:00	56.2	53.9	55.3	67.9	52.4
	06:15	57.4	55.0	56.2	62.3	53.5
	06:30	57.4	55.0	56.3	65.0	53.2
	06:45	56.5	52.3	55.1	73.8	48.4
	07:00	59.0	45.4	56.4	74.3	42.0
	07:15	59.0	45.5	55.3	74.7	42.8
	07:30	59.5	47.9	56.6	75.0	42.7
	07:45	58.0	46.7	54.7	72.0	44.0
	08:00	61.1	48.3	57.6	81.3	44.4
	08:15	59.8	47.1	57.6	79.3	44.5
	08:30	59.4	47.9	58.6	84.3	44.6
	08:45	58.9	47.5	58.6	82.9	43.5
	09:00	59.6	50.5	58.9	84.0	45.9
	09:15	62.5	48.0	59.9	77.8	43.9
	09:30	59.6	46.3	56.7	75.4	43.3
	09:45	60.7	46.9	57.1	74.8	43.3
	10:00	61.4	46.1	58.7	79.8	42.4
	10:15	57.8	44.6	55.2	74.5	41.9
	10:30	56.8	44.5	54.7	77.0	42.0
	10:45	62.8	45.1	59.4	84.6	41.4

APPENDIX C

SOUNDPLAN MODELS



dBA

30 <	<= 32
32 <	<= 34
34 <	<= 36
36 <	<= 38
38 <	<= 40
40 <	<= 42
42 <	<= 44
44 <	<= 46
46 <	<= 48
48 <	<= 50
50 <	<= 52
52 <	<= 54
54 <	<= 56
56 <	<= 58
58 <	

SK01: Daytime Noise Contour Plot (LAeq,1hour)

Contour Grid / Calculations at 1.5m height

(Noise contour plot provided for indicative purposes only)

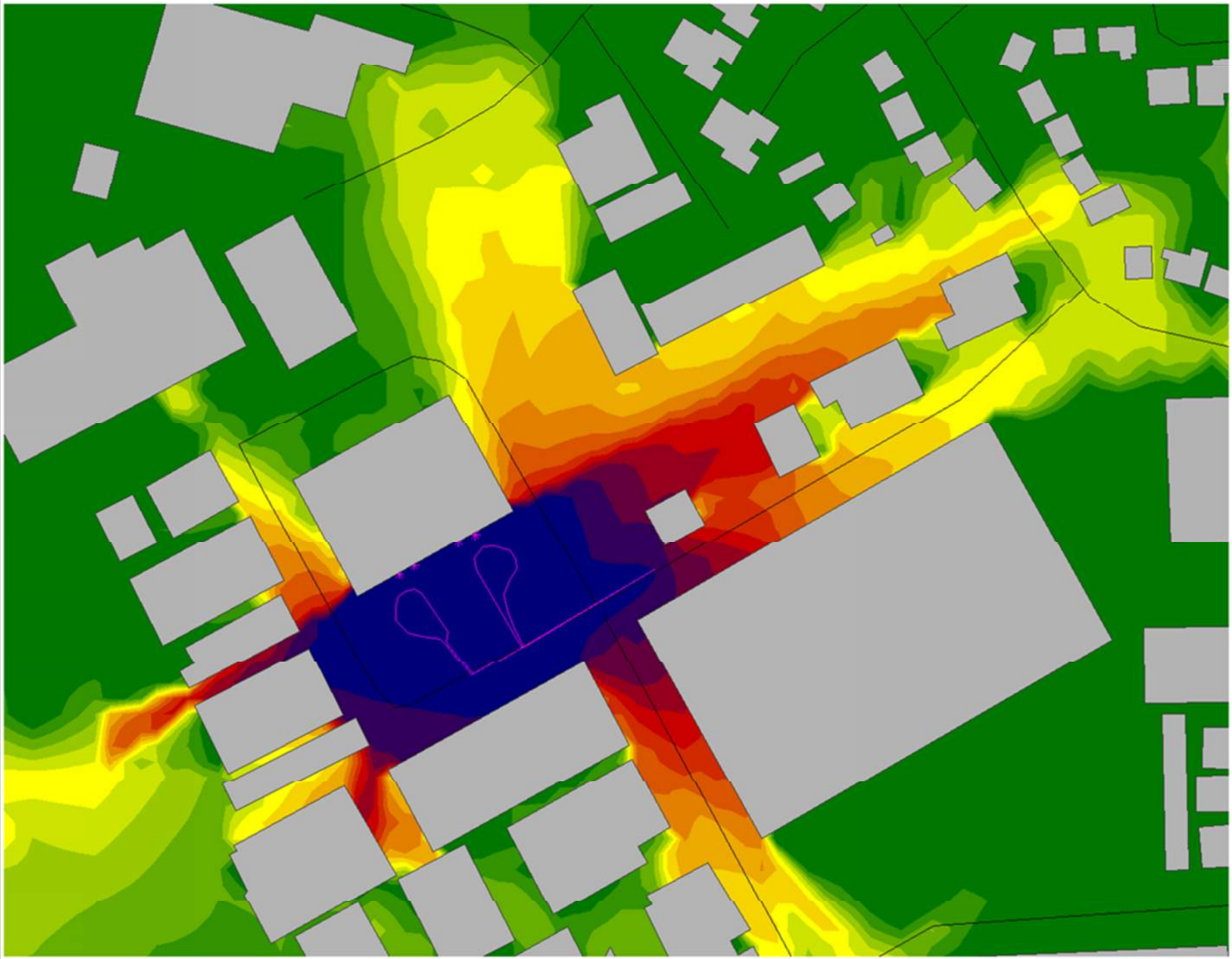
Date: 24.09.2024

Project No: 2422643

Consultant: M Welsh

Scale 1:1659

0 5 10 20 30 40 m



dBA

30 <	<= 30
32 <	<= 32
34 <	<= 34
36 <	<= 36
38 <	<= 38
40 <	<= 40
42 <	<= 42
44 <	<= 44
46 <	<= 46
48 <	<= 48
50 <	<= 50
52 <	<= 52
54 <	<= 54
56 <	<= 56
58 <	<= 58

SK02: Night time Noise Contour Plot (LAeq,15 mins)

Contour Grid / Calculations at 4.5m height

(Noise contour plot provided for indicative purposes only)

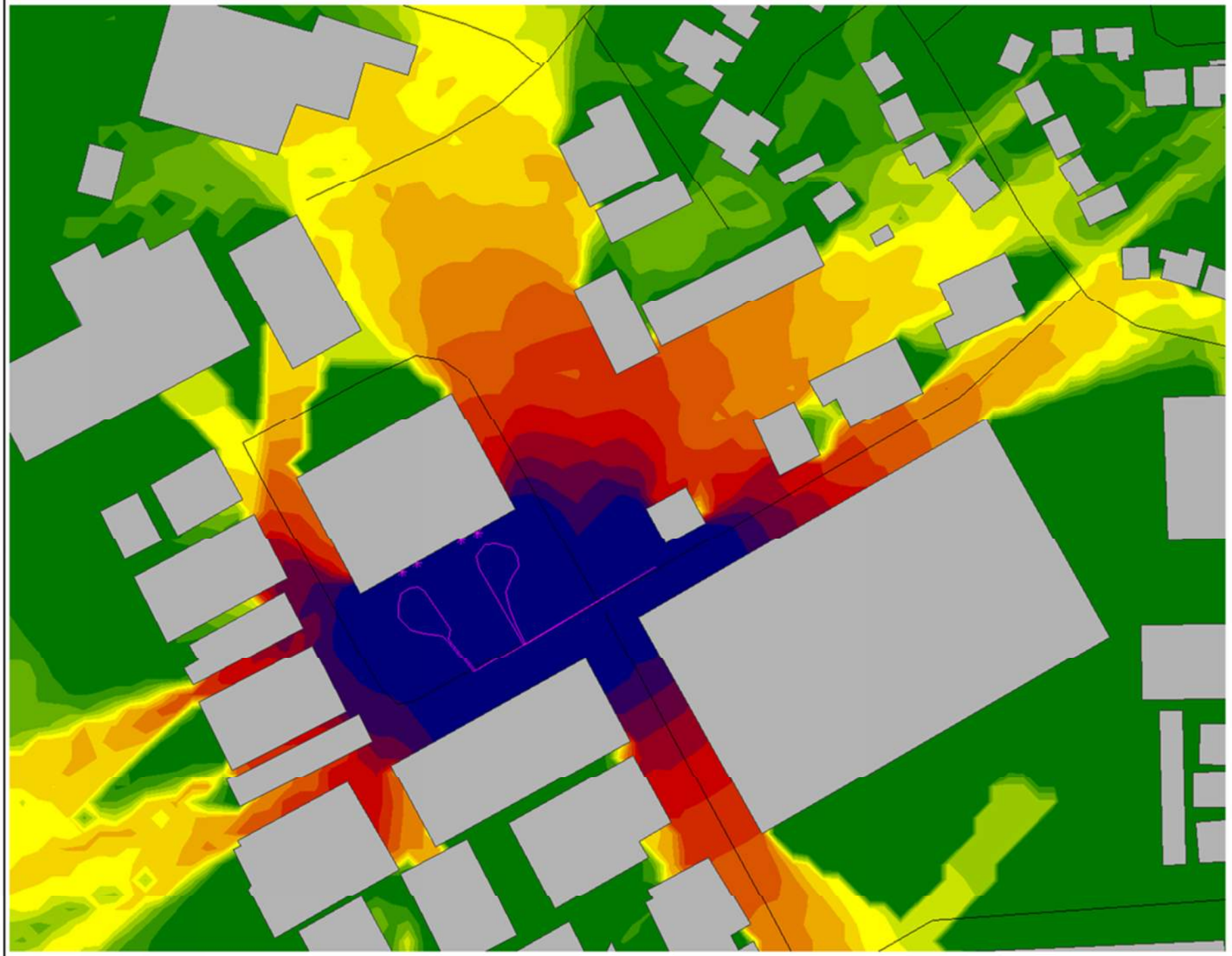
Date: 24.09.2024

Project No: 2422643

Consultant: M Welsh

Scale 1:1659

0 5 10 20 30 40 m



dBA

45 <	<= 47
47 <	<= 49
49 <	<= 51
51 <	<= 53
53 <	<= 55
55 <	<= 57
57 <	<= 59
59 <	<= 61
61 <	<= 63
63 <	<= 65
65 <	<= 67
67 <	<= 69
69 <	<= 71
71 <	<= 73
73 <	

SK03:
Noise Contour Plot
(LAmax)

Contour Grid / Calculations
at 4.5m height

(Noise contour plot provided
for indicative purposes only)

Date: 24.09.2024

Project No: 2422643

Consultant: M Welsh

Scale 1:1659

0 5 10 20 30 40
m

Name	Source type	Lw dB(A)	LwAmax	Time histogram	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)
Unloading	Point	89.9	100	100%/24h	unloading 89.9dB LWA	71.5	80.5	83.5	84.5	82.5	81.5	74.5	67.5
Movements	Line	103	107	2 per hour day 1 night	Lkw, slow accelerating	63.6	66.6	71.6	75.6	79.6	76.6	70.6	62.6

APPENDIX D

ACOUSTIC TERMINOLOGY

Acoustic Terminology

D1 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.

D2 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.

D3 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).

D4 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.

D5 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.

D6 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.

L_{A10}: 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.

L_{AMAX} 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.

D7 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.

D8 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:

$$60 - 20 \text{ Log } {}^{160}/_{10} = 60 - 24 = 36 \text{ dB}$$