SHARPS REDMORE

ACOUSTIC CONSULTANTS • Established 1990

Report

Land adjacent to Haverhill Business Park, Bumpstead

Environmental Noise Report – Reserved Matters

Prepared by
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Project No 1919017

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Contents

Appendices

1.0 Introduction

1.1 Sharps Redmore have been instructed to carry out an environmental noise assessment in relation to the development of land adjacent to Haverhill Business Park, Bumpstead. The site location is shown in Figure 1 below:

FIGURE 1: Site Location

1.2 Outline planning (OP) permission (Ref: DC/15/242/OUT) exists for development of the site for up to 46,000 sqm of floor space for uses within B1, B2 and B8 of the Use Classes Order, road side uses (petrol filling station and restaurant/s, Use Class (A3/A5), car dealerships (sui generis), builders merchants, ancillary lorry park for Business Park occupiers, together with landscaping, car and HGV parking and associated works and facilities including access. Condition 2 of OP states the following:

Condition 2: No development shall be commenced within a phase or plot until details of the appearance, landscaping, layout, parking and scale (hereby called the 'the reserved matters') relating to that phase or plot have been submitted to and approved in writing by the Local Planning Authority. The development of each phase or plot shall be carried out in accordance with the approved 'reserved matters'.

1.3 In accordance with Condition 2 Reserved matters approval is being sought for approval of reserved matters for Plots NE1, NE2 and SE 2. A layout for the buildings is shown in Appendix A.

1.4 Sharps Redmore has previously carried out a noise assessment for a previous application, (Reference DC/19/1010/RM[1]) for discharge of reserved matters at Plot NE1, NE2 and SE 2 in July 2019. The assessment considered the noise impact of operational of 5 units on the site and concluded that subject to an acoustic barrier around the service yard to Unit 3 and northern access to Unit 4, noise from the proposed units would not cause adverse impacts to local residents in line with the policy aims of the National Planning Policy Framework (NPPF). The application was granted consent by West Suffolk Council subject to conditions specifying noise limits (Condition 3) and the requirement to submit to a management plan for each phase of the development. (Condition 4). The Management Plan should specify the hours of operation, hours of deliveries, full details of the loading/unloading and any noise mitigation measures necessary.

1.5 The layout agreed in relation to the reserved matters application has been amended to take into account potential occupiers requirements. These changes relate to Units 1 and 2 only.

1.6 The purpose of this assessment is therefore to determine the noise impact of the proposed changes to the consented layout on the adjacent noise residential properties to the north and west of the site.

1.7 The report is structured as follows:

- Section 2.0 – Policy and Assessment Criteria
- Section 3.0 – Details of Environmental Survey
- Section 4.0 – Assessment of mechanical services plant and internal activity
- Section 5.0 – Assessment of external activity including servicing and car parking.
- Section 6.0 – Summary and Conclusions

1.8 A guide to the acoustic terminology used within the report is included in Appendix C.

[1] DC/19/1010/RM | Reserved Matters Application - Submission of details under Outline Planning Permission DC/15/2424/OUT - Matters Reserved by Condition 2 (appearance, landscaping, layout and scale) for the development of Plots NE1, NE2 and SE2 for use classes B1, B2 and B8. | Land Adj Haverhill Business Park Bumpstead Road Haverhill Suffolk-

2.0 Assessment Criteria

National Policy

2.1 The National Planning Policy Framework (NPPF), February 2019, 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 180 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

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not noticeable	No Effect	No Observed Effect	No specific measures required
Noticeable 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	
Noticeable 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	
Noticeable 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

Perception	Examples of Outcomes	Increasing Effect Level	Action
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."*

Local Policy

2.5 With regard to local policy reference is made to Policy DM2 and DM14 of the West Suffolk Joint Management Policies Document (2015). In terms of noise the policies state the following:

Policy DM2: Proposals for all development (including changes of use, shopfronts, and display of advertisments) should, as appropriate:

g. taking mitigation measures into account, not affect adversely

….

> *v. the amenities of adjacent areas by reason of noise, smell, vibration, overlooking, overshadowing, loss of light, other pollution (including light pollution), or volume or type of vehicular activity generated.*

Policy DM14: Proposals for all new developments should minimise all emissions and other forms of pollution (including light and noise pollution) and ensure no deterioration to either air or water quality. All applications for development where the existence of, or potential for creation of, pollution is suspected must contain sufficient information top enable the Planning Authority to make full assessment of potential hazards."

2.6 Therefore 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.

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

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. 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 premises or is the proposal the installation of new plant or an extension to an existing premises?

2.18 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.

3.0 Survey Details

3.1 A noise survey was carried out between 8th and 15th July 2019 to determine the existing noise levels at the site. Prior to carrying out the survey Sharps Redmore contacted Karen Cattle at West Suffolk Council to agree the extent and scope of the survey.

3.2 Unattended long term measurements were carried out at two locations, NL1 and NL2, which were chosen to represent the residential properties to the north of the development in Bumpstead Road and Ashlea Road. In addition at the request of Ms Cattle, measurements were taken at two points, NL 3 and NL 4 along the footpath which runs to the north of the site.

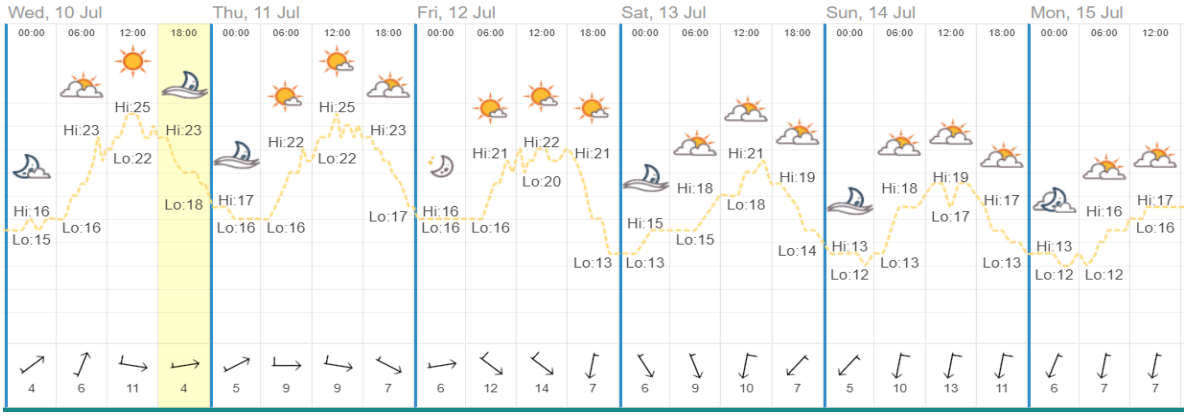
The monitoring locations are shown in Figure 2 below:

FIGURE 2: Monitoring Locations

3.3 Measurements were taken using Norsonic 118 type 1 sound level meters which were calibrated before and after the survey. The sound level meters were set up to continuously record existing noise levels at 15 minute intervals throughout the survey period with the steady noise level dB $L_{Aeq(15min)}$, non-steady noise level dB L_{Amax} and background noise levels dB, $L_{A90,15min}$ were recorded at each location.

3.4 Weather conditions are shown in Figure 3 below but were generally dry, warm with light winds. Weather conditions were suitable for taking noise measurements.

FIGURE 3: Weather Conditions (Source: www.timeanddate.com/weather)



3.5 Full details of the survey results have previously been submitted to in relation to the previous consented scheme. The results are summarised in the Tables below:

TABLE 4: Survey Results – NL1

Date	Daytime (dB)		Night Time (dB)		
	L_{Aeq}	L_{A90}	L_{Aeq}	L_{A90}	L_{Amax}
10.7.19	47 - 62	41 - 51	43 - 56	41 - 48	48 – 74
11.7.19	48 - 59	42 - 52	43 - 59	40 - 47	56 – 84
12.7.19	47 – 63	40 - 52	44 - 66	41 - 44	52 – 91
13.7.19	45 - 62	34 - 47	37 - 51	30 - 45	56 – 75
14.7.19	44 - 60	34 - 47	33 - 53	30 - 44	44 -79
15.7.19	54 - 61	45 - 49	--	--	--

TABLE 5: Survey Results – NL2

Date	Daytime (dB)		Night Time (dB)		
	L_{Aeq}	L_{A90}	L_{Aeq}	L_{A90}	L_{Amax}
12.7.19	44 - 54	43 - 52	42 - 48	39 - 46	50 – 74
13.7.19	43 - 53	41 - 51	42 - 49	38 - 45	46 – 65
14.7.19	41 - 55	39 - 49	39 - 48	36 - 43	48 – 67
15.7.19	46 - 53	43 - 50	--	--	--

TABLE 6: Survey Results – NL3 and NL4 – 11th July 2019

Time	Location	L_{Aeq} dB	L_{A90} dB	L_{Amax} dB	Observations
13:53	3	45	40	61	Distant road traffic and industrial noise noted. Occasional aircraft noise
14:08	4	51	49	62	Industrial noise, HGV movements, Forklift truck movements and distant road traffic noise noted.

3.6 The existing noise climate is characterised by road traffic noise, and noise from the industrial buildings in the area.

4.0 Assessment of mechanical services plant and internal noise

4.1 In relation to the previous reserved matters application Condition 3 which stated the following:

"Further to the proposed noise levels contained in the Environmental Noise Report – Reserved Matters submitted by Sharps Redmore on the 18th July 2019, Project No 1919017, the combined noise levels emitted from any external mechanical plant and internal operations, at each Unit, installed or operated in connection with the carrying out of this permission, shall be enclosed and/or attenuated and maintained so as to ensure that the noise generated by the permission shall not exceed:

35 dB(A) L_{A90} (1 hour daytime 07:00 – 23:00) at the boundary of the nearest residential property (that being 10dB(A) below the daytime noise levels measured as 45 dB(A) L_{A90})

25 dB(A) L_{A90} (15 min night time (23:00 – 07:00) at the façade of the nearest residential property (that being 10dB(A) below the night time noise level measured as 35 dB(A) L_{A90})

No plant, machinery and equipment, including any proposed sound proofing shall be installed until details have been submitted to the Local Planning Authority for approval.

Noise measurements for the purposes of this condition shall be pursuant to BS 4142:2014"

4.2 It is likely that the Council will seek to impose a similar condition will be imposed in relation to the new application. Whilst SR would agree that considering the lack of information available in relation to the potential use, its SR's view that the noise limits proposed are unreasonable.

4.3 The advice in BS 4142:2014 is that the significance of the sound from 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 context in which the sound occurs.

4.4 In relation to the difference between the source noise and background sound level, a difference of +10 dB or more is likely to be an indication of a significant adverse impact, a difference of +5 dB is likely to an indication of an adverse impact and where the rating level does not exceed the background sound level, this is an indication of the sound having a low impact. As discussed in section 2.0 of this report the main policy aim of the NPPF is the avoidance of significant adverse impacts i.e. a difference of +10 dB between the source noise and background noise levels. This is 20 dB higher than the noise limits proposed in the condition above. It is therefore a noise limit of 10 dB below background noise levels is not required by planning policy.

4.5 The latest 2014 version of BS 4142 no longer refers to what sound levels are considered to be very low; BS 4142:1997 stated that background noise levels below about 30 dB and rating levels below 35 dB are both considered to be very low. This information was used to justify a lower level limit for setting plant sound criteria in situations where background sound levels were very low, this tended to avoid situations requiring plant sound limits lower than 35 dB (which would result in internal levels, with partially open windows, of 20 to 25 dB, well below the WHO/BS 8233 guideline noise values).

4.6 The assessment method in BS 4142:2014 places significant emphasis on 'context'. The context of noise sensitive receptors at night is that people will be inside bedrooms; this is a point recognised in the examples A6 and A8 of BS 4142:2014. The inference is that in considering receptors at night it is less important to consider the difference between the rating sound level and background sound level when determining impact, rather the absolute level is more critical.

4.7 The noise limits required by condition 3 would result in internal noise levels during the night time period of between 10 – 15 dB, allowing for partially open windows. This is at least 15 dB below the WHO/BS 8233 requirements for internal noise levels in bedrooms.

4.8 It is therefore SR's opinion that there is no technical or policy reasons to require noise levels from the site below 35 dB during either the day time or night time period.

5.0 Noise Assessment – External Activity

5.1 Based on experience of similar sites the main impact from external activity will be from car park activity and servicing of the units. At this stage the operating hours of each unit are not known. It is therefore assumed that each unit will operate 24 hours a day, 7 days a week.

5.2 The nearest noise sensitive properties to the site are the residential properties in Bumpstead Road and Ashlea Road to the north of the site.

Car Parking

5.3 The proposed changes to the Unit 1 and 2 will see an overall reduction in the number of car park spaces provided and also move the parking areas away from the residential properties in Bumpstead Road and Ashlea Road. Therefore the noise impact from car parking resulting from the changes to layout will be reduced compared to that previously agreed by the West Suffolk Council.

Servicing Activity

5.4 The main sources of noise from external activity will be noise from service yard activity; vehicles manoeuvring, unloading, use of fork lift trucks, movements of trailers and car park noise.

5.5 In terms of noise the following assessment it has been assumed that the units will be used as warehouse distribution units (B8) operating 24 hours a days. This will ensure a robust assessment as service yard activity from a B8 use will likely generate higher noise levels than either B1 or B2 use.

5.6 Noise levels of the different components of service activity have been measured at similar B8 units where vehicles are unloaded/loaded using fork lift trucks or via a level dock loading system. Typical noise levels from servicing activity are shown in Table below:

TABLE 10: Service Yard Noise at 10 metres

Delivery Activity	Event Noise Level (at 10 metres)						Overall L_{Amax} dB
	Arrival		Unloading		Departure		
	Duration (mins)	$L_{Aeq\,T}$ (dB)	Duration (mins)	$L_{Aeq\,T}$ (dB)	Duration (mins)	$L_{Aeq\,T}$ (dB)	
Level Access[1]	2	69	40	66	0.5	67	75-79
Level Dock	2	69	30	58	0.5	67	75-79

[1]Inlcudes unloading of goods with fork-lift trucks

5.7 Using the above data the predicted noise levels from service yard activity at 37 Bumpstead Road, Mayville, Bumpstead Road and the residential properties in Ashlea Road has been calculated. Screening loses are based on screening provided by the buildings, the acoustic fence which is proposed around the units 3 and 4 and the topography of the area. For the purposes of the assessment the number of vehicle movements each hour is based on the number of loading bays as shown on the indicative plan. For the night time period (2300 – 0700 hours) it has been assumed 50 % of the bays will be used. The results of the calculations are shown in Appendix C and summarised in the tables below.

TABLE 11: Predicted noise levels – Service activity

Receptor	Daytime (0700 – 2300hrs)	Night time (2300 – 0700 hrs)	
	L_{Aeq1hr}	$L_{Aeq1hr}/L_{Aeq15min}$	L_{Amax}
37 Bumpstead Road	38 dB	36/39 dB	44 dB
Maryville	38 dB	35/38 dB	43 dB
Ashlea Road	36 dB	35/37 dB	41 dB

5.8 As a result of the changes to the layout predicted noise levels will be less than those previously predicted in relation to the previous application. Therefore the impact of noise on residents from the proposed layout will be less than the existing consented scheme.

5.9 Notwithstanding it is recommended that similar to the consented scheme that before any phase or unit of the development is occupied a Management Plan for the phase or unit, including hours of operation, hours of deliveries, and full details of loading/unloading arrangements along with any noise mitigation necessary are submitted to the Council.

6.0 Conclusions and Recommendations

6.1 Sharps Redmore have been instructed to carry out a noise assessment for an application to discharge reserved matters application in relation to the proposed development off Bumpstead Road, Haverhill.

6.2 A noise assessment has been carried out which has compared the proposed layout to that previously consented by West Suffolk Council. The following matters have been considered:

- Noise from fixed plant
- Noise from internal activity
- Noise from external activity

6.3 The noise levels from the proposed development have been calculated at the nearest noise sensitive receptors.

6.4 It is shown that noise from the Units, including external servicing, will not cause impact to existing noise sensitive properties and it is concluded that there is no reason to restrict the operating hours of the unit. Noise from external activity; car parking and servicing will less than that predicted from the consented scheme.

6.5 Noise from fixed plant will be controlled by planning condition not to exceed the existing background noise levels.

6.6 It is concluded that based on typical use of the Units as B1, B2 and B8 the site can operate 24 hours a day, 7 days a week without causing significant impact on the health and life of local residents in accordance with the national policy aims contained within the NPPF. This is dependent on the occupier of the Units and a condition is proposed which will require details of the proposed servicing, hours of operation are confirmed prior to the occupation of each unit.

APPENDIX A

PROPOSED LAYOUT

Proposed Section 278 works to extend and link existing footpath (approx 50.0m)

Mayville

Saguenay

31

37

Existing Balancing Pond

HELIONS BUMPSTEAD ROAD

BUMPSTEAD ROAD

BUMPSTEAD ROAD

Path (um)

Dismantled Railway

EXISTING FOOTPATH

Acoustic fencing 4m high

Acoustic fencing 4m high

50m Service Yard with a 25m dia. Turning Circle

Waste/Recycle Store

2 No Level Access Doors

12 No Dock Levellers

Unit 1

2 No Level Access Doors

1st Floor office

New public footpath 2.0m wide

Parking 62 +3 Dis

[PP]

New 800Kva Substation

New 300Kva Landlords Supply

35m Service Yard with a 25m dia. Turning Circle

Parking 14+2 Dis

2 No Level Access Doors

Unit 2

Min 40m Service Yard with a 25m dia. Turning Circle

4 No Dock Levellers

Waste/Recycle Store

2 No Level Access Doors

Unit 3

1st Floor office

Parking 34+2 Dis

Parking 99+4 Dis

Unit 4

2 No Level Access Doors

35m Service Yard with a 25m dia. Turning Circle

Waste/Recycle Store

New 800Kva Substation

[PP]

New link footpath 2.0m wide

New link footpath 2.0m wide

ICENI WAY

ICENI WAY

ICENI WAY

EXISTING FOOTPATH

EXISTING FOOTPATH

Ei Sub Sta

Development completed
DC/16/2453/RM

MKM
BUILDERS
MERCHANTS

Parking 89+3

1st Floor office

Unit 5

40m Service Yard with a 25m dia. Turning Circle

3 No Level Access Doors

Waste/Recycle Store

Ponds

Lay-by

A1017 HAVERHILL BYPASS

N=241 050
E=568 939

notes

Key to External Finishes.
To be read in conjunction with drawings of BEA Landscape & Nolan Associates Engineers

- Planting as BEA Landscape design
- Concrete Service Yard.
- Tarmac - Roadway
- Tarmac - Footpath
- Block Paviors Impermeable
- Block Paviors Permeable
- Fencing to service yards - 2.4m high paladin ppc black with matching gates.
- Acoustic Fencing 4m high close boarded treated timber with overall density >15kg/m²
- [PP] Parking Signage — PRIVATE ROAD PARKING ON THE ROAD OR VERGE IS STRICTLY PROHIBITED

Schedule of Areas - GIA

Unit 1	Office GF	60 sq.m.	645 sq.ft.
	Office FF	930 sq.m.	10,010 sq.ft.
	Warehouse	8,306 sq.m.	89,405 sq.ft.
	Total	9,296 sq.m.	100,061 sq.ft.
Unit 2	Warehouse	1,915 sq.m.	20,624 sq.ft.
	Total	1,915 sq.m.	20,624 sq.ft.
Unit 3	Office GF	64 sq.m.	688 sq.ft.
	Office FF	228 sq.m.	2,454 sq.ft.
	Warehouse	4,476 sq.m.	48,179 sq.ft.
	Total	4,768 sq.m.	51,321 sq.ft.
Unit 4	Warehouse	1,134 sq.m.	12,195 sq.ft.
	Total	1,134 sq.m.	12,195 sq.ft.
Unit 5	Office GF	64 sq.m.	688 sq.ft.
	Office FF	210 sq.m.	2,260 sq.ft.
	Warehouse	4,136 sq.m.	44,520 sq.ft.
	Total	4,410 sq.m.	47,468 sq.ft.
Total Build		21,523 sq.m.	231,669 sq.ft.
Site Area		5.60 hectare	13.85 acres

no.	date	revision	by

aja architects

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client

TD TREBOR DEVELOPMENTS

project

Haverhill Business Park
Iceni Way
Haverhill, Suffolk
CB9 7FD

drawing

Site Plan
with 100,000sqft + B8 Unit

scale	1:500@A0	drawn	TW
checked	AS	date	05/11/2019

no

6502-SK05

PRELIMINARY

APPENDIX B

CALCULATIONS

Appendix B - Servicing Calculations

Receptor	Unit	Type of loading bay	Correction for number of units Day/night	Day time (0700 – 2300)	Night time (2300 -0700)	
				L_{Aeq1hr}	$L_{Aeq1hr}/L_{Aeq15min}$	L_{Amax} (arrival&departure/unloading
37 Bumpstead Road	1	Level Access	+3/0dB	31 dB	28/30 dB	37/42 dB
		Dock Level	+9/+6dB	30 dB	27/31 dB	37/42 dB
	2	Level Access	+3/0dB	33 dB	30/32 dB	41/44 dB
	3	Level Access	+3/0 dB	32 dB	30/33 dB	35/40 dB
		Dock Level	+6/+3 dB	28 dB	26/31 dB	42/44 dB
	4	Level Access	+3/0 dB	24 dB	22/29 dB	36/40 dB
		Overall		**38 dB**	**36/39 dB**	**44 dB**
Maryville	1	Level Access	+3/0dB	32 dB	29/31 dB	39/43 dB
		Dock Level	+9/+6dB	31 dB	28/33 dB	39/43 dB
	2	Level Access	+3/0dB	32 dB	29/32 dB	41/43 dB
	3	Level Access	+3/0 dB	28 dB	26/28 dB	37/40 dB
		Dock Level	+6/+3 dB	25 dB	23/27 dB	37/40 dB
	4	Level Access	+3/0 dB	28 dB	26/28 dB	34/38 dB
		Overall		**38 dB**	**35/38 dB**	**43 dB**
Ashlea Road	1	Level Access	+3/0dB	30 dB	27/30 dB	40/41 dB
		Dock Level	+9/+6dB	31 dB	28/34 dB	40/41 dB
	2	Level Access	+3/0dB	29 dB	26/28 dB	37/40 dB
	3	Level Access	+3/0 dB	22 dB	20/23 dB	31/35 dB
		Dock Level	+6/+3 dB	19 dB	17/21 dB	31/35 dB
	4	Level Access	+3/0 dB	27 dB	24/26 dB	34/38 dB
		Overall		**36 dB**	**35/37 dB**	**41 dB**

APPENDIX C

ACOUSTIC TERMINOLOGY

Appendix C: Guide to 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.