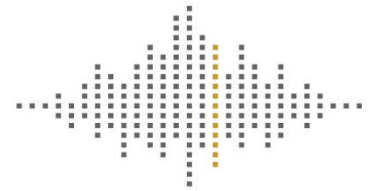


SHARPS REDMORE

ACOUSTIC CONSULTANTS ▪ Established 1990



Report

Bedford Road, Hitchin

**Environmental Noise
Assessment**

Prepared by

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Date 30 September 2025

Project No 2120881

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This report has been prepared with all reasonable skill, care and diligence commensurate with an acoustic consultancy practice under the terms and brief agreed with our client at that time. Sharps Redmore provides no duty or responsibility whatsoever to any third party who relies upon its content, recommendations or conclusions.

1.0 Introduction

- 1.1 Sharps Redmore (SR) have been instructed to undertake an environmental noise assessment to assess the suitability of the site at Bedford Road, Hitchin for residential use. The site location is shown in Figure 1 below:

FIGURE 1: Site Location



- 1.2 The site is currently open land located in Hitchin, within the administrative area of North Hertfordshire District Council (NHDC). The site is bounded by Bedford Road along the west and the adjacent Priory School to the south-east. To the east of a site is a 3G Sports pitch including floodlighting, which SR understands is used by the school during the day and community teams in outside of school hours.
- 1.3 Planning permission is being sought for a residential development. The proposed site layout is shown in Appendix A to this report. The objective of the assessment is to consider the impact of noise on the proposed residential properties. A similar application for 53 properties was submitted in 2022 (Planning Reference 22/03040/FP) however this was withdrawn before being determined by NHDC.
- 1.4 The objective of the assessment is to consider the impact of noise on the proposed residential properties. The assessment takes into account relevant noise policy and guidelines, including BS 8233:2014 Guidance on sound insulation and noise reduction for building and the Professional Practice Guidance (ProPG) jointly produced by the Association of Noise Consultants (ANC), Institute of Acoustics (IOA) and Chartered Institute of Environmental Health (CIEH). These are discussed along with local guidance within Section 2.0 of the report.
- 1.5 Details of the noise survey carried out are included in Section 3.0 of the report, with an assessment of the impact of noise, including noise from the use of the 3G pitch, in Section 4.0. The reports conclusions are summarised in Section 5.0.

2.0 Assessment methodology and criteria

Planning Policy Context

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 189 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 Policy Guidance (NPPG). The NPPG introduces the concept of a noise exposure hierarchy based on likely average response. The guidance contained in the NPPG is summarised in the table below:

TABLE 1: Noise Exposure Hierarchy

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

Perception	Examples of Outcomes	Increasing Effect Level	Action
		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
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.”

Design Guidance

National Guidance

BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings.

- 2.5 The current nationally recommended internal noise levels for dwellings are given in BS 8233:2014 'Guidance on Sound Insulation & Noise Reduction for Buildings'. BS 8233 recommends the following internal noise standards:

TABLE 2: Guideline noise values

BS 8233:2014 Table 4 – Indoor ambient noise levels for dwellings			
Activity	Location	0700 to 2300	2300 to 0700
Resting	Living room	35 dB $L_{Aeq,16hour}$	-
Dining	Dining room/area	40 dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$

- 2.6 The previous version (1999) of BS 8233 contained two guidelines for internal criteria; good and reasonable. The difference between the good and reasonable criteria was 5 dB. Whilst the 5 dB relaxation in noise criteria is not specifically referred to in the table above, Note 7 advises that *“where development is considered necessary or despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved.”*
- 2.7 There is no longer a L_{AMAX} standard for bedrooms in BS 8233. However, footnote 4 to Table 4 states that *“Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$ depending on the character and number of events per night. Sporadic noise events could require separate values.”* In this case, it is proposed that the previous BS8233 internal standard (also referenced in World Health Organisation Guidelines for Community Noise) is applied. This is 45 dB L_{AMAX} , inside bedrooms.

External Areas (Garden and Balconies)

- 2.8 For outdoor areas (i.e. balconies), BS 8233:2014 recommends that “it is desirable that the external noise level does not exceed 50 dB L_{AeqT} , with an upper guideline value of 55 dB L_{AeqT} ” However, the document recognises that these guideline values are not achievable in all circumstances and in higher noise areas, a compromise might be warranted. In such circumstances, development should be designed to achieve the lowest practicable levels in these external amenity spaces.
- 2.9 The Planning Practice Guidance on Noise, published on planningportal.gov.uk, gives further consideration relating to mitigating the impact of noise on residential developments and considers that noise may be partially offset if residents of the dwellings have access to:
- A relatively quiet façade (containing windows to habitable rooms as part of their dwelling;
 - A relatively quiet external amenity space for their sole use such as a balcony which is generally considered as desirable.
 - A relatively quiet nearby external space for use by a number of residents as part of the amenity of their dwellings, and/or;
 - A relatively quiet external, publicly accessible amenity space that is nearby (e.g. within a 5-minute walk)

ProPG: Planning and Noise – New Residential Development

- 2.10 The ProPG professional practice guidance on planning and noise has been jointly produced by the Chartered Institute of Environmental Health (CIEH), Institute of Acoustic (IOA) and Association of Noise Consultants (ANC).

- 2.11 The ProPG recommends a 2-stage approach; an initial assessment which identifies the risk of noise on the proposed planning application, and where the results indicate that noise requires further consideration a full assessment in the form of an Acoustic Design Statement (ADS) which would include four key elements as follows:
- Element 1 – demonstrating a “Good Acoustic Design Process”;
 - Element 2 – observing internal “Noise Level Guidelines.”
 - Element 3 – Undertaking an “External Amenity Area Noise Assessment”
 - Element 4 – Consideration of “Other Relevant Issues.”
- 2.12 The advice contained within ProPG is based on the policy objectives contained within the NPPF and the objective noise guidelines within BS 8233:2014. However, the ProPG does not constitute an official government code of practice.

Local Guidance

- 2.13 SR is not aware of any local design guidance for residential developments however in relation to the impact of noise from the use of the proposed 3G pitch to the west of the site, it is noted that in the acoustic report which accompanied the application that the Sport England Design Guidance Note “Artificial Grass Pitch (AGP) Acoustic – Planning Applications was agreed as a suitable standard.
- 2.14 This guidance document recommends that the determining noise criteria for AGP’s proximity to residential properties noise levels should be not to exceed a target criterion of 50 dB L_{Aeq1hr} , based on the WHO daytime guideline value above. The guide advises that for a site in an open area (i.e. with no mitigation) the suggested criteria would expect to be achieved 40m from the pitch edge.
- 2.15 The guidance also states that in some circumstances, an alternative assessment methodology may be appropriate such as where there are changes to an existing natural turf of AGP pitch, or where existing noise levels in the area are high. In these cases, regard should be had to the change in noise levels.

3.0 Noise Survey

January 2022

- 3.1 A survey of existing noise levels was carried out between 19th and 20th January 2022. Measurements were carried out at three locations as shown in Figure 2 below. The measurement locations were chosen to represent the proposed residential properties.

FIGURE 2: Measurement Location



TABLE 4: Survey Locations

Location	Site Description
NL 1	Norsonic 140 Sound Level Meter set up at the northern boundary of the site approximately 25m from Bedford Road. Microphone located on a tripod 1.5m above ground level in free-field conditions. Measurements were recorded continually at 5-minute intervals from 1800 on 19th January to 0930 hours on 1230 hrs on 20th January 2022
NL 2	Norsonic 118 Sound Level meter set up on eastern boundary of site. Attended measurements taken in car park of existing site. Microphone located on a tripod 1.5m above ground level in free-field conditions. Measurements were recorded continually at 5-minute intervals from 1800 on 19th January to 0930 hours on 1230 hrs on 20th January 2022.
NL3	Attended measurements recorded at location in centre of site, approx. 25m from Bedford Road in free-field conditions. Measurements recorded over a three-hour period between 1000 hrs and 1300 hours in accordance with the shortened measurement procedure in the Calculation of Road Traffic Noise 1988 (CRTN)

- 3.2 At each location the sound level meter was calibrated before and after the survey with no drift in accuracy noted. Weather conditions during the survey were noted from site observations and on-line weather data and were dry, cold with light northerly/westerly breeze. Weather conditions were suitable for taking sound measurements.

- 3.3 Full details of the survey results are included in Appendix B and summarised in Table 5 below.

TABLE 5: Measured Noise Levels

Location	Daytime (0700 – 2300 hrs)	Night time (2300 – 0700 hrs)	
	L _{Aeq16hr}	L _{Aeq8hr}	L _{Afmax}
Location NL1	59 dB	53 dB	69 dB
Location NL2	53 dB	46 dB	59 dB
Location NL3	59 dB*	--	--

*Based on shortened measurement procedure in CRTN

- 3.4 Existing noise levels were dominated by road traffic noise on Bedford Road.

September 2025

- 3.5 Due to the time that had elapsed since the last survey a site visit was carried out on 9 September 2025 to update the survey and identify any changes in the area which have taken place since 2022, these included the 3G Pitch to the east of the site. Measurements were taken at two locations close to locations NL2 and NL3 above.

- 3.6 At location NL3 measurements were taken in accordance with the shortened measurement procedure in the Calculation of Road Traffic Noise. This method enables, in areas dominated by road traffic, the daytime noise levels L_{Aeq16hr} to be determined from measurements carried out over a 3-hour period between 1000 and 1700 hours by using the following formulae:

$L_{A10(18\text{-hour})} = L_{A10(3\text{ hour})} - 1\text{dB}$, which is then corrected to provide a 16-hour L_{Aeq}, as BS 8233 states by:

$$L_{Aeq16hr} = L_{A10(18\text{-hour})} - 2\text{dB}$$

- 3.7 The results of the survey are shown in the Table below:

TABLE 6: Survey Results – 9 September 2025 NL3

	Noise Level dB		
	L _{Aeq1hr}	L _{A10,1hr}	L _{A90 1hr}
11:00 – 12:00	59.6	62.8	50.6
12:00 – 13:00	61.3	62.6	50.8
13:00 – 14:00	59.2	62.5	51.7

- 3.8 Using the above formulae the daytime ambient noise level has been calculated to be 59.6 dB. This is consistent with noise levels measured in 2022. Maximum noise levels L_{Afmax} were noted from car pass-bys and found to be the range of 68 – 71 dB, which is consistent with those measured previously.
- 3.9 Since the previously survey was carried out a 3G pitch has been constructed on land to the east of the site, as advised in section 1 of this report SR understands that this is used by the school during day and community groups outside school hours. During the survey the pitch was being used by the school with noise from pitch activity just noticeable whilst on site.

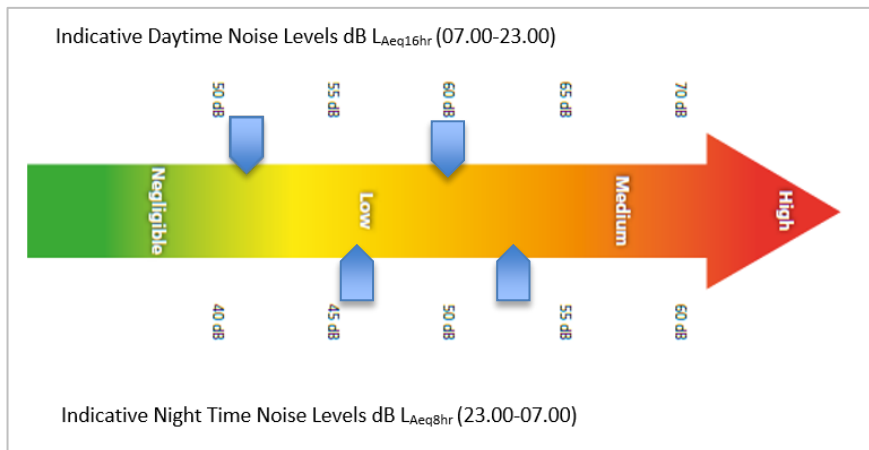
- 3.10 Noise levels were measured at NL2, which is the closest point to the pitch, with ambient noise levels of 52 dB $L_{Aeq1hour}$ recorded. This is in line with the noise levels measured previously before the pitch was constructed which confirmed the subjective opinion that although noise from pitch activity could be heard it was not a level that which was considered intrusive.

4.0 Noise Assessment

Road Traffic Noise - Initial Noise Assessment

- 4.1 In line with Using the ProPG Guidance Figure 1 (as shown below) the initial site noise risk assessment indicated a low/medium risk. The initial site noise risk assessment does not include the impact of any mitigation measures that can be incorporated into the design of the project but is intended to give an indication as to the extent of the acoustic issues that will be faced.

FIGURE 3 ProPG Initial Noise assessment



- 4.2 The initial noise assessment indicates that there will be a low impact during the day and night time period. ProPG advice states that *“for at low noise levels, the site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and demonstrated in and ADS (Acoustic Design Statement) which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development.”*
- 4.3 ProPG goes on to state that *“as noise levels increase the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development.”*

Noise Assessment

- 4.4 To determine noise levels across the site, SR has used SoundPLAN computer modelling software to predict noise levels from road traffic in accordance with the Calculation of Road Traffic Noise (CRTN) 1988.
- 4.5 SoundPLAN calculates L_{AeqT} and $L_{A_{fmax}}$ levels at defined receptors in accordance with the appropriate standards. The calculation is based on a number of input parameters (as outlined in Section 3 of this report), including source noise level data, barriers, receptor positions, topography and intervening ground conditions. Source data has been determined from on-site measurements as detailed in section 3.0 of the report.
- 4.6 The noise contours can be plotted at defined intervals, and height above ground level. The resulting noise maps are shown in Figure 4 and 6 below.

FIGURE 4 – Daytime $L_{Aeq16hr}$



FIGURE 5 – Night time L_{Aeq8hr} dB



FIGURE 6 – Night time L_{Amax} dB



Internal Noise Levels

- 4.8 Based on the assessment results above assuming a 15 dB loss through a partially open window, where daytime noise levels exceed 50 dB $L_{Aeq16hr}$ and night time noise levels exceed 45 dB L_{Aeq8hr} and 60 dB L_{Amax} internal noise levels are likely to be exceed the recommended criteria in BS 8233:2014. This is not unusual for residential developments in urban areas. The main consideration in relation to the application is the internal noise levels within bedrooms and living rooms for the properties closest and facing towards Bedford Road.
- 4.9 The octave band levels in Table 7 are associated with the resultant levels above and have been used as part of the sound insulation assessment for the proposed residential properties.

TABLE 7: Octave Band Linear Frequency Spectra

Parameter	Octave Band Centre Frequency Hz								dBA
	63	125	250	500	1k	2k	4k	8k	
Day dB L_{eq}	64	58	54	48	58	52	42	30	59
Night typical dB L_{max}	69	62	61	56	69	58	44	26	69

- 4.10 The minimum airborne sound reduction performance requirements of the envelope building elements have been calculated. These are given below in terms of octave band 'R' values for specification purposes.
- 4.11 Suitable products shall provide evidence of compliance in accordance with BS EN ISO 10140 Part:2010 and rated in accordance with BS EN ISO 717 Part 1:2013, or equivalent or superseded version of the standard.
- 4.12 The weakest point of any façade is the windows, however the façades as a whole need to achieve a sufficient sound insulation performance against measured ambient noise.
- 4.13 For the purpose of the assessment it has been assumed that the non-glazed elements of the façade system must meet the minimum sound insulation requirements detailed in Table 8.

TABLE 8 – Non-glazed wall specification to all residential rooms

Position	Octave band center frequency Hz - R dB						
	63	125	250	500	1k	2k	4k
All elevations	35	40	45	50	55	55	55

Residential Window Systems

- 4.13 The window system must be considered as the glazing element, seals and frame combined. Based on typical room and window sizes the minimum sound reduction indices are detailed in Table 9.

TABLE 9 - Window system specifications

R dB Octave band center frequency Hz							R _w dB	Example of typical construction
63	125	250	500	1k	2k	4k		
21	24	18	25	36	39	31	30	4-12-4

- 4.14 The above sound insulation requirements are the overall performances for the window systems (including frame, seal and glass) and can be achieved through standard thermal double glazing. Note that the R_w figure and the example constructions are given for indicative purposes in relation to the planning application to demonstrate suitability of the site for residential use.

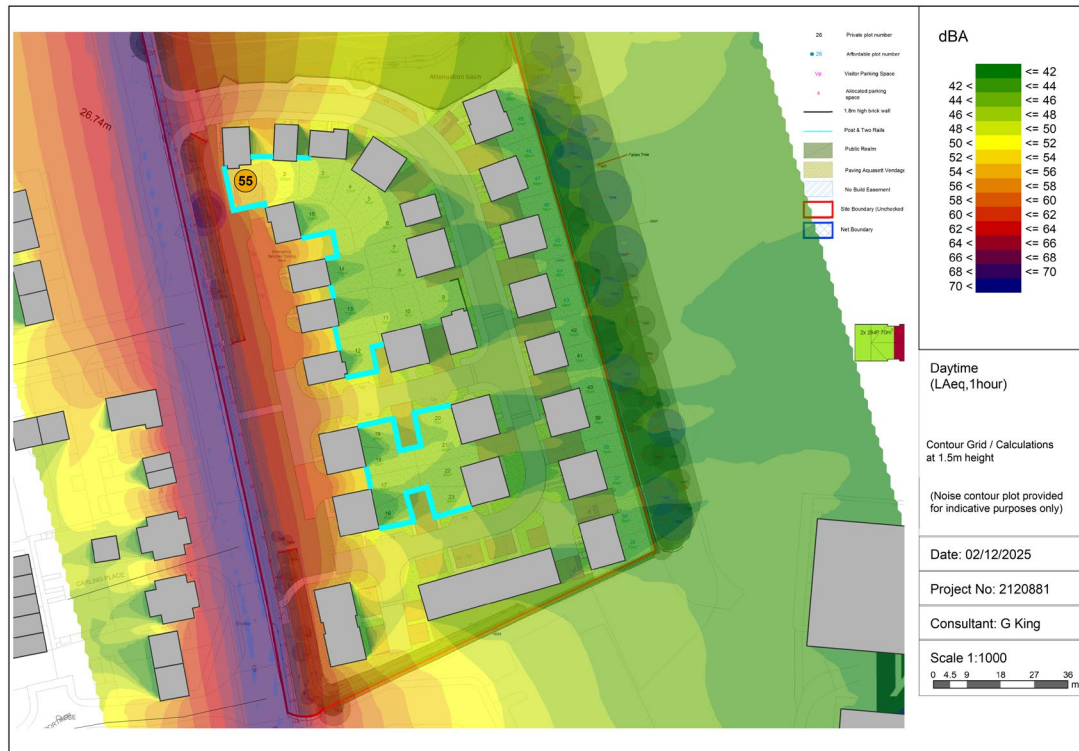
Acoustic performance of façade ventilation

- 4.15 Where windows are required to be closed to achieve the internal noise levels in BS 8233:2014 alternative means of ventilation should be provided. The ventilation strategy for the properties will also depend on whether measures are required to overcome over-heating. This is discussed in further detail below.
- 4.16 The R_w figure and the example constructions are given for indicative purposes in relation to the planning application to demonstrate suitability of the site for residential use. Detailed noise break-in calculation would be required at the detailed design stage, these would take into account the noise levels over the site, final room layouts, window dimensions, ventilation proposals and any other mitigation measures that may be designed into the site.

External Noise Levels

- 4.17 BS 8233 states that it is desirable that noise in outdoor living areas are between 50 - 55 dB $L_{Aeq16hr}$. As shown in Figure 7 below in all cases will be below 55 dB $L_{Aeq16hr}$ and for the majority of plots below 50 dB L_{Aeq8hr} .

FIGURE 7: Daytime external noise levels $L_{Aeq16hr}$ dB



- 4.18 The final element of a detailed noise assessment is consideration of other relevant issues including unintended adverse consequences.
- 4.19 As advised above to enable the internal noise guidelines in BS 8233 to be achieved it will be necessary for some properties to have windows closed. As referred to above this will impact on the ventilation strategy for the properties including measures to overcome overheating.
- 4.20 Guidance on noise and overheating is provided in the Building Regulations Approved Document AD-O which states that windows are likely to be closed during sleeping hours if internal noise levels in bedrooms exceeds the following limits:
- 40 dB L_{AeqT} averaged over 8 hours (between 11pm and 7am)
 - 55 dB $L_{A_{fmax}}$ more than 10 times a night (between 11pm and 7am). resulting from the acoustic design and wider planning objectives.
- 4.21 Further guidance on interpretation of AD-O is provided in the guidance note on AD-O published by the Association of Noise Consultants (ANC) and Institute of Acoustics (IOA). Based on the internal limits above, the AD-O noise guide states where external noise levels

are above the following external noise limits then it will be necessary to conduct thermal dynamic modelling to show compliance with requirements of AD-O.

TABLE 10 – AD-O Noise Guide – External noise levels

Parameter	Moderate Risk Location
$L_{Aeq,8hr}$ averaged over 8 hours (between 11pm and 7am)	50 dB
L_{AFmax} more than 10 times a night (between 11pm and 7am)	65 dB

- 4.22 As shown in Figures 6 and 7 above for plots 3-11, 16-23, 28- 39 and Apartment Block B the predicted noise levels will be below the criteria in Table 10 on all facades and therefore it is likely that windows will be able to be open to alleviate any over-heating issues. For all remaining plots whether windows are able to be open to alleviate over-heating will depend on the extent of how far windows will need to be open.

Impact of other noise sources

- 4.23 As described in section 1.0 of the report planning permission to the east of the site is a 3G pitch which SR understand is used by the school during day and community groups during the evening period.
- 4.24 As part of the application for the pitch a noise assessment, prepared by Spectrum Acoustics, was carried out. This assessment included details of the consultation with the Environmental Health Department at NHDC, who confirmed that noise levels from pitch activity should be below 50 dB L_{Aeq1hr} in accordance with the Sport England Guide. As advised in paragraph 2.15 for a site in an open area (i.e. with no mitigation) the suggested criteria would expect to be achieved 40m from the pitch edge.
- 4.25 As advised in section 3.0 of this report as part of the updated survey measurements were taken from use of the pitch during school hours. Noise levels at NL2 were 52 dB and no different to those measured before the pitch was constructed.
- 4.26 At the closest point the nearest properties will 40m from 3G pitch and therefore noise levels will be below the suggested criteria within the Sport England Guide and recommendations in the Spectrum Acoustics report.
- 4.27 Taking into account the observations and measurements made at the time of the survey it is not considered that noise from use of the 3G pitch will cause adverse impact to future residents in line with the policy aims of the NPPF.

5.0 Conclusions

- 5.1 Sharps Redmore has carried out an assessment of the impact on from road traffic on the proposed residential use of land east of Bedford Road, Hitchin.
- 5.2 It is concluded that the site is suitable for residential use subject to the design measures which delivers effective mitigation to reduce the impact of noise. The measures identified are in line with the good acoustic design principles as required by national guidance.
- 5.3 Taking into account the measures available it is concluded that the proposed sites can be developed to achieve internal and external noise levels in line with the guidance contained within BS 8233:2014. The site will be suitable for residential use and noise levels from road traffic will not cause unacceptable impacts to future residents.
- 5.4 Noise from use of the proposed 3G pitch has been considered and taking into account the distance separation noise from pitch activity will be below the guidance levels suggested in the Sport England Guide.

APPENDIX A

SITE LAYOUT

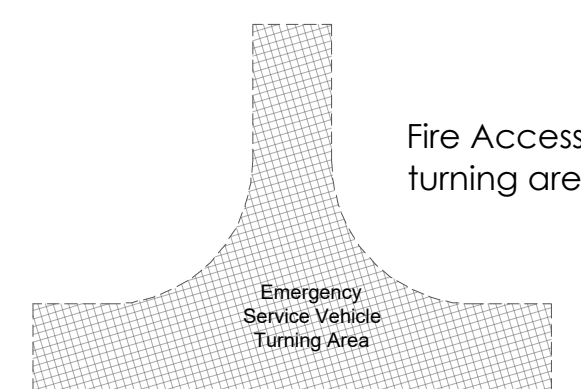
No	Ref	Beds	Storey
2	Type A	2	2
4	Type B	3	2
10	Type C	3	2
2	Type D	3	2
2	Type E	4	2
2	Type F	4	2
3	Type G	4	2
25			

No	Ref	Beds	Storey
3	1B Flat	1	1
8	2B Flat	2	1
6	Type HA	2	2
3	Type HB (WC)	2	2
5	Type HC	3	2
25			

50

26	Private plot number
26	Affordable plot number
Vp	Visitor Parking Space
6	Allocated parking space
CSa	House Type Reference
	1.8m high close board fence
	1.8m high brick wall
	1.8m high close board gate
	Post & Two Rails
	2.5m x 5.0m Parking space
	3.3m x 5.5m Parking space
	Disable parking
	Public Realm
	Front Garden
	Rear Garden
	Feature Paved Space
	Paving Natural
	Road
	Footpath
	Existing vegetation
	Existing Trees Outline
	Existing Trees removed
	Proposed Tree Planting
	Hedge Shade 1

Fire Access Vehicular
turning area

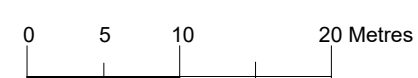


Bedford Road
Hitchin

Development Layout

Drawing Scale:-
1 / 500 @ A1

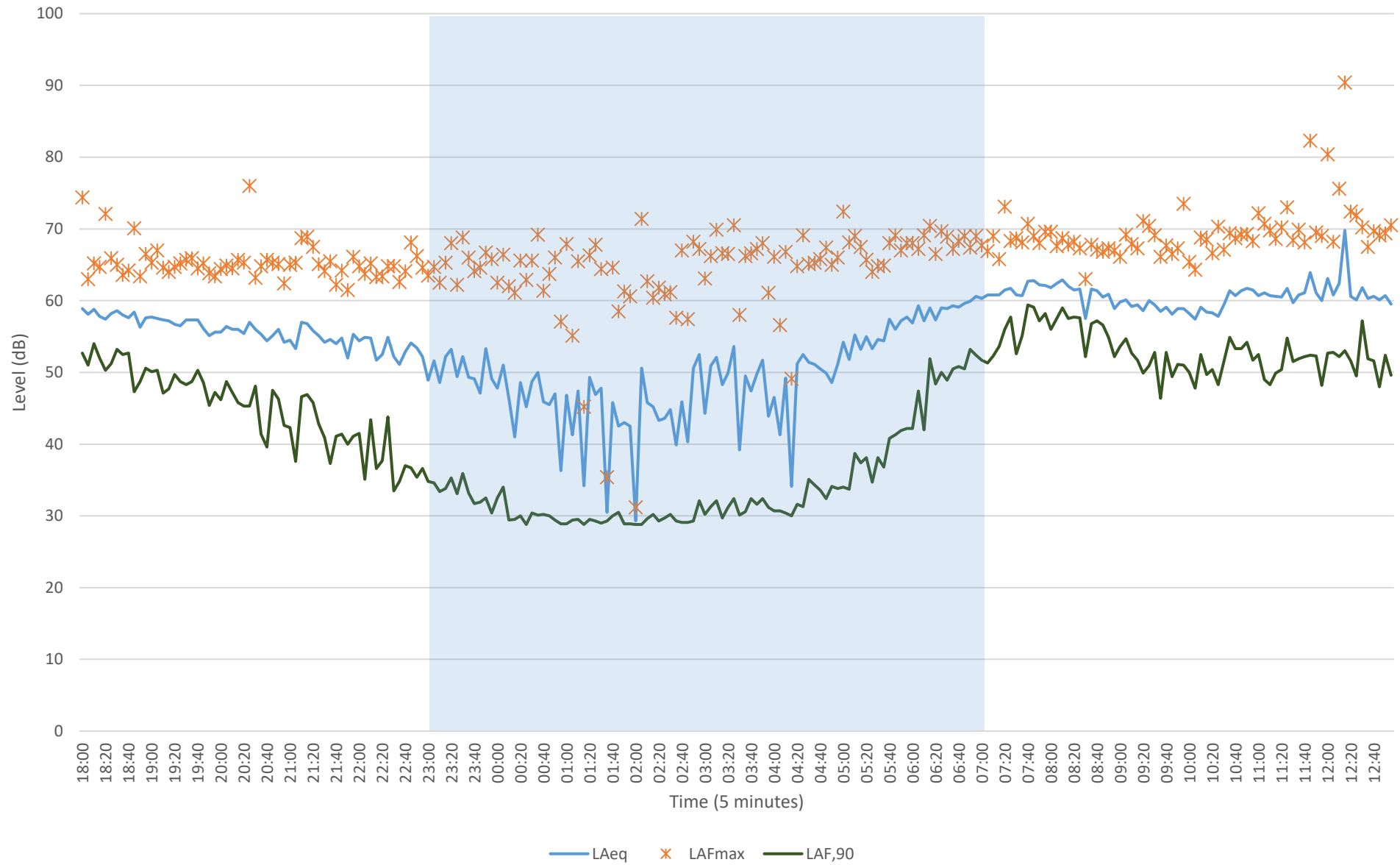
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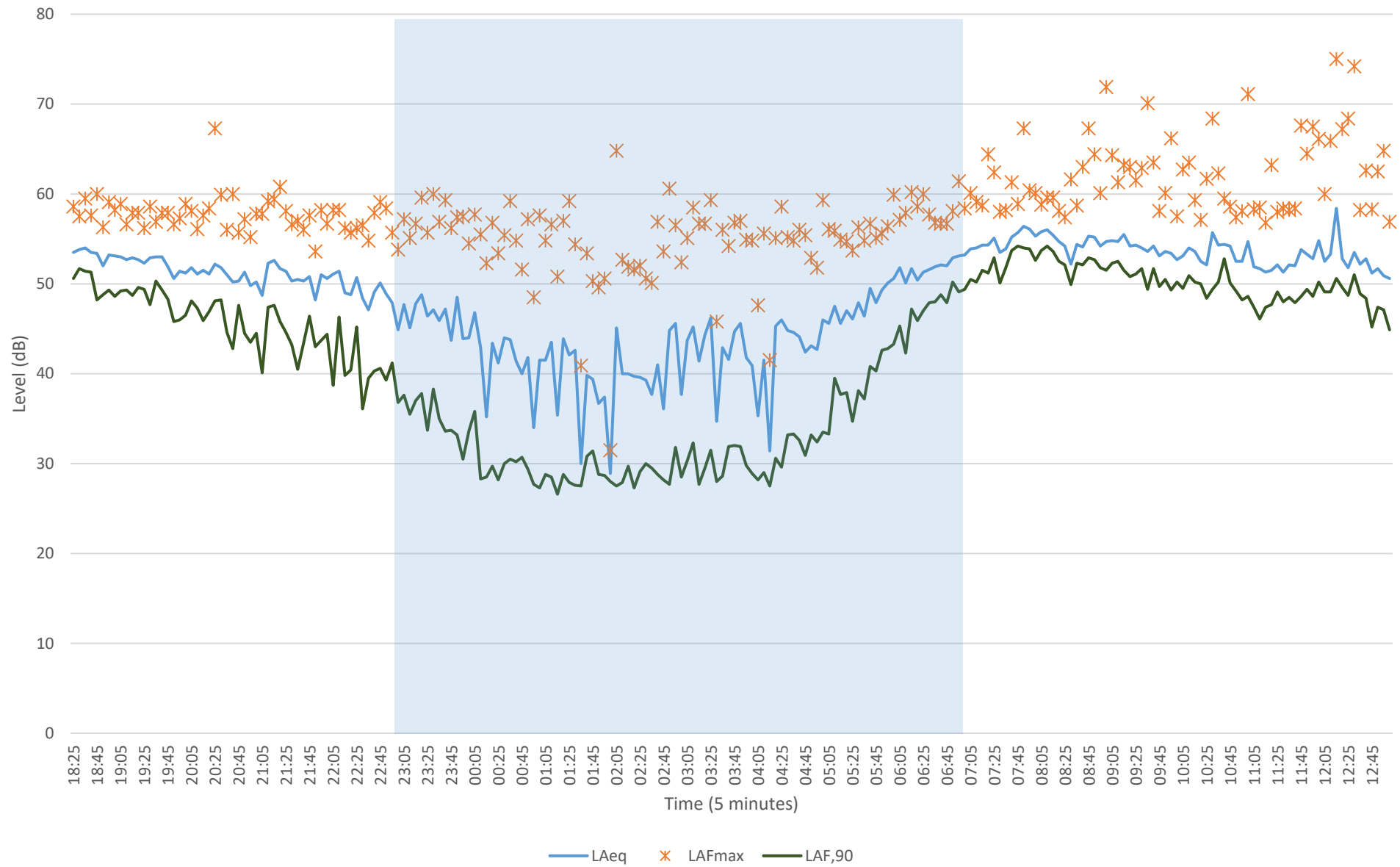
APPENDIX B

NOISE SURVEY RESULTS

Location 1 19th and 20th January 2022



Location 2- 19th and 20th January 2022



Appendix B3 – Survey Results NL3

Date	LAeq	LAFmax	LAFmin	LAF,10	LAF,90
(2022/01/20 10:15:00.00)	58.9	65.4	49.6	61.7	53.1
(2022/01/20 10:20:33.00)	59.1	66.6	50.3	61.8	53.7
(2022/01/20 10:27:00.00)	60.1	69.3	46.6	63.6	50.5
(2022/01/20 10:32:22.00)	59.4	67.7	49.7	62.1	54.1
(2022/01/20 10:38:00.00)	58.4	67.1	49.8	61.1	52.9
(2022/01/20 10:43:28.00)	60.2	66.2	49.3	62.8	53.5
(2022/01/20 10:49:00.00)	59.5	67	49.6	62.5	53.9
(2022/01/20 10:54:23.00)	59.2	67	47.3	62	54.2
(2022/01/20 11:00:17.00)	58.9	71.6	49.7	61.8	52.6
(2022/01/20 11:06:01.00)	59.4	66.5	49.6	62.2	52.6
(2022/01/20 11:11:23.00)	58.7	65.9	43.5	61.7	51.7
(2022/01/20 12:30:00.00)	59.2	68.7	50.3	61.8	54.2
(2022/01/20 12:35:28.00)	59	68.2	47.9	62.1	51.6
(2022/01/20 12:43:00.00)	58.7	67.4	46.2	61.7	52.2

APPENDIX C

ACOUSTIC TERMINOLOGY

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 μ Pa, 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.