

Andersons House, Hitchen

Change of Use from Care Home (Use Class C2) to
Supported Hostel Accommodation

Noise Impact Assessment

(Discharge of Condition 4 of Planning Permission 24/O2173/FP)

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Document Approvals

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For Information

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1.0 INTRODUCTION

- 1.1 Conditional planning permission for the change of use of Andersons House from use as a care home (Use Class C2) to supported hostel accommodation (sui generis) was granted by North Herts Council on 11 December 2024. Condition 4 of the permission requires:

"Prior to the commencement of use hereby permitted details of a Noise Management Plan shall be submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details."

- 1.2 The reasoning for the condition is:

"....to ensure the use is managed effectively in the interest of the amenity and safety of both the occupiers of the development and the occupiers of the property within the vicinity of the site".

- 1.3 Quantum Acoustics Limited has been instructed by One YMCA to undertake an environmental noise survey of the site and provide technical assistance to develop a Noise Management Plan.

- 1.4 This report is structured as follows:

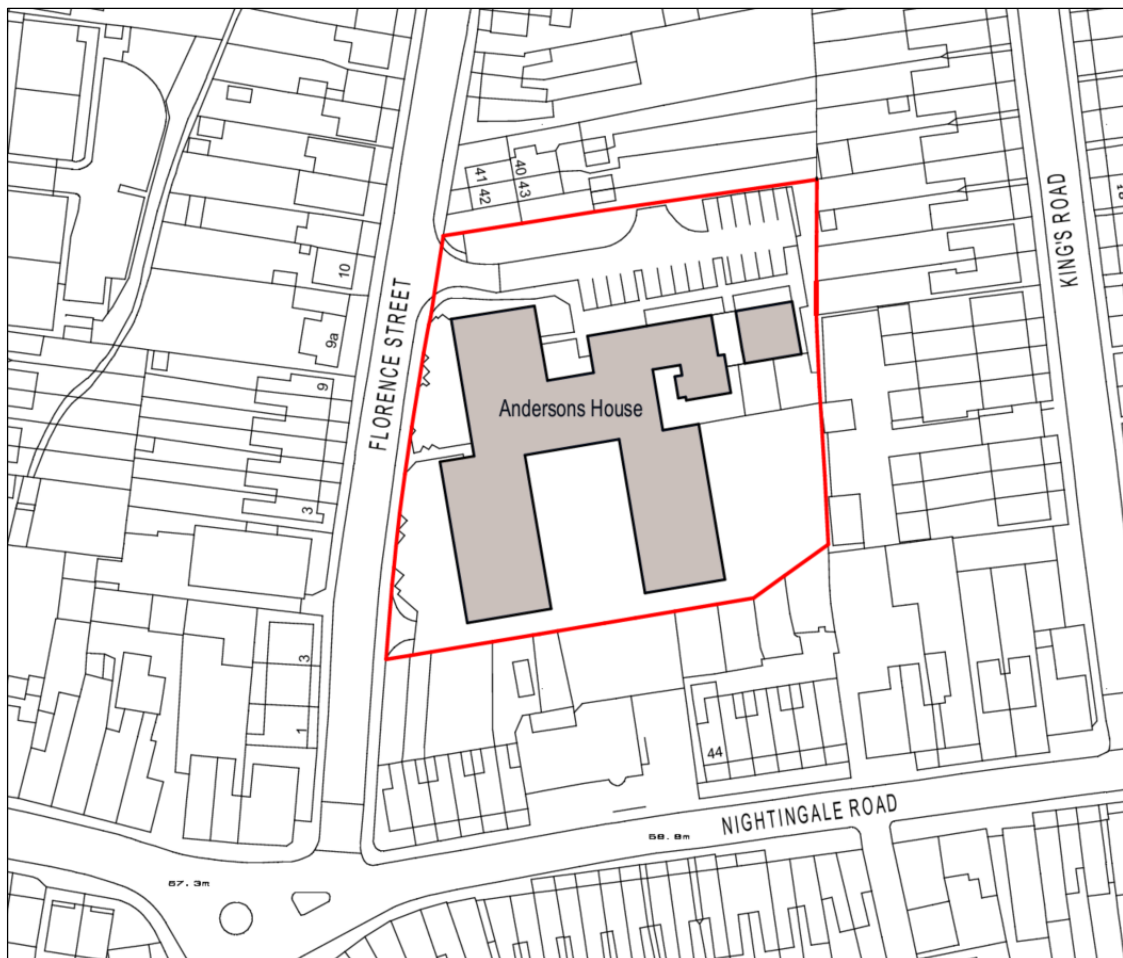
- Section 2 outlines the location of site and proximity of existing noise sensitive receptors;
- Section 3 describes the permitted development;
- Section 4 presents the results of noise monitoring;
- Section 5 reviews potential noise impacts associated with the operation of the hostel and outlines potential noise mitigation measures that could be implemented within a Noise Management Plan;
- Conclusions are set out in Section 6.

- 1.5 A glossary of acoustic terminology is provided at Appendix A to assist with the technical terms and acoustic nomenclature used in this report.

2.0 SITE LOCATION

- 2.1 Andersons House is a two storey brick built building with associated grounds and car parking located on the east side of Florence Street, Hitchen, as shown in Figure 2.1 below.

Figure 2.1: Site Location Plan



- 2.2 The northern extent of the eastern site boundary is formed with the rear gardens of 55 to 58 Kings Road, with the southern extent adjoining a parking court and garages to the rear of nos. 59 to 67 Kings Road.
- 2.3 The southern site boundary is formed with the rear amenity spaces of 34 to 39, 44-49 Nightingale Road and a car park serving the "Berry House" veterinary practice.
- 2.4 To the west the site has a wide frontage onto Florence Street with the car parking areas serving the property (on the northern side of the building) adjoining the side boundary of nos. 42 and 43 Florence Street,

3.0 GENERAL ARRANGEMENT SITE

- 3.1 The approved hostel will meet the needs of young people (aged 18-25) and adults.
- 3.2 The hostel will provide a mix of single occupancy and shared rooms (a total of 14 no. 1-bedroom units and 32 2-bedroom units), alongside two 4-bed houses. The ground floor will provide two lounges for use by residents and welfare and support areas.
- 3.3 The approved general arrangement of the hostel is shown in Figure 3.1 below and 3.2 overleaf.

Figure 3.1: Proposed General Arrangement of Ground Floor



Figure 3.2: Proposed General Arrangement of 1st Floor

- 3.4 Rooms will benefit from private amenity spaces in the form of inset balconies (highlighted in yellow in Figures 3.1 and 3.2 above).
- 3.5 Externally, residents will be given access to dedicated amenity areas within the existing landscaped gardens, as illustrated in Figure 3.3 overleaf). The amenity spaces (highlighted in yellow) are demarked by a mix of the massing of the existing building, existing boundary treatments and 1.8m high palisade fencing within the grounds.

Figure 3.3: External Amenity Spaces



4.0 EXISTING NOISE ENVIRONMENT

- 4.1 In order to establish existing ambient noise levels characterising the environs of the site, an environmental noise survey was undertaken over a notional two day period between 7 and 11 February 2025.

Measurement Locations

- 4.2 Noise measurements were made at two locations, as shown in Figure 4.1 below

Figure 4.1: Noise Monitoring Location



- 4.3 The measurement microphone at Position 1 and 2 were boom pole mounted along the site boundary at a height of approximately 2.4m above local ground level. The measurement microphone at Position 3 was boom pole mounted at a height of around 1.5m above local ground level.

Equipment

- 4.4 The following equipment was used for the survey:

Table 4.1: Measurement Instrumentation

Position	Description	Manufacturer	Type	Serial Number
1	Sound Level Analyser	Svantek	971A	124674
2	Sound Level Analyser	Svantek	971A	143557
3	Sound Level Datalogger	Convergence Instruments	nsrt_mk4	CFr8j3W4UX89gBNwT4hZID
1 & 2	Acoustic Calibrator	Svantek	SV 33B	99005
3	Acoustic Calibrator	Convergence Instruments	AWA 6022A	2020959

4.5 A field calibration check of both instruments was undertaken using a hand held acoustic calibrator prior to and on completion of the survey, with no significant draft in calibration observed.

4.6 All equipment holds current laboratory calibration certificates traceable to national standards. Calibration certificates for the equipment are available upon request.

Measurement Procedure

4.7 The monitoring equipment at Position 1 was configured to record the L_{A90} , L_{Aeq} and L_{Amax} , fast sound pressure level over consecutive 15-minute periods to provide a detailed time history profile showing fluctuations in noise levels. The equipment was also configured to undertake higher resolution logging and audio recording to assist with the identification and discrimination of noise events.

4.8 The sound level analysers at Positions 2 and 3 were configured to continuously log "fast" A-weighted sound pressure levels. The data has been post-processed using Convergence Instruments "NSTR-AutoCalc" software to determine 15-minute $L_{Aeq, 15min}$ and L_{Amax} noise metrics.

Results

4.9 Detailed time history graphs showing the A-weighted L_{90} , L_{eq} and L_{max} noise levels measured during each consecutive 15-minute period of the survey are shown in Figures 4.2 to 4.4 overleaf.

Figure 4.2: Noise Monitoring Results: Position 1 (Southern Boundary)

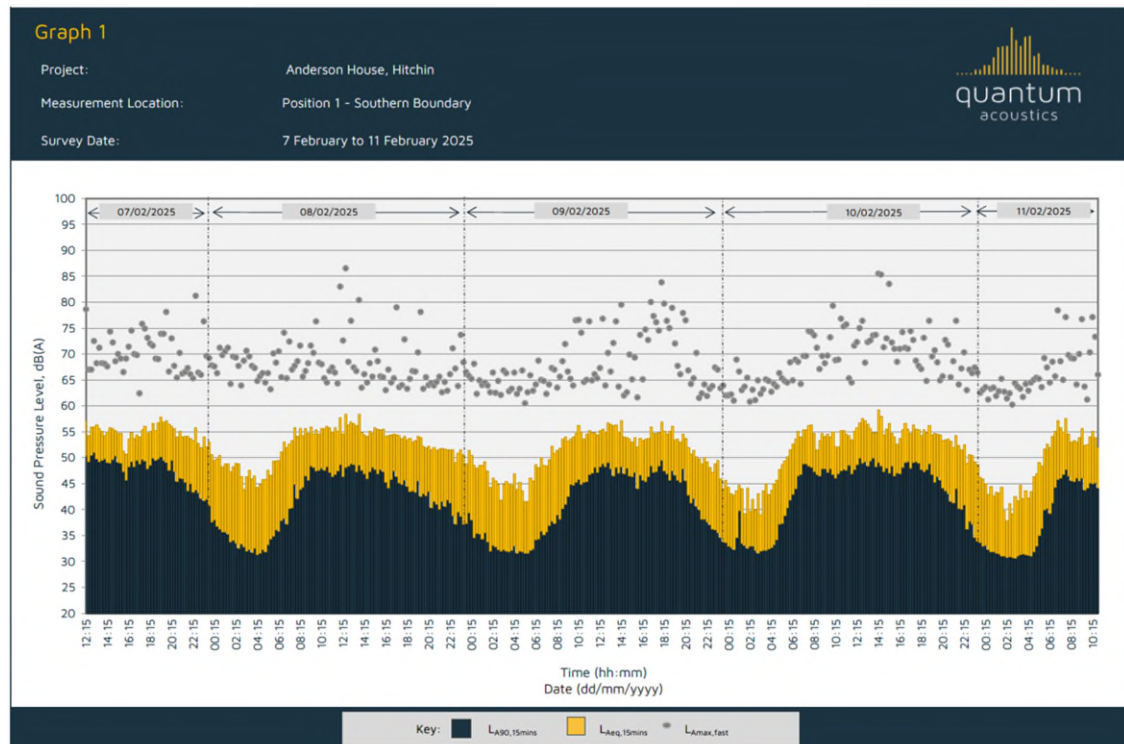


Figure 4.3: Noise Monitoring Results: Position 2 (Towards South East Corner of Site)

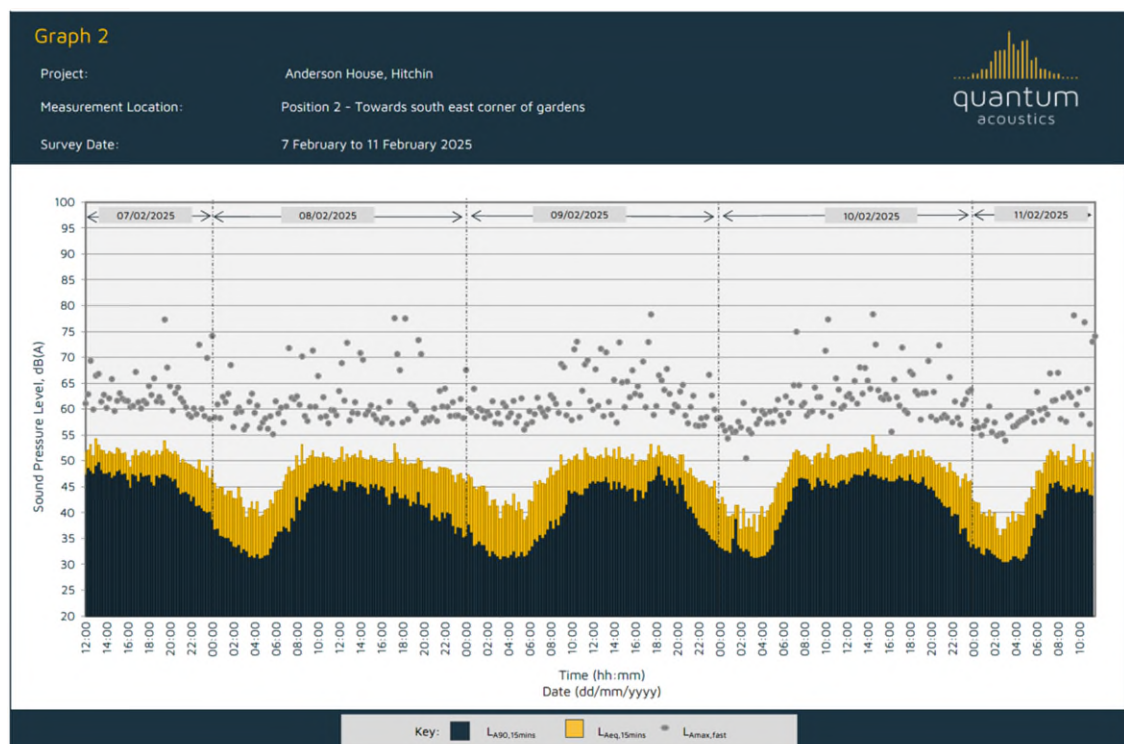
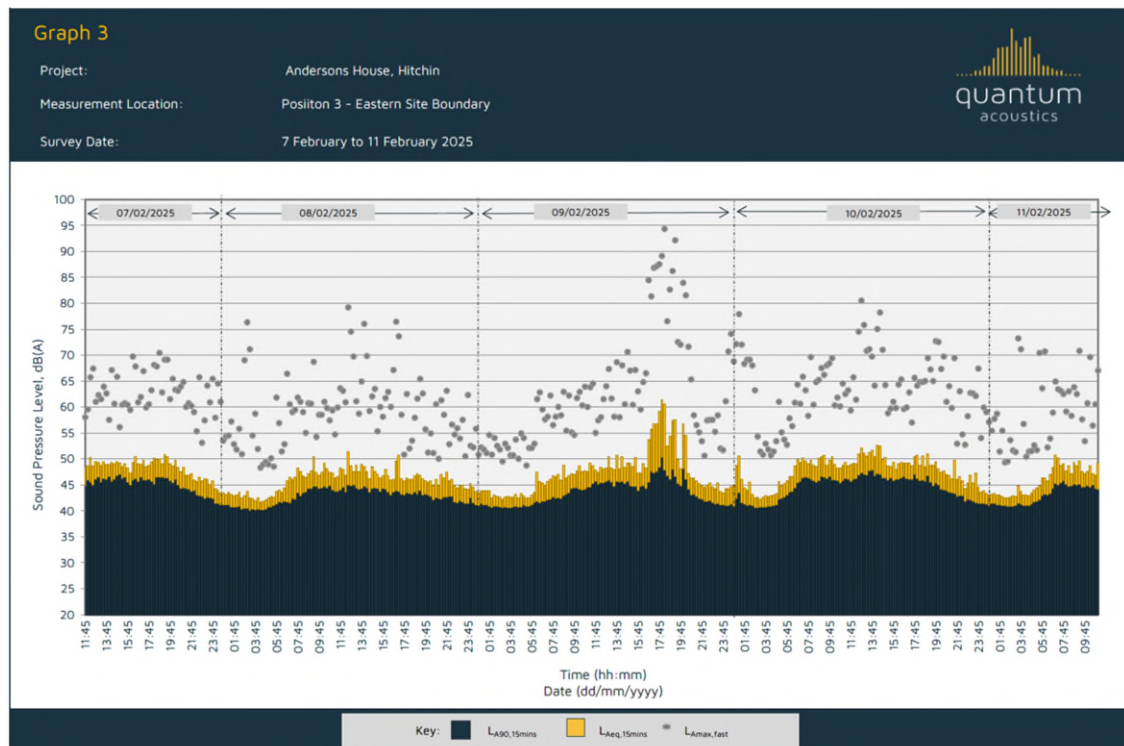


Figure 4.4: Noise Monitoring Results: Position 3 (Eastern Site Boundary)



4.10 Higher resolution copies of the graphs are attached at Appendix B.

Observations

- 4.11 During site attendances, it was noted that noise levels at both measurement locations were dominated by a mix of local and distant road traffic noise.
- 4.12 The measurement results for Position 1 and 2 show very similar diurnal fluctuations in sound levels, with slightly higher sound levels characterising Position 1, compared with Position 2. This is likely due to an increased contribution of road traffic at this location from the A505, compared with Position 2, which is likely to benefit from increased screening from neighbouring buildings.
- 4.13 Noise levels at Position 3 show somewhat “flatter” pattern with a lesser difference between daytime and night-time noise levels compared with the measurements at Positions 1 and 2. This is due to the sound of trickling water being pumped into the pond located within the eastern garden area which tended to increase underlying background sound levels.

Weather Conditions

- 4.14 Whilst weather conditions during the survey were not actively measured, weather conditions at the time of equipment installation and removal were fine and dry, with light winds. Publicly

available historic weather data for the survey periods indicates the following typical conditions:

Table 4.2: Summary of Weather Conditions

7 February 2025	8 February 2025	9 February 2025
Temperature: 1 to 3°C Pressure: 1016 – 1035 hPa Humidity: 81 – 97% Average wind speed: 4km/h Average wind direction: NNE Precipitation: 4mm	Temperature: 2 to 6°C Pressure: 1014 – 1021 hPa Humidity range: 96 – 98% Average wind speed: 1km/h Average wind direction: NNE Precipitation: 1.5mm	Temperature: -2 to 7°C Pressure: 1021 – 1028 hPa Humidity range: 89 – 98% Average wind speed: 1 km/h Average wind direction: NNE Precipitation: 6 mm
10 February 2025	11 February 2025	
Temperature: 2 to 4°C Pressure: 1018 – 1028 hPa Humidity: 90 – 97% Average wind speed: 3km/h Average wind direction: NNE Precipitation: 4mm	Temperature: 3 to 4°C Pressure: 1015 – 1018 hPa Humidity range: 93 – 98% Average wind speed: 1km/h Average wind direction: Var Precipitation: 0mm	

Data Analysis

- 4.15 A summary of the measured daytime ($L_{Aeq,16\text{ hour}}$) and night-time ($L_{Aeq,8\text{ hour}}$ and $L_{Amax,fast}$) sound levels at each location are presented in the Table 5.3 overleaf.

Table 4.3: Measured Noise Levels

Location	Date	Measured Sound Pressure Level, dB re 20µPa					
		Daytime (07.00 to 23.00 hours)			Night-time (23.00 to 07.00 hours)		
		Typical L _{A90,T}	L _{Aeq,16hour}	Typical L _{Amax,fast}	Typical L _{A90,T}	L _{Aeq,8hour}	Typical L _{Amax,fast}
1	7/02/2025	45* ¹	55* ¹	75* ¹	32	49	71
	8/02/2025	44	55	76	32	48	68
	9/03/2025	38	54	77	32	48	68
	10/03/2025	42	55	76	31	48	67
	11/03/2025	44* ¹	55* ¹	77* ¹	--	--	--
2	7/02/2025	44* ¹	51* ¹	67* ¹	31	44	63
	8/02/2025	41	50	71	32	44	62
	9/03/2025	37	50	71	32	44	62
	10/03/2025	42	51	71	31	44	62
	11/03/2025	44* ¹	51* ¹	75* ¹	--	--	--
3	27/02/2025	44* ¹	49* ¹	68* ¹	40	44	66
	28/02/2025	43	47	71	41	44	59
	01/03/2025	42	47	70	41	45	67
	02/03/2025	43	49	72	41	45	72
	03/03/2025	44* ¹	49* ¹	68* ¹	--	--	--
* ¹ Data is average for available time period							

5.0 POTENTIAL NOISE IMPACTS

General

5.1 Potential noise impacts associated with the use of the hostel include:

- The “break-out” of activity noise from internal areas of the hostel;
- Noise emissions from building services plant;
- Noise from residents in private amenity spaces (e.g. balconies); and
- Noise from residents in communal amenity spaces.

Noise Control Aims

- 5.2 The following sections review the potential significance of noise from the above noise source in the context of the existing noise climate characterising the site, as reported in Section 4. The aim is to implement noise mitigation strategies that should assist in reducing operational noise to a minimum and avoiding any significant observed effect (in line with the general imperative for noise management set out in paragraph 198 of the NPPF¹).
- 5.3 When considering the potential significance of people related activity noise, the noise thresholds set out in Table 5.1 overleaf will be taken as an indicator of a “*Lowest Observed Adverse Effect Level*” (LOAEL) and management policies should be implemented to aim to reduce operational noise to these levels as far as practicable.

¹ Paragraph 198 of the NPPF States:

“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;...”*

Table 5.1: Noise Threshold Aims

Time Period	Noise Thresholds	
	$L_{Aeq,T}$ (dB)	$L_{Amax,fast}$ (dB)
Daytime (07.00 to 23.00 hours)	45	60
Night-time (23.00 to 07.00 hours)	40	55

- 5.4 The above values are essentially aligned with “*No Adverse Effect Levels*” determined from community noise guidance published by the World Health Organisation².
- 5.5 The suggested threshold metrics include a measure of both the $L_{Aeq,T}$ noise metric (which provides a measure of the “average” sound level) and the $L_{Amax,fast}$ metric (which is an indicator of the transient magnitude of noise from an individual event).
- 5.6 For additional context, the above values would effectively mean that operational noise is controlled to values that are below existing ambient noise levels characterising the site and should not therefore have any dominant effect on the existing prevailing noise environment. To add some additional context to this, it can be seen that:
- The proposed daytime threshold of 45dB $L_{Aeq,T}$ is 2-10dB below existing measured ambient sound levels (47 to 55dB $L_{Aeq,T}$);
 - The proposed daytime threshold of 60dB $L_{Amax,fast}$ is 2-17dB below existing measured representative maxima (67 to 77 dB $L_{Amax,fast}$);
 - The proposed night-time threshold of 40dB $L_{Aeq,T}$ is 4-9dB below existing measured ambient sound levels (47 to 55dB $L_{Aeq,T}$);
 - The proposed night-time threshold of 55dB $L_{Amax,fast}$ is 4-16dB below existing measured representative maxima (67 to 77 dB $L_{Amax,fast}$);
- 5.7 The following sections review the likelihood of potential operational activity being able to comply with the above thresholds and associated mitigation to assist with noise minimisation.

² “Guidelines for Community Noise”, WHO (1999). “Night Noise Guidelines for Europe”, WHO (2009)

- The lounges are located a significant distance (around 50m) away from dwellings on Nightingale Road and the shape of the building will also help provide some degree of acoustic screening.
- 5.12 In light of the above, it is considered unlikely that noise break-out from the communal lounges pose any significant risk of adverse noise propagation to neighbouring dwellings.
- 5.13 Any residual risk can however also be managed through the pro-active routine monitoring of the use of the lounges (i.e. to quickly and effectively address any behaviour causing increased noise levels) and keeping windows temporarily closed (if there are known periods of scheduled activity that may be characterised by higher noise levels).
- 5.14 In order to “police” the behaviour of residents, it is understood that the following surveillance and monitoring measures will be implemented in line with One YMCA’s standard operating procedures:
- The hostel will be fully supervised at all times. During the daytime, the on-site staff team will include the Housing Manager, a Housing Support Worker and Specialist Project Works, with 2 no. concierge supervisors present overnight;
 - The premises will be covered by both internal and external CCTV. This will assist in enabling any excessive noise or disturbance to be identified quickly, enabling staff to defuse or abate any developing adverse situation;
 - The Concierge Supervisors will also carry out regular pro-active patrols of both the interior and exterior of the building to identify any activity that is or could cause potential disturbance;
 - If residents behaviour is unacceptable (e.g. shouting, playing music at an “excessive” level, etc.), they will be asked to immediately cease such behaviour and have the consequences of non-compliance with such instruction (e.g. potential eviction) explained to them.
- 5.15 The above controls should provide an effective and practical over-arching policy to assist with noise minimisation.
- 5.16 In light of the above, no specific engineering controls are considered necessary to provide control over noise break-out from the lounges. The management controls outlined above should, however, form an integral part of the Noise Management Plan

Noise Emissions from Building Services Plant

- 5.17 In the event that building services plant (e.g. air conditioning condensers, etc.) are required to service the proposed accommodation, noise emissions from such plant should be controlled to minimise the risk of noise disturbance to neighbouring dwellings.
- 5.18 The accepted industry standard methodology for assessing noise from plant installations is BS 4142: 2014 + A1: 2019 *"Methods for Rating and Assessing Commercial and Industrial Sound"*.
- 5.19 The assessment procedure initially compares the 'Rating Level' of the source with the 'Background Noise Level' when the source is not present.
- 5.20 The 'Rating Level' (L_{Ar}) referred to is the specific noise level of the noise source under investigation (in terms of the L_{Aeq} noise index), to which corrections are applied if the noise has certain audible characteristics. The table below summarises the corrections to be applied based on a subjective assessment of noise source characteristics.

Table 5.2: BS4142 Character Corrections

Character Correction				
Feature / Perception	Tonality	Impulsivity	Intermittency	Other Acoustic Characteristics
Just perceptible	+2dB	+3dB	+3dB	+3dB
Clearly perceptible	+4dB	+6dB	When the specific sound has identifiable on/off conditions that are readily distinctive	
Highly perceptible	+6dB	+9dB		

- 5.21 The 'Background Noise Level' (L_{A90}) represents the noise level that is exceeded for 90% of the stated measurement period. For assessment purposes, the background noise level needs to be determined without the noise source under investigation operating.
- 5.22 The time of operation needs to be taken into account. During the day (normally taken to be 07.00 to 23.00 hours) a one-hour measurement period is considered appropriate. During

the night (normally taken to be 23.00 – 07.00 hours) a 15-minute time period is normally used.

5.23 The following guidance is then offered based on the outcome of this initial assessment:

- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
- 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 having a low impact, depending on the context

5.24 Based on the above, it is recommended that any new building services plant installations are designed such that they for not exceed the minimum background sound level representative of their period of operation. This should align with plant having a “low” impact based BS 4142 guidance.

5.25 Based on the results of the noise monitoring, it is therefore recommended that any new plant installations are designed to the following design targets:

Table 5.3: Recommended Plant Noise Emission Targets (Compatible with a “Low” Impact)

Proposed Environmental Noise Design Target, $L_{Aeq,T}$ dB	
Daytime (07.00 to 23.00 hours)	Night-time (23.00 to 07.00 hours)
37	31

5.26 It is recommended that the above targets should be achieved at 1m from the façade of any neighbouring noise sensitive property, with all plant operating in its normal operating condition.

Noise from Private Balconies

5.27 As noted earlier, many rooms benefit from private, inset balconies. The balconies are generally well set back from neighbouring dwellings. Approximate separation distances are:

Table 5.4: Separation Distances Between Balconies and Neighbouring Dwellings

Receptor	Approximate Distance to Closest Balcony (m)
3 Morgan Court (Florence Street)	26
10 Florence Street	19
42 Florence Street	19
38 Nightingale Road	26
48 Nightingale Road	36
65 Kings Road	49

- 5.28 As a primary means of noise management, residents should, in the first instance, be advised of behavioural expectations during their stay. It is understood that One YMCA enforce such expectations as a matter of course, through their standard Tenancy Agreement. Such an approach establishes a clear and effective means of sanction and enforcement in the event of any behavioural activity that has the risk of causing noise. This will include the use of radios or other sound amplification equipment at an “excessive” volume and any activity that would lead to increased vocal effort (singing, shouting, laughing, etc.).
- 5.29 It follows that the most likely source of noise created by residents use of the balconies would be “normal” conversational speech.
- 5.30 The typical sound level of “relaxed” human speech is around 54dB(A) at a distance of 1m, whilst “normal” speech communication would be expected at around 60dB(A).
- 5.31 Based on the above, conversational noise from the use of a balcony might be expected to give the following sound levels at neighbouring receptors:

Table 5.5: Separation Distances Between Balconies and Neighbouring Dwellings

Receptor	Estimated Sound Level, $L_{Aeq,T}$
3 Morgan Court (Florence Street)	26 – 32
10 Florence Street	28 – 34
42 Florence Street	28 – 34
38 Nightingale Road	26 – 32

48 Nightingale Road	23 – 29
65 Kings Road	20 – 26

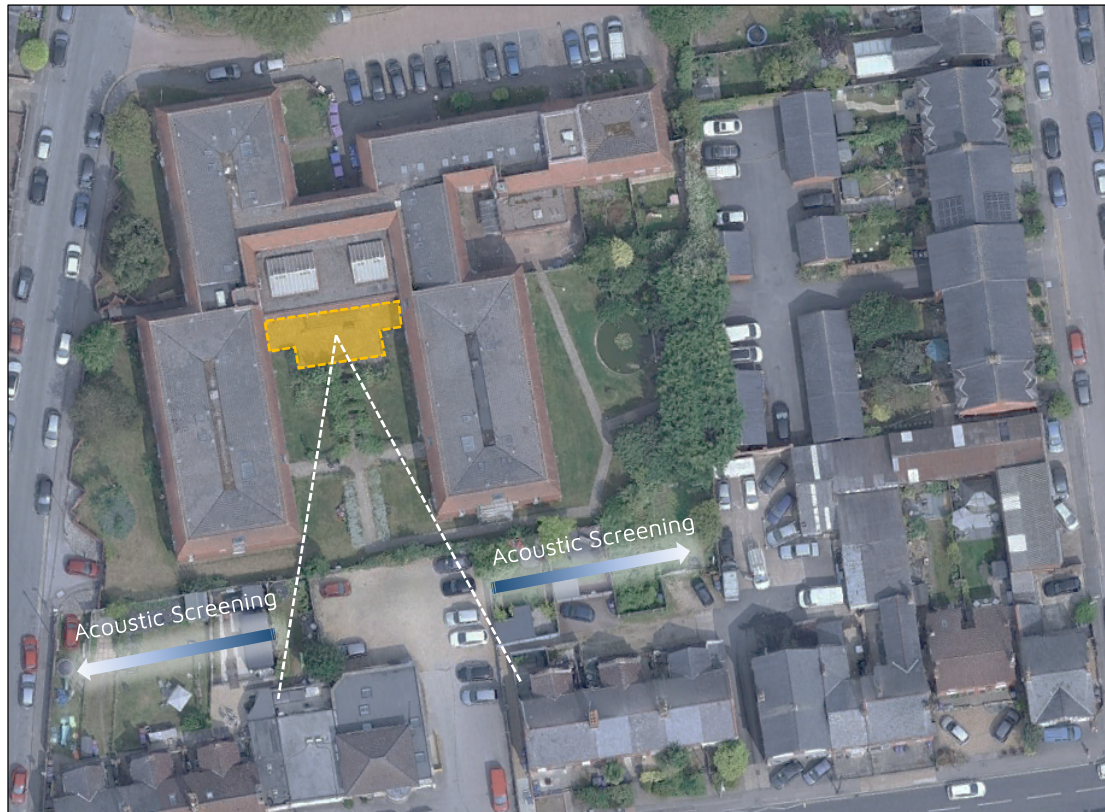
- 5.32 The above values are predicted assuming a direct and unimpeded line of sight between source and receptor. In practice, this is considered to be a pessimistic assumption given that the balconies have solid brick balustrades, which are likely to provide some degree of localised acoustic screening, particularly if residents are seated.
- 5.33 Taking this into account, it is considered unlikely that the use of the balconies for casual recreational use and speech communication would have any adverse impact on existing neighbouring dwellings. To add some context, to this conclusion it can be seen that:
- Daytime sound levels determined from the noise monitoring recorded typical daytime sound level ranging between 47 to 54 dB $L_{Aeq,16hour}$. It can therefore be seen that predicted speech noise levels would be substantially below existing ambient daytime sound levels;
 - Whilst night-time sound levels are lower (44-49 dB $L_{Aeq,8hour}$), the predicted levels of speech would still be significantly lower than these existing ambient conditions.
- 5.34 In light of the above, it is concluded that additional engineering works should not be required to assist with the control of noise from balconies and that use of the balconies should be effectively controlled through appropriate management procedures, and which can be enforced through the Tenancy Agreement each resident is required to enter into. In order to minimise potential disturbance during the quieter night-time period, an additional restriction could be imposed which prevents the use of the balcony by any person other than the flat occupant having access to the balcony.

Noise from Communal Amenity Spaces

- 5.35 Communal amenity spaces have the potential to generate higher noise levels given that there may be a greater interaction between groups of residents. Another potential consequence in “group” scenarios, is that if multiple people speak at the time same, the effort used by the speaker(s) may naturally increase – this is a natural physiological response to a noise environment called the “Lombard Effect”.
- 5.36 Notwithstanding the above, the communal amenity spaces are considered to be located in the optimal locations to minimise potential noise overspill to neighbouring dwellings. The

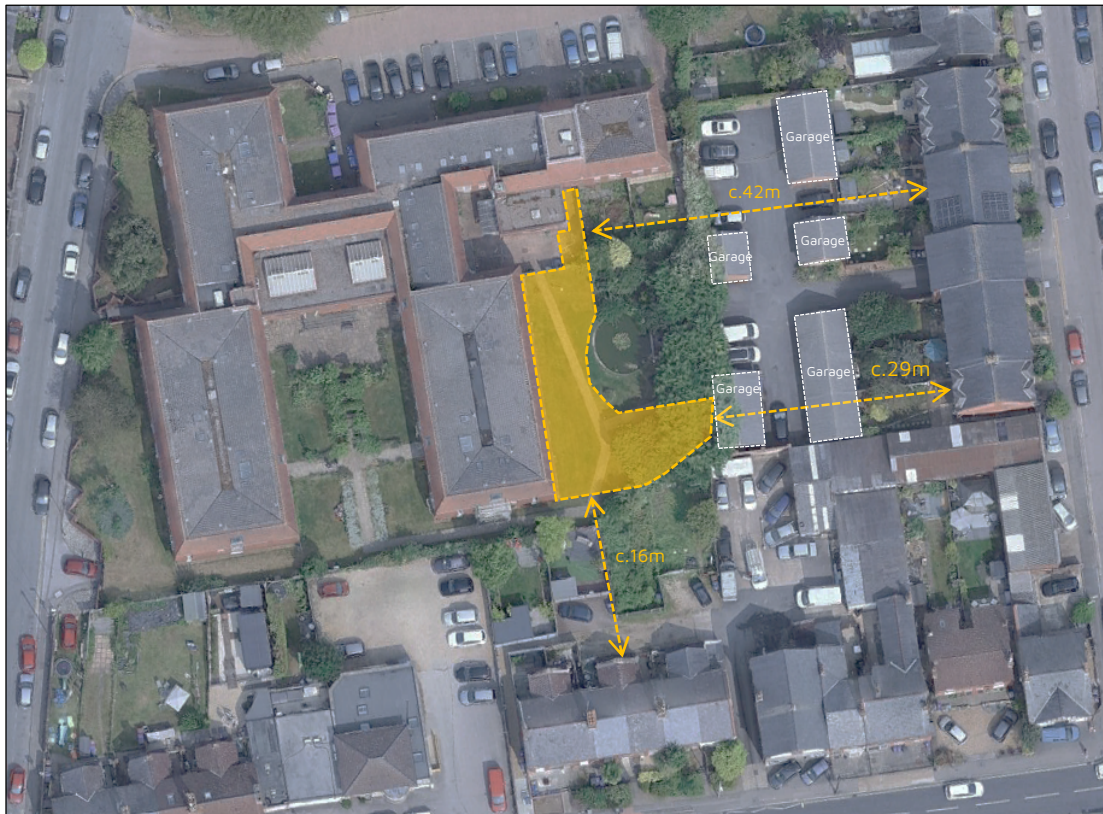
garden proposed for use by young people is centrally located and it would appear likely that the favoured congregation point would be within the northern (paved) area, as highlighted in Figure 5.2 below.

Figure 5.2: Amenity Space for Young People



- 5.37 Figure 6.4 has also been annotated to show sight line from the central area of the patio. Where receptors are located outside of the subtended angle (and there is no line of sight), sound will also be naturally attenuated. In broad terms the further “into” the shadow zone a receptor is, the more acoustic screening will be provided.
- 5.38 In light of the above it can be seen that whilst the veterinary practice on Nightingale Road, sits within the “illuminated” zone of paved amenity space, neighbouring dwellings sit in the shadow zone and thus the building will act as a natural barrier minimising sound propagation.
- 5.39 Additional acoustic screening will be provided by existing timber boundary fencing along the southern boundary of the site.
- 5.40 The garden area for use by adults is located on the eastern side of the building, as shown in Figure 6.5 overleaf.

Figure 5.3: Amenity Space for Adults



- 5.41 The garden area is again configured to assist with the mitigation of noise to the existing dwellings to the east of the site on Kings Road. These dwellings benefit from a generous separation distance (approx. 30-40m) and will also benefit from acoustic screening provided by the massing of garages around the parking court to the rear of these properties and existing boundary fencing.
- 5.42 Dwellings on Nightingale Road to the south of the amenity space are positioned closer, with the gardens of the properties set directly on the boundary line. They do, however, still benefit from some degree of acoustic screening provided by existing close boarded timber fencing.
- 5.43 It is difficult to predict with any accuracy what noise levels could result from the usage of the gardens as this will be influenced by a wider number of factors including the number of residents, their location, etc. The noise impact and effect of such usage will also be influenced by other factors, in particular the time of day.
- 5.44 As with noise in internal areas of the building, the primary aim for noise management in external areas should focus on the control of resident behaviour – to avoid activities and the actions of individuals giving rise to unacceptable noise. As noted earlier, the over-

arching control that will be implemented as a matter of course will be for all residents to sign a Tenancy Agreement which sets out clear behaviour expectations. In the event that behaviour breaches the terms of the Tenancy Agreement residents can be evicted from the hostel.

- 5.45 In order to “police” the behaviour of residents in external areas, it is understood that the surveillance and monitoring measures explained earlier will also apply to external spaces. If residents behaviour is unacceptable, they will be required to immediately move inside the building and previously outlined sanctions and enforcement explained.
- 5.46 The above measures should provide an effective and practical over-arching policy to assist with noise minimisation.
- 5.47 Notwithstanding this above, it is perhaps obvious that there may an increased risk of adverse comment from neighbours, when there is activity close to the shared boundaries of the hostel. If this cannot be physical managed by supervising staff, it might be appropriate to erect some signage with appropriate wording (e.g. *“Respect of neighbours – please keep noise levels to a minimum”*) to alert residents of their duty to behave appropriately. The need to comply with such signage could be reinforced in the Tenancy Agreement and would therefore assist in supporting enforcement action for adverse behaviour of that is warranted.
- 5.48 It may also be helpful to allocate space within each amenity area which acts a “priority” space for those wishing to use the gardens. In the case of the young adults garden, this would appear to already be well demarcated by the existing paved area. With regard to the adult garden area, the northern extent of this space (which benefits from the greatest separation to neighbouring dwellings and screening from neighbouring garages) would be most suitable. It may therefore be helpful for residents to be encouraged to use these areas in the first instance for general social interaction. Other activities (e.g. sitting alone, reading, etc, are less likely to generate any adverse noise and should not need to be further managed).
- 5.49 If considered necessary, noise overspill from allocated “priority” spaces could be further minimised, if they could be enclosed (as far as practicable) with close board timber fencing, or alternative “solid” type boundary treatment with a superficial mass of around 10kg/m². Such fencing/barriers could help provide localised acoustic screening.

Community Liaison and Complaints Procedure

- 5.50 In order for noise management to be effective, there must also be an effective mechanism for those who believe they are adversely affected by noise to be able to communicate this to One YMCA and for One YMCA to have in place rigorous investigation and enforcement procedures.
- 5.51 Suggested controls to be implemented within the Noise Management Plan are set out below:
- A newsletter could be provided to neighbouring residents, introducing the hostel, outlining its commitment to being a “good neighbour” and the management procedures it will be employing to deliver this;
 - The newsletter should include a dedicated contact number and email address through which any concerns relating to noise can be communicated (NB. Any contact number / address should be one that is capable of being monitored on a 24/7 basis to ensure that any concerns can be pro-actively addressed);
 - One YMCA should maintain a formal complaints register;
 - All complaints should be logged in the register, including the name and address of the complainant (subject to GDPR compliance), the nature of the noise causing concern (including duration).
 - Following receipt of a complaint, an appropriate investigation should be undertaken and appropriate steps to abate any unacceptable noise or activity be implemented. Full details of the action(s) taken, including the potential referral of the incident for future sanction, etc., should be recorded.
 - The outcome of the investigation should be communicated to the complainant as promptly as possible following conclusion, including any changes to operational practices that might assist in avoiding any similar incident in the future (if that that is appropriate).
- 5.52 Any noise management plan should be considered to be a “live” document that is reviewed on a periodic basis to establish its continued effectiveness and with operating procedures and policies reviewed and updated as necessary to respond to any specific or recurring areas of concern. A periodic review of the complaints register should constitute an integral part of that review process.

- 5.53 Initially, it may be appropriate for the Noise Management Plan and Complaints Register to be reviewed at intervals of 3 months and 6 months following the commencement of operations to deal with any “teething issues”. Thereafter, an annual review process might be appropriate.

Noise Monitoring

- 5.54 The Noise Management Plan is primarily aimed at minimising the risk of behaviours that could result in higher levels of noise, e.g. use of radios or other sound amplification equipment; the risk of increased noise caused by the social interaction of larger groups of residents (raised speech, laughter, shouting, etc.) and, potentially, the anti-social behaviour of an individual or group of individuals.
- 5.55 Whilst the recommended controls are considered to provide an effective and practicable basis for minimising operational noise from the hostel, additional control (such as the use of technical (quantitative) noise monitoring) could be considered (e.g. if the was considered beneficial following any periodic review of the Noise Management Plan and the findings of any complaint investigations).
- 5.56 The most appropriate form of monitoring would likely comprise noise activated signage that constantly measures sound levels and provides a visual indication when a prescribed noise threshold is approached or exceeded, e.g. an easily understandable “traffic light” principle.
- 5.57 Such monitoring is not proposed at this time, but will be reviewed as part of the periodic review process of the noise management plan and any complaints investigation once the hostel has been operational for a period of time and given other noise management protocols sufficient time to “bed in”.
- 5.58 The most appropriate form of monitoring system, location, etc. and detailed equipment set up (to aim to control noise in line with the noise thresholds outlined in Table 5.1) would be developed taking professional advice from Quantum Acoustics Ltd.

6.0 CONCLUSIONS

- 6.1 An environmental noise survey has been undertaken to determine existing ambient noise levels characterising the site and neighbouring noise sensitive receptors.
- 6.2 The potential operational impacts of the hostel have been reviewed potential noise mitigation measures that could be implemented within a Noise Management Plan are discussed. This includes potential engineering, management and monitoring strategies, consistent with the reason of Condition 4 of Planning Permission 24/O2173/FP.

APPENDIX A

Glossary of Acoustic Terminology

General

Vibrations in the air, water or other media cause pressure variations in the surrounding air. These pressure changes are perceived by the human ear as “sound”.

Measurement Units

Given the huge range of pressure fluctuations detectable or tolerated by the human ear, sound is quantified on a logarithmic scale with values expressed in “decibels”. Values are based on a reference sound pressure level of 20µPa, thus a sound pressure of 20µPa would equate to 0dB and a pressure of 200Pa would equate to 140dB.

Frequency

The number of cycles or vibrations per second, measured in Hertz (Hz). Higher frequencies are perceived as higher-pitched. Noise audible to the human ear typically covers a frequency range of 20Hz to 20,000Hz.

A-Weighting

The human ear is typically more sensitive to sound in towards the middle of the audible range and less sensitive to lower and higher frequencies. In order to take account of these differences, a frequency weighting is often applied to the sound measurement which adjusts the measurement value to reflect the way the human ear will perceive the sound. The use of “A-weighting” therefore gives a measure of subjective “loudness”. A-weighted sound levels are expressed in dB(A).

Comparison of Sound Levels

The subjective perception of sound is illustrated by reference to various relatable noise sources below:

Sound Pressure Level, dB(A)	Typical Noise Source
160	Space rocket taking off
140	Military jet taking off (at 30m)
100	Dancefloor of nightclub
90	Heavy goods vehicle driving past
80	Busy urban road
70	Vacuum cleaner
60	Busy office
55	Normal speech at 1m
40	Whispered conversation at 2m
30	Bedroom at night (BS 8233: 2014)
20	Remote country location
0	Threshold of hearing

Variation of Sound with Time

The magnitude of most sounds varies with time. Environmental noise is normally measured with a “fast” time weighting which best replicates the way sound fluctuations are perceived.

Acoustic Terminology

A number of noise metrics are routinely used to assist in characterising a noise environment. These include:

- L_{90} is the noise levels that is exceeded for 90% of the measurement period. It reflects the quiet periods during that time and is often referred to as the "background noise level". It is often used as a basis for setting noise emission criteria. The A-weighted value over time period (T) is written as $LA_{90,T}$.
- L_{eq} is the level of a notional continuous sound that would deliver the same sound energy as the actual fluctuating sound over the measurement period. This may be thought of as the "average" level during the measurement period. The A-weighted value over time period (T) is written as $LA_{90,T}$.
- L_{max} is the maximum noise level during the measurement period. For environmental noise purposes, L_{max} values are normally measured with a "fast" time response. The A-weighted value is then reported as $L_{Amax,fast}$ (or $L_{Amax,F}$)

Addition of Sound Levels

The use of a logarithmic scale does not allow the simple arithmetic addition of sound levels – they need to be added logarithmically. This means that two noise sources, each generating a sound level of 50dB(A) will generate a combined sound level of 53dB(A) – not 100dB(A),

Subjective Perception of Sound Level Changes

Subjectively, the human ear:

- Cannot perceive a sound level change of less than 3dB(A);
- Will perceive a sound level change of 4-5dB(A) as "noticeable";
- Will perceive a sound level change of 10dB(A) as a doubling (or halving) of loudness

Sound Insulation

The sound insulation performance of building constructions can be described using a number of metrics:

- R_w is the "weighted sound reduction index" and is an intrinsic measure of the sound reduction capabilities of a construction measured in an acoustics laboratory.
- D_w is the "weighted sound level difference". This is a measured of the in-situ performance of a construction, as installed in a building.
- $D_{nT,w} + C_{tr}$ is a weighted sound level difference to which further corrections (standardisation and the addition of "+ C_{tr} " correction). This descriptor forms the basis of the airborne sound insulation performance requirements of Approved Document E of the Building Regulations 2010 (as amended).
- $L'_{nT,w}$ is the standardised impact sound pressure level and forms the basis of the impact sound insulation performance requirements of Approved Document E of the Building Regulations 2010 (as amended).

Reverberation Time

This is the time taken for sound in a room to decay by 60dB. Reverberation times are lower in smaller rooms with lots of soft furnishings, and longer in large rooms with hard finishes.

Noise Rating Level

As an alternative to expressing a sound level in dB(A), noise from some sources (e.g. building services system) are quantified in terms of a Noise Rating (NR) level. This is achieved by comparing the frequency content of the sound against a series of curves defined in Annex A of BS 8233: 2014.

APPENDIX B

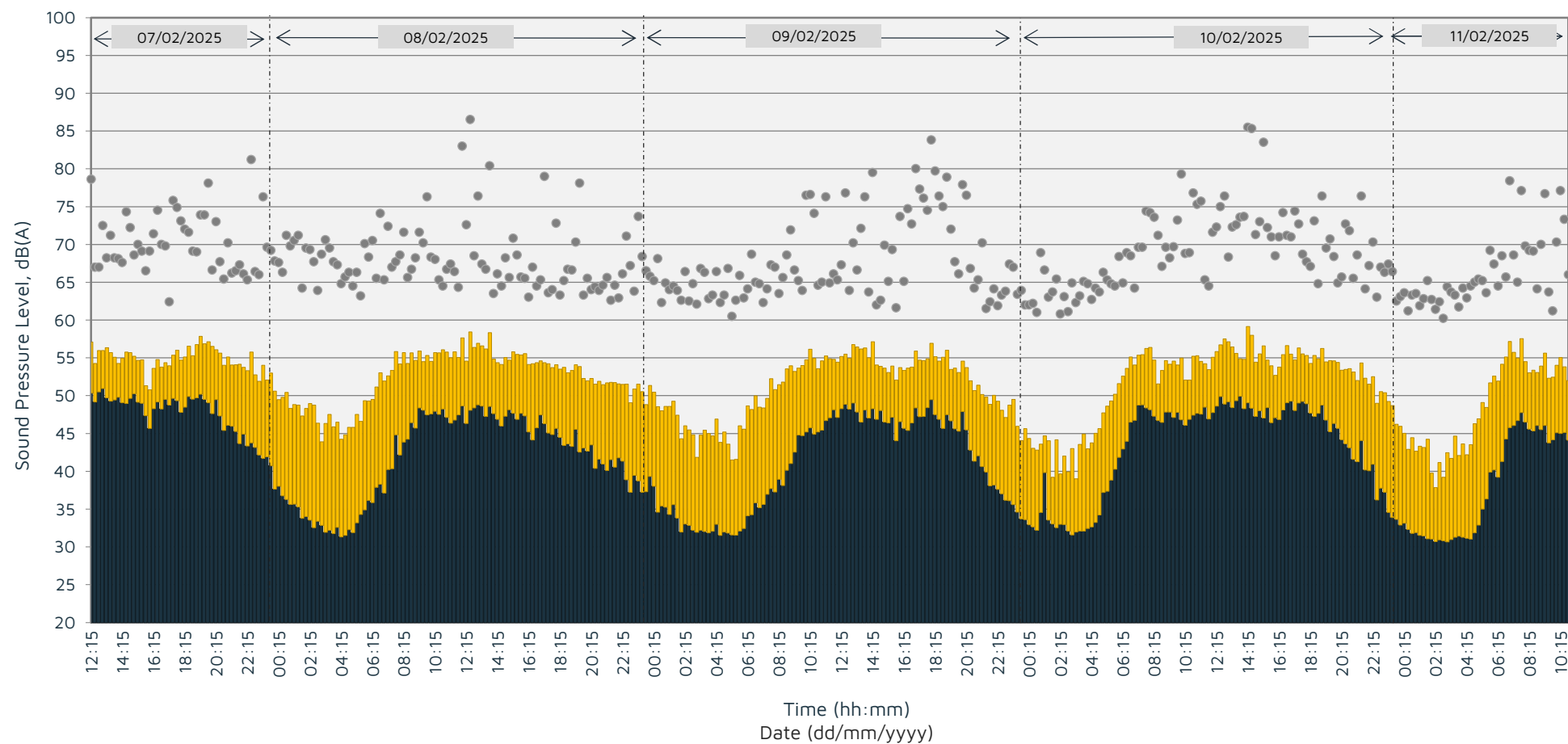
Planning Context and Design Guidance

Graph 1

Project: Anderson House, Hitchin

Measurement Location: Position 1 - Southern Boundary

Survey Date: 7 February to 11 February 2025



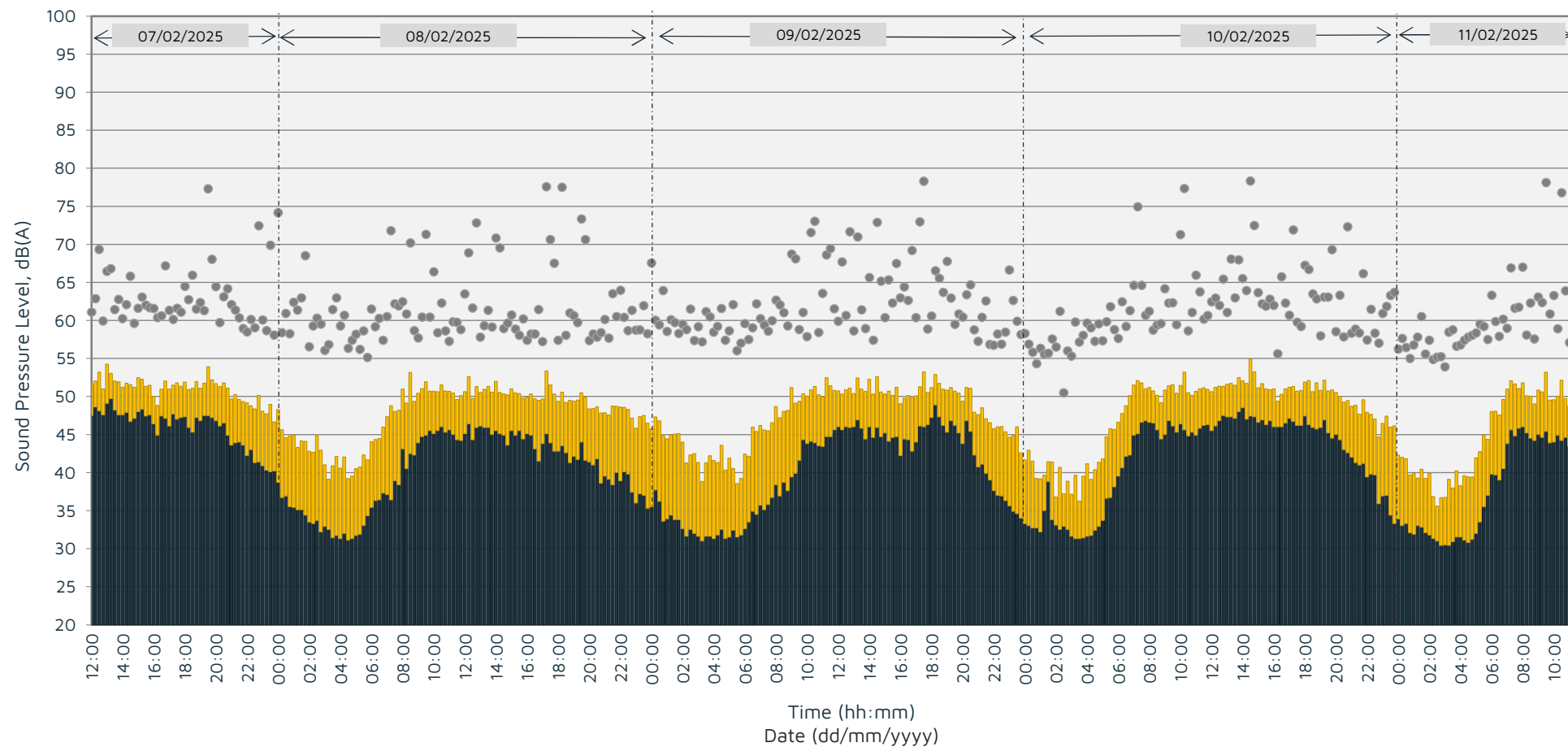
Key: $L_{A90,15mins}$ $L_{Aeq,15mins}$ $L_{Amax,fast}$

Graph 2

Project: Anderson House, Hitchin

Measurement Location: Position 2 - Towards south east corner of gardens

Survey Date: 7 February to 11 February 2025



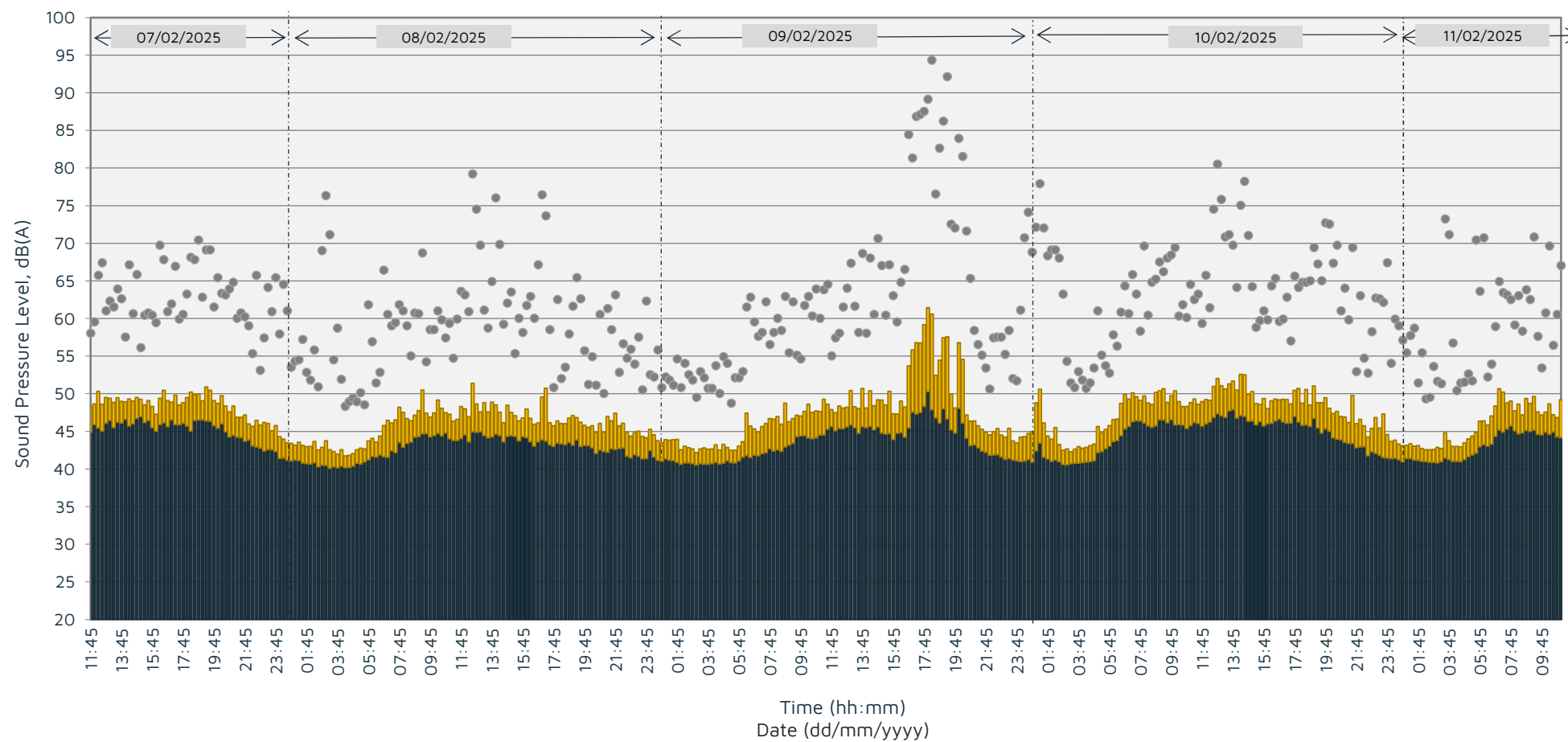
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Graph 3

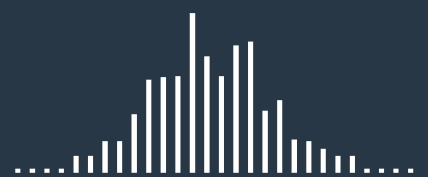
Project: Andersons House, Hitchin

Measurement Location: Position 3 - Eastern Site Boundary

Survey Date: 7 February to 11 February 2025



Key: $L_{A90,15mins}$ $L_{Aeq,15mins}$ $L_{Amax,fast}$



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