Proposed Banqueting Suite

Former Brockley Hill Golf Park
Stanmore
HA7 4LR

Noise Impact Assessment

On behalf of

Sairam (Holdings) Ltd

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1.0 Introduction

1.1. Noise Solutions Ltd (NSL) has been commissioned by Sairam (Holdings) Ltd to provide an assessment of operational noise resulting from the proposed redevelopment of the former Brockley Hill Golf Park for use as a banqueting facility (use class D2).

1.2. An environmental sound survey has been undertaken to establish the prevailing background sound pressure levels at a location representative of the sound levels outside the nearest noise sensitive receptors to the site.

1.3. Operational noise levels have been predicted at the nearest noise-sensitive receptors and assessed against recognised standards and guidance.

1.4. A glossary of acoustic terminology is given in **Appendix A**.

2.0 Details of development proposals

2.1. The proposed development entails the demolition of existing golf club buildings (Use Class D2) and construction of a new banqueting facility (Use Class D2), widening of existing vehicular access from Brockley Hill, car and cycle parking, waste / recycling storage, landscape enhancements and associated works.

2.2. The proposed facility comprises a single storey banqueting hall, with associated kitchen building, and an adjoined two storey building including toilets and food tasting room on the ground floor and a function room, meeting rooms and bridal suite above.

2.3. The proposed new building is located on the footprint of the previous club house, approximately 70m to the west of the A5.

2.4. Plans and elevations showing the proposals are given in **Appendix D**.

3.0 Nearest noise sensitive receptors

3.1. The nearest existing residential receptors are houses to the east, south and north west of the new building.

3.2. The closest houses to the east are on Grantham Close (Receptor R1), approximately 235m from the building. The closest properties to the south are on Cleopatra Close (Receptor R2), approximately 275m from the club house. These properties are screened from the external envelope of the banqueting hall by the building orientation.

3.3. The nearest noise-sensitive properties with a potential view of the banqueting hall – excluding the effects of intervening topography and vegetation – are to the north east, at Nutt Grove (Receptor R3), approximately 450m from the building.

3.4. All other noise-sensitive properties are a significantly greater distance away.

3.5. **Appendix B** contains an aerial photograph showing the site and surrounding area, including the locations of the potential receptors identified above.

4.0 Existing noise climate

4.1. An environmental noise survey was undertaken to establish the typical background sound levels at a location representative of the noise climate outside the façades of the nearest noise sensitive receptors.

4.2. The results of the environmental sound survey are summarised in Table 1 below. The full set of measurement results and details of the survey methodology are presented in **Appendix C**.

Table 1 Summary of survey results

Measurement period	Range of recorded sound pressure levels (dB)			
	$L_{Aeq(15mins)}$	$L_{Amax(15mins)}$	$L_{A10(15mins)}$	$L_{A90(15mins)}$
Daytime (07.00 – 23.00 hours)	48-62	62-91	51-61	38-56
Night-time (23.00 – 07.00 hours)	36-53	55-73	38-55	29-49
Evening (18.00 – 00.00 hours)	47-62	60-91	50-60	38-53

5.0 Planning policies and context

National Planning Policy Framework

5.1. A new edition of NPPF was published in February 2019 and came into effect immediately. The original National Planning Policy Framework (NPPF[1]) was published in March 2012, with a revision in July 2018 - this document replaced the existing Planning Policy Guidance Note 24 (PPG 24) "Planning and Noise." The 2019 revised edition contains no new directions or guidance with respect to noise, and hence, all previous references remain extant. The paragraph references quoted below relate to the February 2019 edition.

[1] National Planning Policy Framework, DCLG, March 2012

5.1. Paragraph 170 of the NPPF states that the planning system should contribute to and enhance the natural and local environment by, (amongst others) *"preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, water or noise pollution or land stability."*

5.2. The NPPF goes on to state in Paragraph 180:

"planning policies and decisions should ...

a) Mitigate and reduce to a minimum potential adverse impact resulting from noise from new development, - and avoid noise giving rise to significant adverse impacts on health and 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 ...

5.3. The NPPF document does not refer to any other documents or British Standards regarding noise other than the Noise Policy Statement for England (NPSE[2]).

Noise Policy Statement for England

5.4. The Noise Policy Statement for England (NPSE[3]), published in March 2010, sets out the long-term vision of Government noise policy. The Noise Policy aims, as presented in this document, are: *"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:*

- *avoid significant adverse effects on health and quality of life;*
- *mitigate and minimise adverse effects on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life."*

5.5. The NPSE makes reference to the concepts of NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level) as used in toxicology but applied to noise impacts. It also introduces the concept of SOAEL (Significant Observed Adverse Effect Level) which is described as the level above which significant adverse effects on health and quality of life occur.

[2] Noise Policy Statement for England, DEFRA, March 2010

[3] Noise Policy Statement for England, Defra, March 2010

5.6. The first aim of the NPSE is to avoid significant adverse effects, taking into account the guiding principles of sustainable development (as referenced in Section 1.8 of the NPSE). The second aim seeks to provide guidance on the situation that exists when the potential noise impact falls between the LOAEL and the SOAEL, in which case: *"…all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development."*

5.7. Importantly, the NPSE goes on to state that: "This does not mean that such adverse effects cannot occur."

5.8. The NPSE does not provide a noise-based measure to define SOAEL, acknowledging that the SOAEL is likely to vary depending on the noise source, the receptor and the time in question. NPSE advises that: *"Not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available."*

5.9. It is therefore likely that other guidance will need to be referenced when applying objective standards for the assessment of noise, particularly in reference to the SOAEL, whilst also taking into account the specific circumstances of a proposed development.

Planning Practice Guidance – Noise

5.10. An updated Planning Practice Guidance (PPG[4]) for noise was published on 22 July 2019 and provides additional guidance and elaboration on the NPPF. It advises that when plan-making and decision-taking, the Local Planning Authority should consider the acoustic environment in relation to:

- Whether or not a significant adverse effect is occurring or likely to occur;
- Whether or not an adverse effect is occurring or likely to occur; and
- Whether or not a good standard of amenity can be achieved.

5.11. This guidance introduced the concepts of NOAEL (No Observed Adverse Effect Level), and UAEL (Unacceptable Adverse Effect Level). NOAEL differs from NOEL in that it represents a situation where the acoustic character of an area can be slightly affected (but not such that there is a perceived change in the quality of life). UAEL represents a situation where noise is 'very disruptive' and should be 'prevented' (as opposed to SOAEL, which represents a situation where noise is 'disruptive', and should be 'avoided').

[4] Planning Practice Guidance – Noise, https://www.gov.uk/guidance/noise--2, 22 July 2019

5.12. As exposure increases above the LOAEL, the noise begins to have an adverse effect and consideration needs to be given to mitigating and minimising those effects, taking account of the economic and social benefits being derived from the activity causing the noise. As the noise exposure increases, it will then at some point cross the SOAEL boundary.

5.13. The LOAEL is described in PPG[5] as the level above which *"noise starts to cause small changes in behaviour and attitude, for example, having to turn up the volume on the television or needing to speak more loudly to be heard"*.

5.14. PPG identifies the SOAEL as the level above which *"noise causes a material change in behaviour such as keeping windows closed for most of the time or avoiding certain activities during periods when the noise is present."*

5.15. In line with the Explanatory Note of the NPSE, the PPG goes on to reference the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome. However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG[6] acknowledges that *"...the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation."*

5.16. The relevant guidance in the PPG in relation to the adverse effect levels is summarized below:

Table 2 PPG Noise Impact Table

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not Present	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Present and not Intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. 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

[5] Paragraph: 005 Reference ID: 30-005-20190722
[6] Paragraph: 006 Reference ID: 30-006-20190722

Response	Examples of Outcomes	Increasing Effect Level	Action
Lowest Observed Adverse Effect Level			
Present and Intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and Disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very Disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

5.17. The Planning Practice Guidance[7] states the following in relation to mitigation measures:

> *"For noise sensitive developments, mitigation measures can include avoiding noisy locations in the first place; designing the development to reduce the impact of noise from adjoining activities or the local environment; incorporating noise barriers; and optimising the sound insulation provided by the building envelope."*

[7] Paragraph: 010 Reference ID: 30-010-20190722

5.18. In addition, the Guide notes that it may also be relevant to consider[8]:

> *"... whether any adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time (and the effect this may have on living conditions). In both cases a suitable alternative means of ventilation is likely to be necessary. Further information on ventilation can be found in the Building Regulations".*

The London Plan – Intend to Publish Version (2019)

5.19. An Intend to Publish London Plan[9] was published in December 2019 and includes *Policy D3 Optimising site capacity through the design-led approach* and *Policy D14 Noise*.

> *Policy D3 Optimising site capacity through the design-led approach requires that:*
>
> *A. All development must make the best use of land by following a design-led approach that optimises the capacity of sites, including site allocations. The design-led approach requires consideration of design options to determine the most appropriate form of development that responds to a site's context and capacity for growth, and existing and planned supporting infrastructure capacity (as set out in Policy D2 Infrastructure requirements for sustainable densities), and that best delivers the requirements set out in Part B.*
>
> *B. Development proposals should:*
>
> *... help prevent or mitigate the impacts of noise ...*
>
> *... achieve indoor and outdoor environments that are comfortable and inviting for people to use ...*

5.20. Paragraph 3.3.9 in the narrative to Policy D3 states that:

> *Measures to design out exposure to poor air quality and noise from both external and internal sources, should be integral to development proposals and considered early in the design process.*

[8] Paragraph: 006 Reference ID: 30-006-20190722
9 The London Plan – Intend to Publish version, Spatial Development Strategy for Greater London, December 2019

5.21. Policy D14 Noise requires that:

> *In order to reduce, manage and mitigate noise to improved health and quality of life, residential and other non-aviation development proposals should manage noise by:*
>
> *1) avoiding significant adverse noise impacts on health and quality of life*
>
> *2) reflecting the Agent of Change principle as set out in Policy D12*
>
> *3) mitigating and minimising the existing and potential adverse impacts of noise on, from, within, as a result of, or in the vicinity of new development without placing unreasonable restrictions on existing noise-generating uses*

London Borough of Harrow

5.22. A review of recent planning decisions indicates that London Borough of Harrow usually requires that the rating level of new plant, at the nearest noise-sensitive receptor, is at least 10 dBA below the lowest existing background sound level. It should be noted that this is significantly below the level at which a "low impact" would be expected, using the methodology in BS 4142:2014.

6.0 Assessment of likely activity noise from banqueting suite

6.1. The main source of activity noise associated with the banqueting suite is likely to be due to the breakout of amplified music – either as a disco or a live band – through the building envelope.

Noise criteria

6.2. In order for noise breakout from amplified music not to be of concern at nearby noise sensitive residential property, it is typical for the average noise level (L_{Aeq}) to be 15dB below the prevailing background noise level, with maximum levels (L_{Amax}) being 10dB below the prevailing background noise level. Music noise would therefore approach inaudibility at the receptors.

Assessment

6.3. For the purposes of the assessment, the following octave band average (L_{eq}) reverberant noise levels have been assumed. Maximum (L_{max}) levels could be assumed to be around 5dB higher. These values have been drawn from data for similar facilities.

Table 3 Assumed music noise levels

Octave band centre frequency, Hz	63	125	250	500	1k	2k	4k	8k
Banqueting hall amplified music (worst-case), $L_{eq,\ 5min}$	100	95	90	90	85	85	80	80
Food tasting room – noise from banqueting hall when some internal doors are open, $L_{eq,\ 5min}$	90	85	80	80	75	75	70	70
Function room, $L_{eq,\ 5min}$	85	80	75	75	70	70	65	65

6.4. The assumed acoustic performance of the external building fabric elements is shown in the following table.

Table 4 Assumed building envelope sound reduction performance

External building fabric element	Construction element	Sound reduction indices at octave band centre frequency, Hz							
		63	125	250	500	1k	2k	4k	8k
Glazing configuration glass mm/airgap mm/glass mm	4mm glass / 16mm airspace / 4mm glass	18	23	22	29	31	31	28	30
External doors	Glazed as above	18	23	22	29	31	31	28	30
Non vision wall	Timber frame with lightweight cladding and plasterboard drylining*	22	24	34	40	45	49	50	50
Roof	Timber joists, roof, with plasterboard ceiling/lining	18	24	34	43	50	55	55	55

**Non-vision wall may be cavity masonry construction to some or all areas. Use of the values above in calculations provide a robust assessment. In practice, noise-break-out through glazing and doors will be the dominant source of transmission.*

6.5. From the above, and the architect's drawings provided (see **Appendix D**), the break-out noise level at each of the nearest receptors may be calculated.

Banqueting Hall

6.6. The proposed banqueting hall has windows to the west elevation and windows and folding glazed doors to the north elevation. All external walls and the roof are screened from the receptors to the east and south (R1 and R2) by the building geometry. The north elevation would potentially be visible from Receptor R3 were it not for the ground topography and vegetation, and for a worst-case assessment any screening effects due to this have been excluded.

6.7. It is assumed, that, as a worst-case, amplified music may be played within the banqueting hall, with the reverberation sound pressure levels given in Table 3.

6.8. Full calculations of break-out noise levels are shown in **Appendix E** and summarised below.

Table 5 Summary of Banqueting Hall music breakout levels at receptors, dB

Receptor	Parameter	Predicted music noise level, dB	Lowest background to midnight, dB L_{A90}	Difference, dB
R1	$L_{Aeq,\ 5min}$	23	38	-15
	L_{AmaxF}	28	38	-10
R2	$L_{Aeq,\ 5min}$	21	38	-17
	L_{AmaxF}	26	38	-12
R3	$L_{Aeq,\ 5min}$	21	38	-17
	L_{AmaxF}	26	38	-12

6.9. It can be seen that predicted noise breakout levels, based on a worst-case situation in terms of internal music noise levels, are significantly below the lowest background noise level recorded during the period to midnight and are therefore in line with typical guidance and should therefore be acceptable.

Food Tasting Room

6.10. The food tasting room has windows on the south and west façades. These windows are screened from Receptor R3 by the building orientation but are likely to be visible from Receptors R1 and R2, in the absence of topography and vegetation; again, any potential attenuation resulting from this has been excluded, to give a robust assessment.

6.11. While it is not proposed for there to be loud music played within the food tasting room, there will be periods when noise levels will be elevated when the internal doors to the banqueting hall are open. During these periods the internal noise levels could rise to those shown in Table 3.

6.12. Full calculations of break-out noise levels are shown in **Appendix E** and summarised below.

Table 6 Summary of music breakout levels from Food Tasting room at receptors, dB

Receptor	Parameter	Predicted music noise level, dB	Lowest background to midnight, dB L_{A90}	Difference, dB
R1	$L_{Aeq, 5min}$	12	38	-26
	L_{AmaxF}	17	38	-21
R2	$L_{Aeq, 5min}$	12	38	-26
	L_{AmaxF}	17	38	-21
R3	$L_{Aeq, 5min}$	3	38	-35
	L_{AmaxF}	8	38	-30

6.13. It can be seen that predicted noise breakout levels are significantly below the lowest background noise level recorded during the period to midnight and are therefore in line with typical guidance and should therefore be acceptable.

Function Room

6.14. The first-floor function room has windows on the south and west façades. These windows are screened from Receptor R3 by the building orientation but are likely to be visible from Receptors R1 and R2, in the absence of topography and vegetation; again, any potential attenuation resulting from this has been excluded, to give a robust assessment.

6.15. While it is not proposed for there to be loud music played within the function room, it is likely that "background" music at a lower levels may be played occasionally, and internal noise levels may rise to those shown in Table 3.

6.16. Full calculations of break-out noise levels are shown in **Appendix E** and summarised below.

Table 7 Summary of music breakout levels from Function Room at receptors, dB

Receptor	Parameter	Predicted music noise level, dB	Lowest background to midnight, dB L_{A90}	Difference, dB
R1	$L_{Aeq, 5min}$	14	38	-24
	L_{AmaxF}	19	38	-19
R2	$L_{Aeq, 5min}$	4	38	-34
	L_{AmaxF}	9	38	-29

Receptor	Parameter	Predicted music noise level, dB	Lowest background to midnight, dB L_{A90}	Difference, dB
R3	$L_{Aeq, 5min}$	-3	38	-41
	L_{AmaxF}	2	38	-36

6.17. It can be seen that predicted noise breakout levels are significantly below the lowest background noise level recorded during the period to midnight and are therefore in line with typical guidance and should therefore be acceptable.

7.0 Other potential noise sources

Plant serving kitchen etc.

7.1. For new plant installations, London Borough of Harrow typically requires that plant rating noise levels at the nearest noise-sensitive receptor are 10dB below the existing background sound levels. Plant has not yet been selected for the proposed kitchens and other spaces, but is likely to comprise kitchen supply and extract ventilation fans and toilet extract fans. Plant – and attenuation if required – should be selected to comply with the local authority’s requirements.

Noise from guests outside banqueting hall

7.2. There is potential for noise to be generated by people gathering at the rear (north) of the banqueting hall. In order to predict the noise levels from guests in this area, it is considered most appropriate to base an assessment of the typical volume of an adult speaking voice. A person talking at a normal level of speech has a sound power level of around 73dB L_{wA}[10]. A simple noise model can be constructed based on possible numbers of people in this area, and considering distance and screening effects.

7.3. The following assessment is based on twenty people gathered in the area, half of whom are talking at any one time. The model also assumes that all talkers are facing the receptor to the north east (R3), whereas in practice they are likely to be in small groups with the majority of talkers facing their companions and therefore directed away from the Receptor. Receptor R3 is considered the worst-case because the area at the rear of the banqueting hall is screened from the other receptors.

7.4. In addition to the general noise from typical talking, it is appropriate to consider occasional raised voices or laughing etc. From the same source quoted, elevated voices, laughing or shouting could

[10] *Noise Control in Building Services* Sound Research Laboratories 1988, p 216

be considered to have a sound power level of around 85dB $L_{WA,max}$. Assuming that a more limited number of occupants would be raising their voices at any one time, a robust assumption would be that up to five people are laughing at one instant.

7.5. An assessment has been made of noise propagation to Receptor R2, since Receptor R1, though closer to the terrace, benefits from acoustic screening due to the club house orientation. The assessment is shown in Table 8.

Table 8 Predicted noise levels from terrace

	Talking, dB $L_{Aeq,5min}$	Laughing, dB $L_{Amax,F}$
Speech sound power level (1 person), dB	73	83
Number of persons present (maximum)	20	20
Likely worst-case proportion talking/laughing at any time	50%	25%
Correction for number and proportion, dB	+10	+7
Distance to R3, m	450	450
Distance correction, dB	-64	-64
Sound pressure level at R3	**19**	**26**
Lowest background sound level, until midnight, dB L_{A90}	38	38
Highest excess, dB	-19	-11

7.6. It can be seen that predictions indicate that both the “average” and maximum noise levels are at least 10dB below the lowest background sound level measured to midnight, indicating that noise from people talking will not be audible at the nearest receptors.

Car arrivals and departures

7.7. The closest part of the car park is approximately 190 m from Receptor R1. In addition, taxis will arrive at and depart from the venue at the reception area adjacent to the two-storey part of the building. This is approximately 235m from Receptor R1.

7.8. 84 car parking spaces are proposed. It is reasonable to assume that all will be used only once during an event – i.e. each car arrives and parks at the beginning of the event and leaves at the end, with no rotation of car parking spaces during the function. Peak usages in terms of arrivals and departure would be at the start and end of the event. It may be reasonably assumed that the most-sensitive high-use period would be at the end of the evening.

7.9. Assessing noise from cars departing from the car park spaces, and including noise from people talking (as they are likely to be in pairs or groups), the half-hour noise level at Receptor R2 from

23.30 to 00.00 hours is predicted to be 15 dB $L_{Aeq,30min}$. This is comfortably below the prevailing ambient noise level at that time and therefore should not cause a significant increase in the noise level at the receptor. Maximum (L_{Amax}) levels from door slams may be up to 35dB and therefore also below the existing ambient noise levels.

7.10. For taxi movements, the arrival and departure of the taxi must be considered. The half-hour noise level at Receptor R2 from 23.30 to 00.00 hours is predicted to be 16 dB $L_{Aeq,30min}$, with maximum (L_{Amax}) levels from door slams up to 34dB.

7.11. Calculations can be seen in **Appendix F**.

8.0 Conclusions

8.1. Predicted breakout music noise levels from the banqueting suite, when all external windows and doors are closed, are significantly below the lowest background sound levels measured in the period to midnight, and are therefore below the No Observed Adverse Effect Level. In accordance with the matrix in PPG (Noise), no specific measures are required to mitigate noise from that source. It is recommended that the internal noise levels set out in Table 3 are used as limits to internal sound levels within the banqueting hall and attached spaces.

8.2. Noise from people talking at the rear of the banqueting hall is not likely to be audible at any of the identified receptors.

8.3. Noise from the use of the car park, and from the arrival and departure of taxis, is not likely to lead to an adverse noise impact.

9.0 Summary

9.1. Noise Solutions Ltd (NSL) has been commissioned to provide an assessment of the likely impact of operational noise resulting from the proposed banqueting suite at the former Brockley Hill Golf Park.

9.2. An environmental noise survey has been undertaken to establish the existing prevailing noise levels at a location representative of the noise climate outside the nearest noise sensitive receptors.

9.3. An assessment of likely levels of internal music noise shows that, when external windows and doors at the venue are closed, music noise break-out will be effectively inaudible at the nearest noise-sensitive dwelling and should therefore be acceptable to the planning authority.

9.4. The local authority is likely to require a noise impact assessment of services plant, when selected. Existing background sound levels have been given within this report to enable criteria and attenuation requirements to be established.

9.5. Assessments have been made of noise from guests at the venue, the use of the car park and the arrival and departures of taxis.

Appendix A Acoustic terminology

Parameter	Description
Ambient Noise Level	The totally encompassing sound in a given situation at a given time, usually composed of a sound from many sources both distant and near ($L_{Aeq,T}$).
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s1 and s2 is given by 20 $\log_{10}$ (s1/s2). The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20μPa. 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.
dB(A), L_{Ax}	Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. 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. The background noise in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).
Fast Time Weighting	Setting on sound level meter, denoted by a subscript F, that determines the speed at which the instrument responds to changes in the amplitude of any measured signal. The fast time weighting can lead to higher values than the slow time weighting when rapidly changing signals are measured. The average time constant for the fast response setting is 0.125 (1/8) seconds.
Free-field	Sound pressure level measured outside, far away from reflecting surfaces (except the ground), usually taken to mean at least 3.5 metres
Façade	Sound pressure level measured at a distance of 1 metre in front of a large sound reflecting object such as a building façade.
$L_{Aeq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level recorded during a noise event with a period T. L_{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over the period T. L_{10} can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise. $L_{A10,18h}$ is the A –weighted arithmetic average of the 18 hourly $L_{A10,1h}$ values from 06:00-24:00.
$L_{90,T}$	A noise level index. The noise level that is exceeded for 90% of the measurement time interval, T. It gives an indication of the lower levels of fluctuating noise. It is often used to describe the background noise level and can be considered to be the "average minimum" noise level and is a term used to describe the level to which non-specific noise falls during quiet spells, when there is lull in passing traffic for example.

Appendix B Photograph of site showing areas of interest

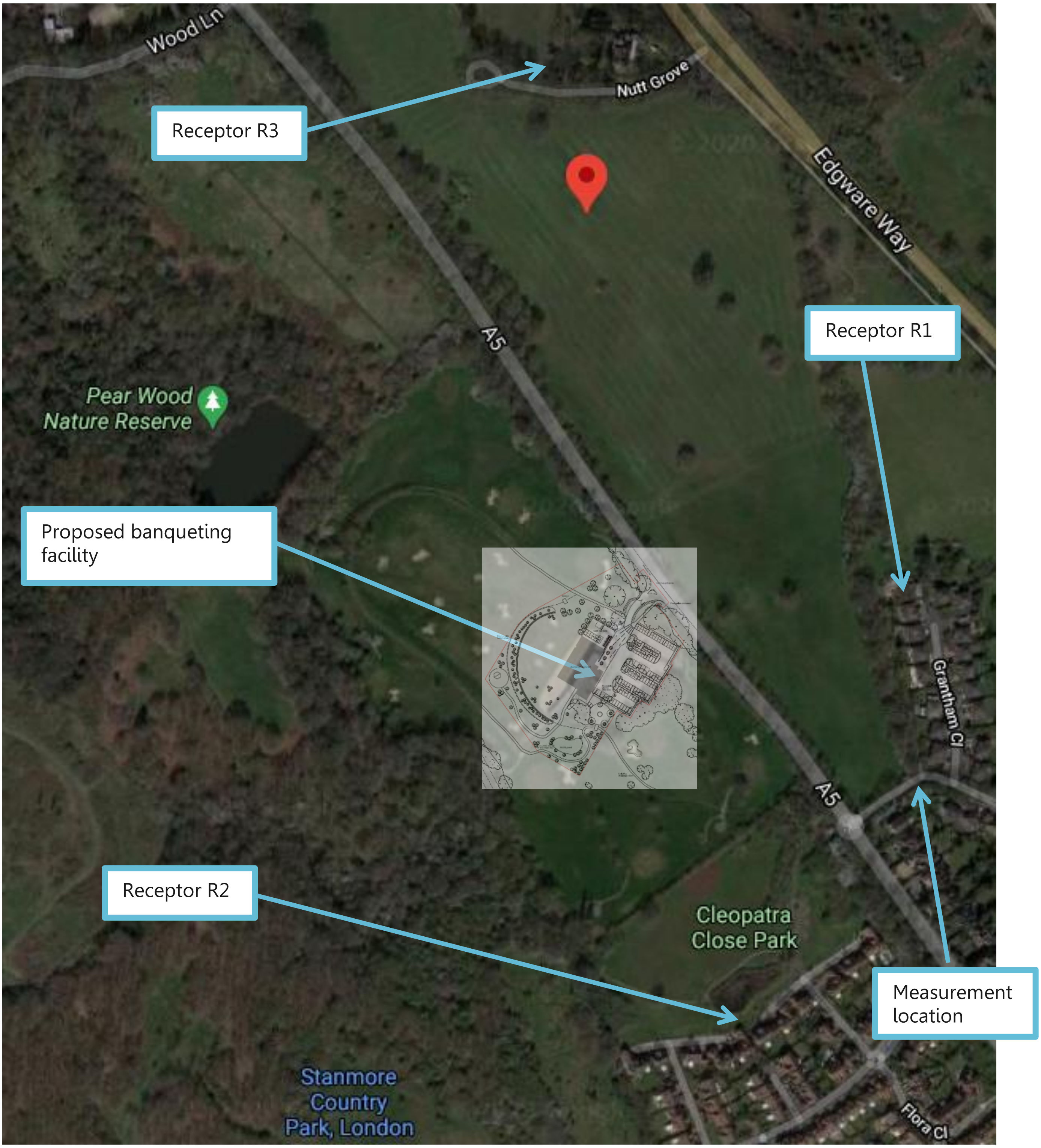


Image © Google 2021

Appendix C Environmental sound survey

Details of environmental sound survey

C.1 Measurements of the existing background sound levels were undertaken from 16.00 hours on Friday 14th August to 13.30 hours on Monday 17th August 2020.

C.2 The sound level meter was programmed to record the A-weighted L_{eq}, L_{90}, L_{10} and L_{max} noise indices for consecutive fifteen-minute sample periods for the duration of the survey.

Measurement position

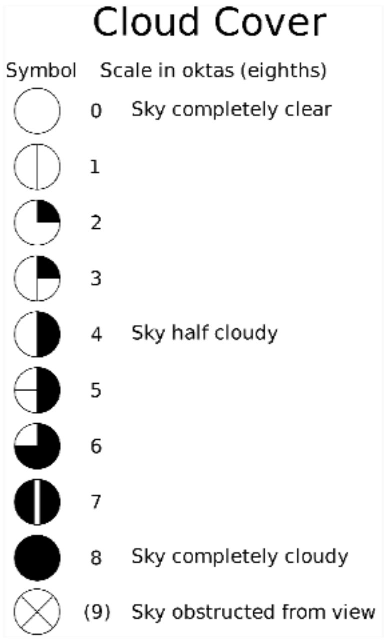
C.3 The sound level meter was positioned on a lamppost on Pipers Green Lane, close to the nearest noise-sensitive properties. The approximate location of the microphone is indicated on the photograph in **Appendix B**. In accordance with BS 7445-2:1991 *'Description and measurement of environmental noise – Part 2: Guide to the acquisition of data pertinent to land use'*, the measurements were undertaken under free-field conditions.

Equipment

C.4 Details of the equipment used during the survey are provided in the table below. The sound level meter was calibrated before and after the survey; no significant change (+/-0.2 dB) in the calibration level was noted.

Description	Model / serial no.	Calibration date	Calibration certificate no.
Class 1 Sound level meter	Rion NL-31 / 00593603	05/11/2019	TCRT18/1382
Condenser microphone	Rion UC-53A / 316131		
Preamplifier	Rion NH-21 / 30366		
Calibrator	Rion NC-74 / 35094453	30/05/2019	TCRT19/1430

C.5 Weather conditions were determined both at the start and on completion of the survey. It is considered that the meteorological conditions were appropriate for environmental noise measurements. The table below presents the weather conditions recorded on site at the beginning and end of the survey.

<table>
<tr><th colspan="5">Weather Conditions</th></tr>
<tr><th>Measurement Location</th><th>Time/Date</th><th>Description</th><th>Beginning of Survey</th><th>End of Survey</th></tr>
<tr><td>As indicated on Appendix B</td><td>16.00 14 Aug – 13.30 17 Aug 2020</td><td>Temperature (°C)</td><td>18</td><td>18</td></tr>
<tr><td rowspan="7" colspan="2">
</td><td>Precipitation:</td><td>No</td><td>No</td></tr>
<tr><td>Cloud cover (oktas – see guide)</td><td>8</td><td>6</td></tr>
<tr><td>Presence of fog/snow/ice</td><td>No</td><td>No</td></tr>
<tr><td>Presence of damp roads/wet ground</td><td>Yes</td><td>Damp</td></tr>
<tr><td>Wind Speed (m/s)</td><td><1</td><td>1</td></tr>
<tr><td>Wind Direction</td><td>E</td><td>W</td></tr>
<tr><td>Conditions that may cause temperature inversion (i.e. calm nights with no cloud)</td><td>No</td><td>No</td></tr>
</table>

Results

C.6 The results of the survey are considered to be representative of the background sound pressure levels at the façade of the most affected noise sensitive receptor. The main noise source affecting the site was traffic on the A5, A41 and M1. The results of the survey are presented in a time history graph overleaf.

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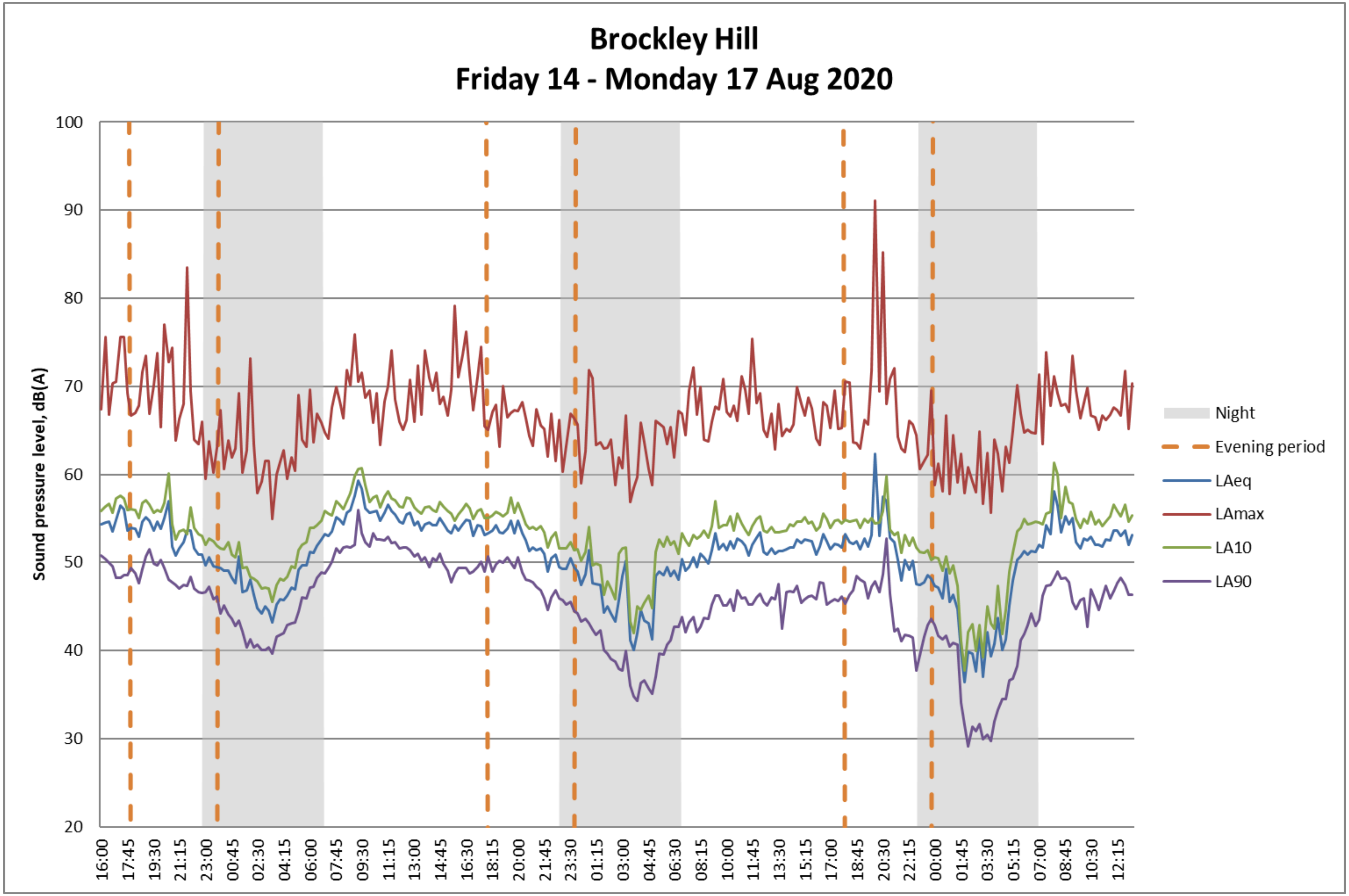

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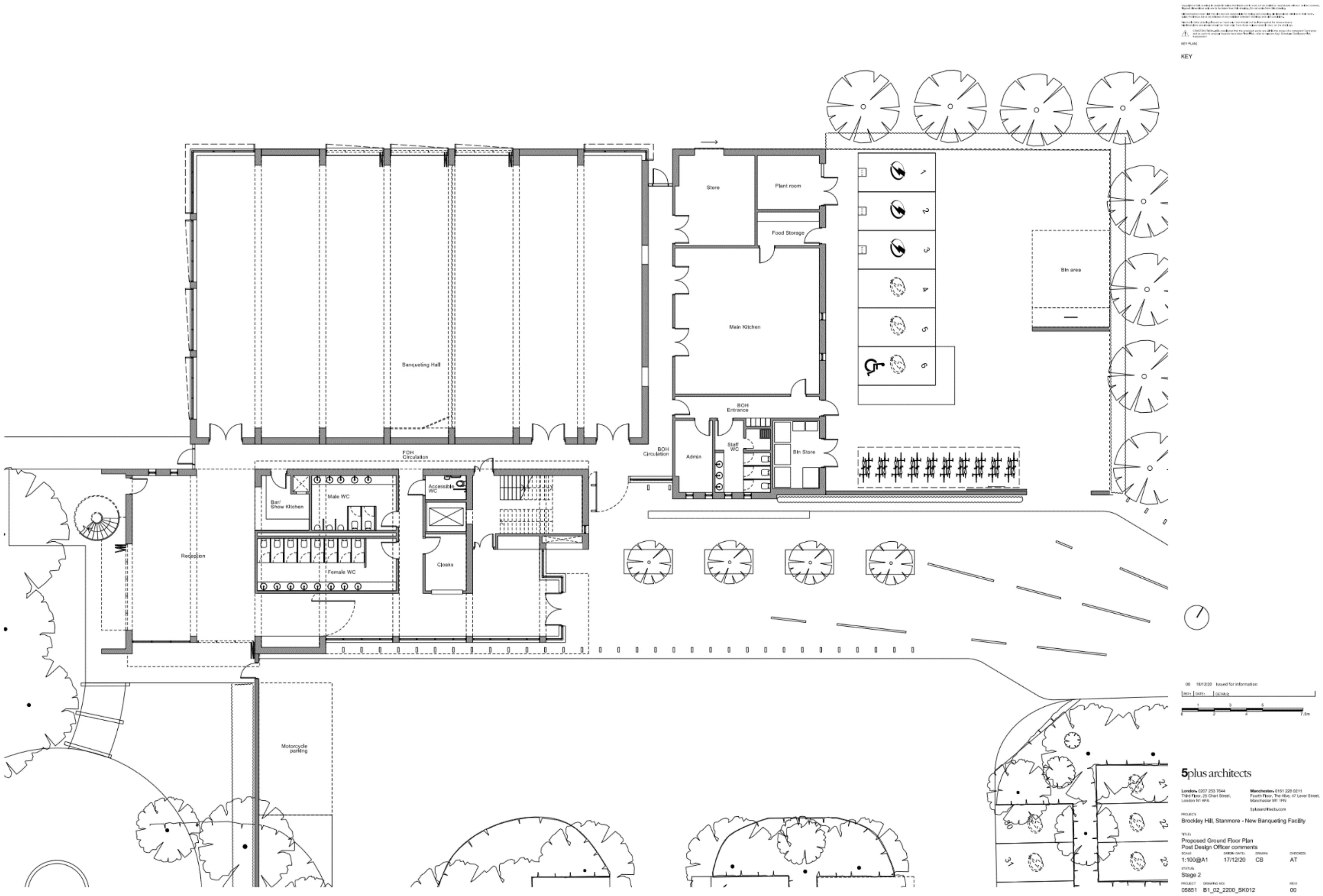
Appendix D Proposed architectural drawings

Ground floor plan (drawing 05851 B1_02_2200_SK012 Rev 00)



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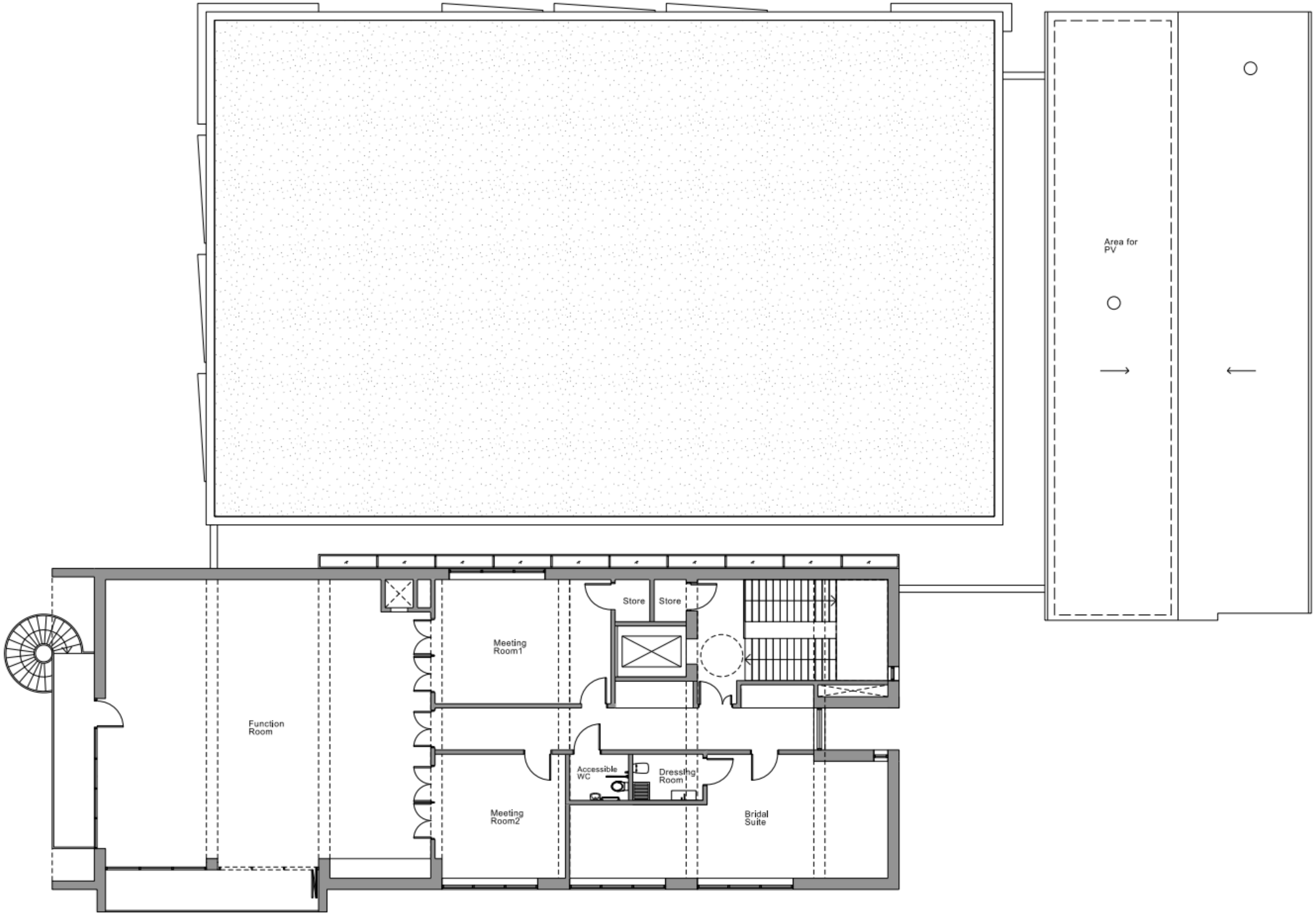
First floor plan (drawing 05851 B1_02_2201_SK002 Rev 00)



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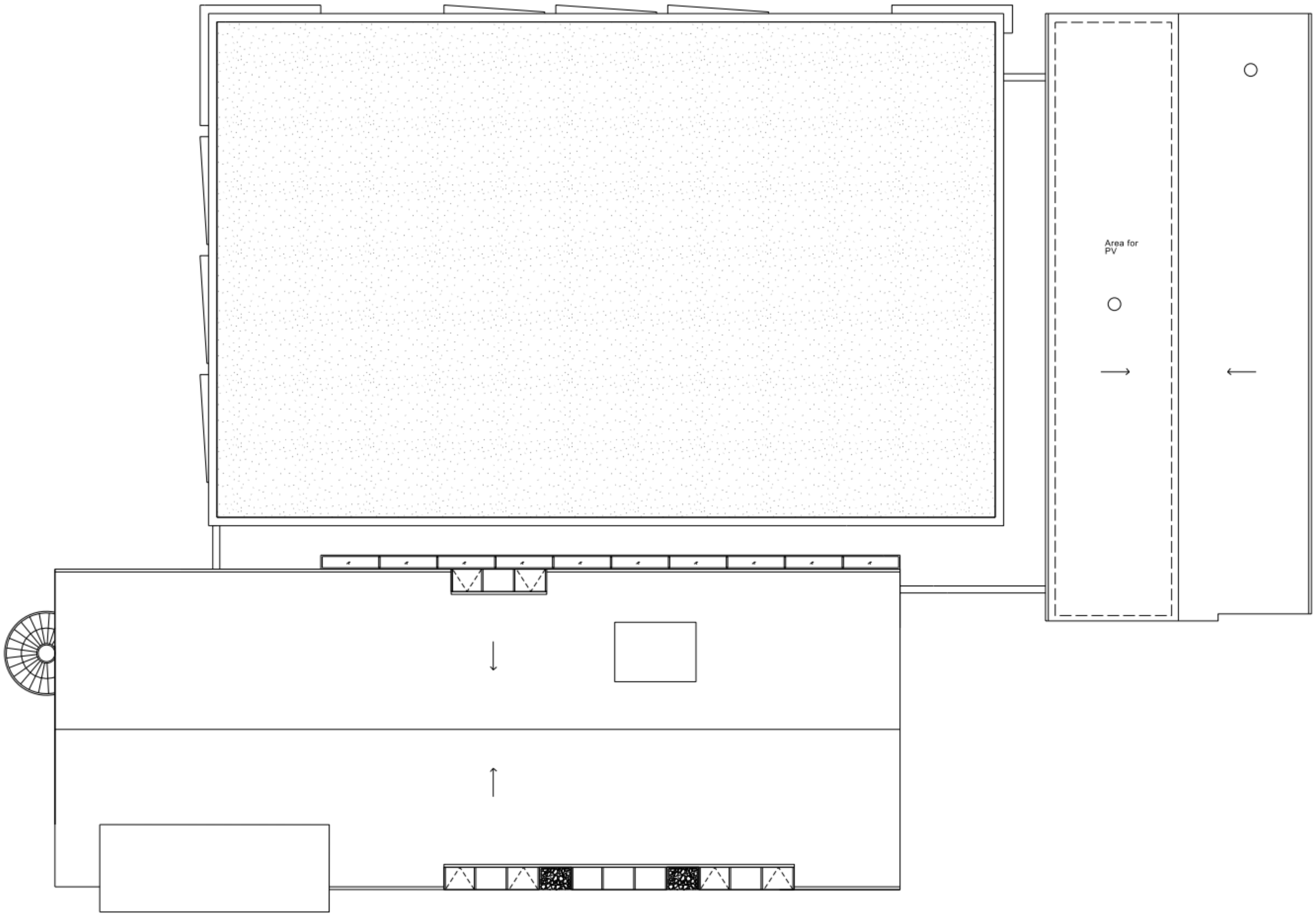
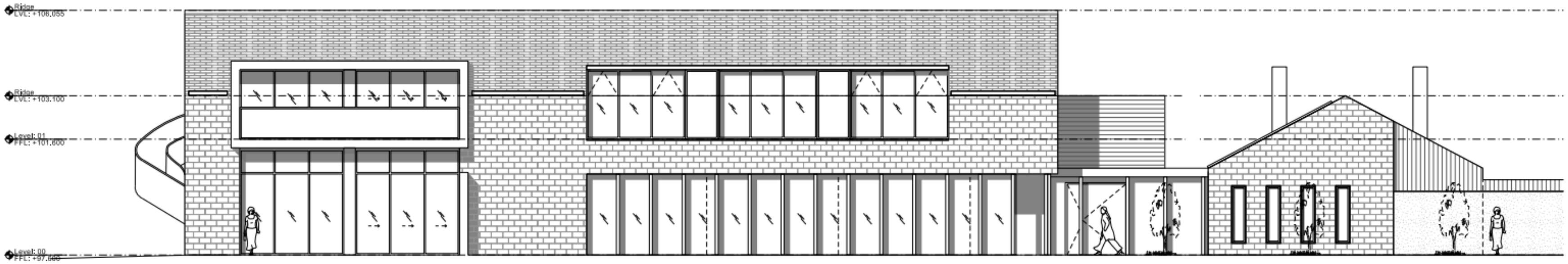
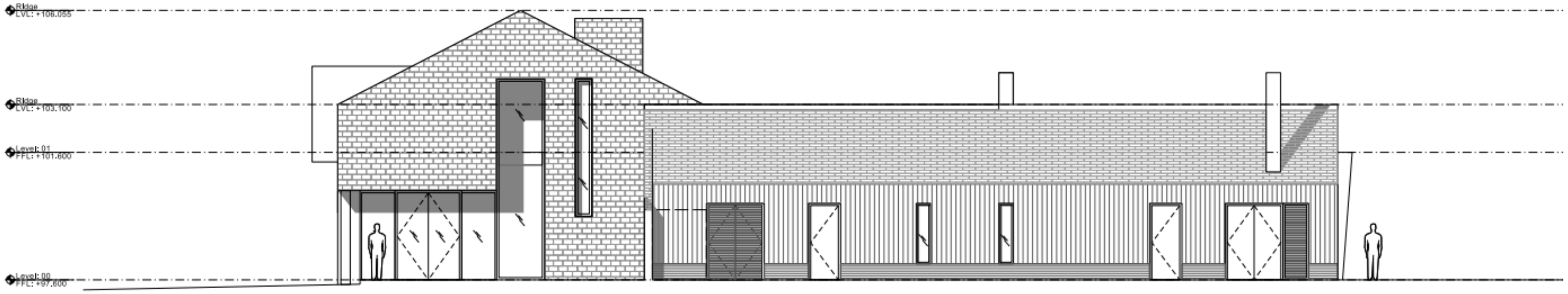
Roof plan (drawing 05851 B1_02_2202_SK001 Rev 00)



South and east elevations (drawing 05851 B1_04_2200_SK001 Rev 00)



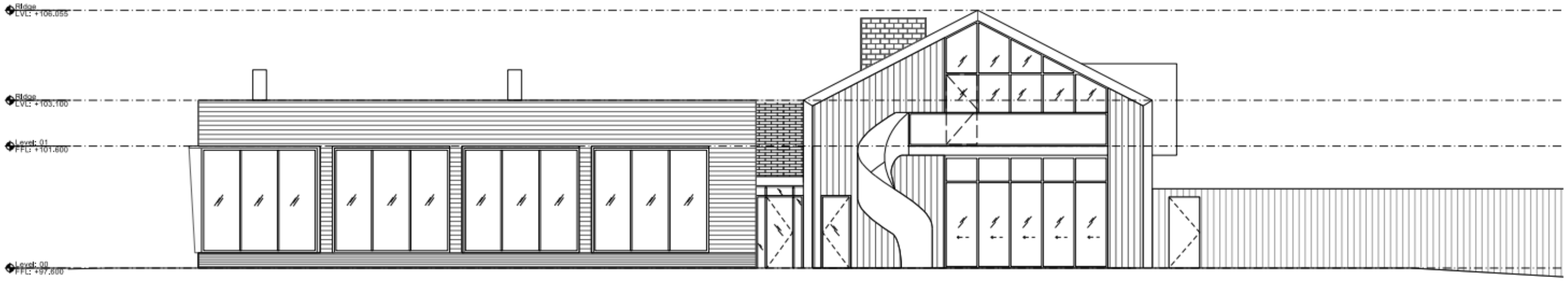
1 South Elevation
04_2200_SK0011:100 @ A1



2 East Elevation
04_2200_SK0011:100 @ A1

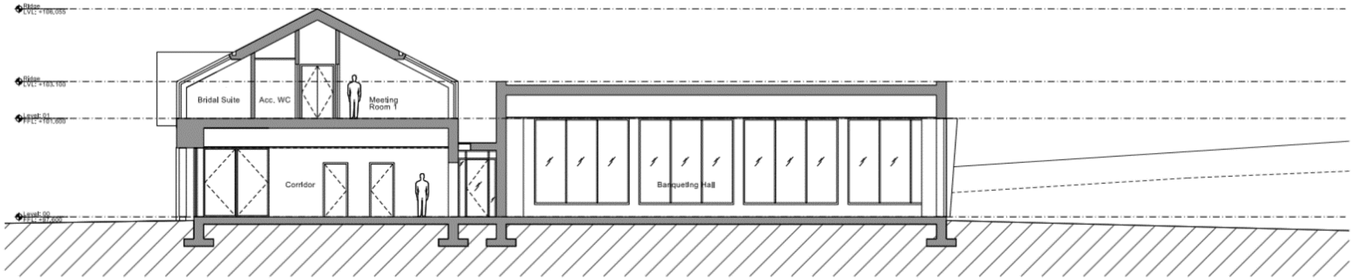
North and west elevations (drawing 05851 B1_04_2201_SK001 Rev 00)

1 North Elevation

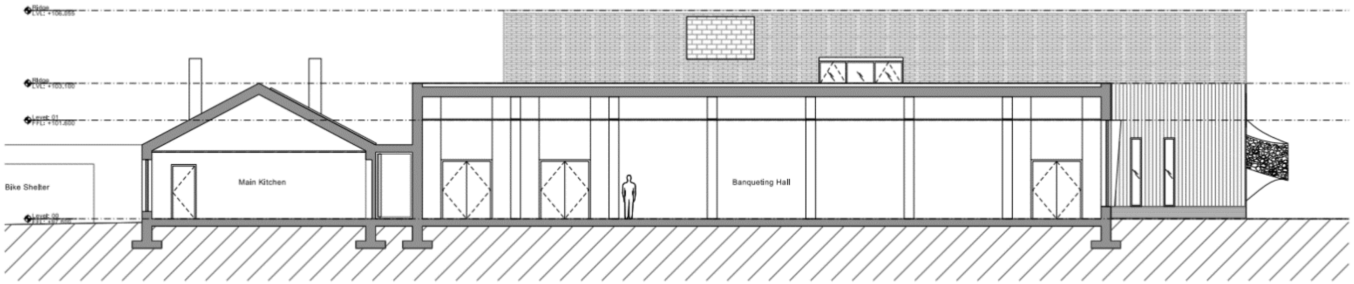


2 West Elevation

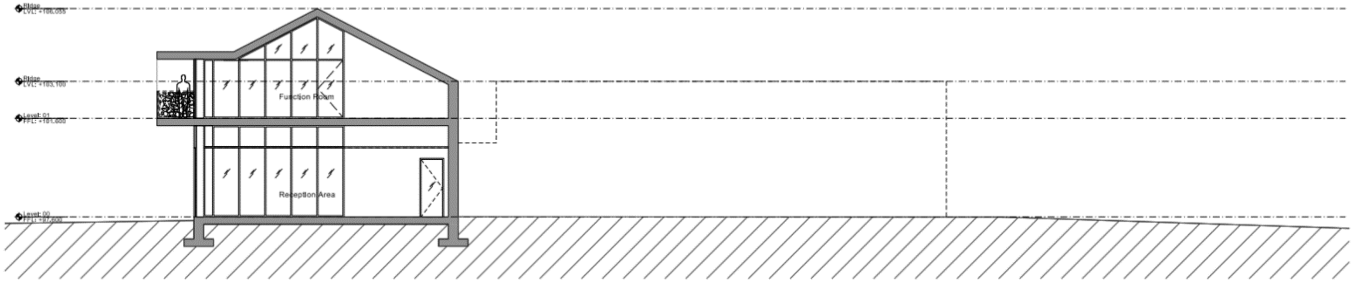
Sections (drawing 05851 B1_05_2200_SK001 Rev 00)



1 Section AA



2 Section BB



3 Section CC

Appendix E Music noise breakout calculations

Banqueting Hall

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
Internal reverberant sound level		100	95	90	90	85	85	80	80	
From west elevation										
Partition Element										
Timber frame + lightweight cladding	35.5m2	22	24	34	40	45	49	50	50	
glazing - 4/12/4 openable + doors	52.5m2	18	23	22	29	31	31	28	30	
Combined SRI		19	23	24	31	33	33	30	32	
Area correction	88m2	19	19	19	19	19	19	19	19	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**94**	**85**	**79**	**72**	**65**	**65**	**63**	**61**	**76**
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R1		**34**	**25**	**19**	**12**	**5**	**5**	**3**	**1**	**16**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R2		**32**	**23**	**17**	**10**	**3**	**3**	**1**	**-1**	**14**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R3		**28**	**19**	**13**	**6**	**-1**	**-1**	**-3**	**-5**	**10**

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
From north elevation										
Partition Element										
Timber frame + lightweight cladding	70.8m2	22	24	34	40	45	49	50	50	
glazing - 4/12/4 openable + doors	67.2m2	18	23	22	29	31	31	28	30	
Combined SRI		20	23	25	32	34	34	31	33	
Area correction		21	21	21	21	21	21	21	21	
Combined SRI		-20	-23	-25	-32	-34	-34	-31	-33	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**95**	**87**	**80**	**73**	**66**	**66**	**64**	**62**	**78**
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R1		**35**	**27**	**20**	**13**	**6**	**6**	**4**	**2**	**18**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R2		**33**	**25**	**18**	**11**	**4**	**4**	**2**	**0**	**16**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Directionality correction		3	3	3	3	3	3	3	3	
SPL at receptor R3		**37**	**29**	**22**	**15**	**8**	**8**	**6**	**4**	**20**

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
From roof										
Area correction	485m2	27	27	27	27	27	27	27	27	
Roof SRI		-18	-24	-34	-43	-50	-55	-55	-55	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**103**	**92**	**77**	**68**	**56**	**51**	**46**	**46**	**80**
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R1		**43**	**32**	**17**	**8**	**-4**	**-9**	**-14**	**-14**	**20**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R2		**41**	**30**	**15**	**6**	**-6**	**-11**	**-16**	**-16**	**18**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Directionality correction		-3	-3	-3	-3	-3	-3	-3	-3	
SPL at receptor R3		**39**	**28**	**13**	**4**	**-8**	**-13**	**-18**	**-18**	**16**
Combined SPL at Receptor R1		**44**	**34**	**24**	**16**	**9**	**9**	**6**	**4**	**23**
Combined SPL at Receptor R2		**42**	**32**	**22**	**14**	**7**	**7**	**4**	**2**	**21**
Combined SPL at Receptor R3		**41**	**32**	**23**	**16**	**9**	**8**	**6**	**4**	**21**

Ground floor including Food tasting room

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
Internal reverberant sound level		90	85	80	80	75	75	70	70	82
West elevation										
Partition Element										
Timber frame + lightweight cladding	8m2	22	24	34	40	45	49	50	50	
glazing - 4/12/4 openable	28m2	18	23	22	29	31	31	28	30	
Combined SRI		19	23	23	30	32	32	29	31	
Area correction	36m2	16	16	16	16	16	16	16	16	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**81**	**72**	**67**	**60**	**53**	**53**	**51**	**49**	**64**
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R1		**21**	**12**	**7**	**0**	**-7**	**-7**	**-9**	**-11**	**4**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		0	0	0	0	0	0	0	0	
SPL at receptor R2		**24**	**15**	**10**	**3**	**-4**	**-4**	**-6**	**-8**	**7**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R3		**15**	**6**	**1**	**-6**	**-13**	**-13**	**-15**	**-17**	**-2**

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
South elevation to Food Tasting room										
Partition Element										
Timber frame + lightweight cladding	*23m2*	*22*	*24*	*34*	*40*	*45*	*49*	*50*	*50*	
glazing - 4/12/4 openable	*21m2*	*18*	*23*	*22*	*29*	*31*	*31*	*28*	*30*	
Combined SRI		20	23	25	32	34	34	31	33	
Area correction	*44m2*	16	16	16	16	16	16	16	16	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**80**	**72**	**65**	**58**	**51**	**51**	**49**	**47**	**63**
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R1		**20**	**12**	**5**	**-2**	**-9**	**-9**	**-11**	**-13**	**3**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		0	0	0	0	0	0	0	0	
SPL at receptor R2		**23**	**15**	**8**	**1**	**-6**	**-6**	**-8**	**-10**	**6**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R3		**14**	**6**	**-1**	**-8**	**-15**	**-15**	**-17**	**-19**	**-3**

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
South and east elevation to reception area										
Partition Element										
Timber frame + lightweight cladding	*14m2*	*22*	*24*	*34*	*40*	*45*	*49*	*50*	*50*	
glazing - 4/12/4 openable	*56m2*	*18*	*23*	*22*	*29*	*31*	*31*	*28*	*30*	
Combined SRI		19	23	23	30	32	32	29	31	
Area correction	*70m2*	18	18	18	18	18	18	18	18	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**83**	**74**	**69**	**62**	**55**	**55**	**53**	**51**	**66**
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		0	0	0	0	0	0	0	0	
SPL at receptor R1		**28**	**19**	**14**	**7**	**0**	**0**	**-2**	**-4**	**11**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		0	0	0	0	0	0	0	0	
SPL at receptor R2		**26**	**17**	**12**	**5**	**-2**	**-2**	**-4**	**-6**	**9**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R3		**17**	**8**	**3**	**-4**	**-11**	**-11**	**-13**	**-15**	**0**
Combined SPL at Receptor R1		**30**	**20**	**15**	**8**	**1**	**1**	**-1**	**-3**	**12**
Combined SPL at Receptor R2		**30**	**20**	**15**	**8**	**1**	**1**	**-1**	**-3**	**12**
Combined SPL at Receptor R3		**21**	**11**	**6**	**-1**	**-8**	**-8**	**-10**	**-12**	**3**

Function room

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
Internal reverberant sound level		85	80	75	75	70	70	65	65	77
West elevation										
Partition Element										
Timber frame + lightweight cladding	*8m2*	*22*	*24*	*34*	*40*	*45*	*49*	*50*	*50*	
glazing - 4/12/4 openable + doors	*25m2*	*18*	*23*	*22*	*29*	*31*	*31*	*28*	*30*	
Combined SRI		-19	-23	-23	-30	-32	-32	-29	-31	
Area correction	*33m2*	15	15	15	15	15	15	15	15	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**75**	**66**	**61**	**54**	**47**	**47**	**45**	**43**	**58**
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R1		**15**	**6**	**1**	**-6**	**-13**	**-13**	**-15**	**-17**	**-2**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R2		**13**	**4**	**-1**	**-8**	**-15**	**-15**	**-17**	**-19**	**-4**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R3		**9**	**0**	**-5**	**-12**	**-19**	**-19**	**-21**	**-23**	**-8**

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
South elevation										
Partition Element										
Timber frame + lightweight cladding	*14m2*	*22*	*24*	*34*	*40*	*45*	*49*	*50*	*50*	
glazing - 4/12/4 openable + doors	*17m2*	*18*	*23*	*22*	*29*	*31*	*31*	*28*	*30*	
Combined SRI		19	23	24	31	33	34	31	33	
Area correction	*31m2*	15	15	15	15	15	15	15	15	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**75**	**66**	**60**	**53**	**46**	**45**	**43**	**41**	**57**
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		0	0	0	0	0	0	0	0	
SPL at receptor R1		**20**	**11**	**5**	**-2**	**-9**	**-10**	**-12**	**-14**	**2**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		0	0	0	0	0	0	0	0	
SPL at receptor R2		**18**	**9**	**3**	**-4**	**-11**	**-12**	**-14**	**-16**	**0**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R3		**9**	**0**	**-6**	**-13**	**-20**	**-21**	**-23**	**-25**	**-9**

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
North elevation										
Area correction	*18m2*	13	13	13	13	13	13	13	13	
Element SRI		-22	-24	-34	-40	-45	-49	-50	-50	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**70**	**63**	**48**	**42**	**32**	**28**	**22**	**22**	**50**
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R1		**10**	**3**	**-12**	**-18**	**-28**	**-32**	**-38**	**-38**	**-10**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R2		**8**	**1**	**-14**	**-20**	**-30**	**-34**	**-40**	**-40**	**-12**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R3		**4**	**-3**	**-18**	**-24**	**-34**	**-38**	**-44**	**-44**	**-16**
Roof - North-facing										
Area correction	*73m2*	19	19	19	19	19	19	19	19	
Combined SRI		-18	-24	-34	-43	-50	-55	-55	-55	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**80**	**69**	**54**	**45**	**33**	**28**	**23**	**23**	**57**

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R1		**20**	**9**	**-6**	**-15**	**-27**	**-32**	**-37**	**-37**	**-3**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R2		**18**	**7**	**-8**	**-17**	**-29**	**-34**	**-39**	**-39**	**-5**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R3		**14**	**3**	**-12**	**-21**	**-33**	**-38**	**-43**	**-43**	**-9**
Roof - South-facing										
Area correction	*73m2*	19	19	19	19	19	19	19	19	
Combined SRI		-18	-24	-34	-43	-50	-55	-55	-55	
Inside-outside correction		-6	-6	-6	-6	-6	-6	-6	-6	
Sound power level		**80**	**69**	**54**	**45**	**33**	**28**	**23**	**23**	**57**

		Octave band centre frequency (Hz)								dBA
		63	125	250	500	1000	2000	4000	8000	
Distance to Receptor R1, m	235	-55	-55	-55	-55	-55	-55	-55	-55	
Screening		0	0	0	0	0	0	0	0	
SPL at receptor R1		**25**	**14**	**-1**	**-10**	**-22**	**-27**	**-32**	**-32**	**2**
Distance to Receptor R2, m	275	-57	-57	-57	-57	-57	-57	-57	-57	
Screening		0	0	0	0	0	0	0	0	
SPL at receptor R2		**23**	**12**	**-3**	**-12**	**-24**	**-29**	**-34**	**-34**	**0**
Distance to Receptor R3, m	450	-61	-61	-61	-61	-61	-61	-61	-61	
Screening		-5	-5	-5	-5	-5	-5	-5	-5	
SPL at receptor R3		**14**	**3**	**-12**	**-21**	**-33**	**-38**	**-43**	**-43**	**-9**
Combined SPL at Receptor R1		**27**	**27**	**17**	**7**	**0**	**-8**	**-8**	**-10**	**14**
Combined SPL at Receptor R2		**25**	**15**	**5**	**-2**	**-10**	**-10**	**-12**	**-14**	**4**
Combined SPL at Receptor R3		**18**	**8**	**-2**	**-9**	**-16**	**-17**	**-19**	**-21**	**-3**

Appendix F Car park and taxi noise assessment

Source SELs

Source	Reference distance, m	Reference SEL, dB(A)	Reference L_{max}, dB(A)
Car movement	3	58	
Door slam	6	-	60
Person talking	1	60	-

Calculation of average level at Receptor R2 – Car park use

Activity	Measurement Data				No. Events / 30 mins	Normalised at 10m	$L_{Aeq, 30mins}$ @ 10m	Receptor Distance, m	Distance correction, dB	Screening, dB	Resultant at R1
	$L_{Aeq,T}$	Dist (m)	Time (s)	SEL		SEL, 10m					
Car Movement	58	3	15	70	20	60	40	190	-26	0	14
People talking	60	1	15	72	20	52	32	190	-26	0	7
										$L_{Aeq,30mins}$	15

Calculation of L_{max} level at Receptor R3

Activity	Reference L_{max}, dB(A)	Reference distance, m	Distance to receptor, m	Distance correction, dB	Screening, dB	Resultant at R3, dB(A)
Door slam	65	6	190	-30	0	**35**

Calculation of average level at Receptor R2 – Taxis

Activity	Measurement Data				No. Events / 30 mins	Normalised at 10m	$L_{Aeq, 30mins}$ @ 10m	Receptor Distance, m	Distance correction, dB	Screening, dB	Resultant at R1
	$L_{Aeq,T}$	Dist (m)	Time (s)	SEL		SEL, 10m					
Car Movement	58	3	15	70	10	60	43	235	-27	0	16
People talking	60	1	15	72	10	52	35	235	-27	0	8
										$L_{Aeq,30mins}$	**16**

Calculation of L_{max} level at Receptor R3

Activity	Reference L_{max}, dB(A)	Reference distance, m	Distance to receptor, m	Distance correction, dB	Screening, dB	Resultant at R3, dB(A)
Door slam	65	6	235	-32	0	**33**