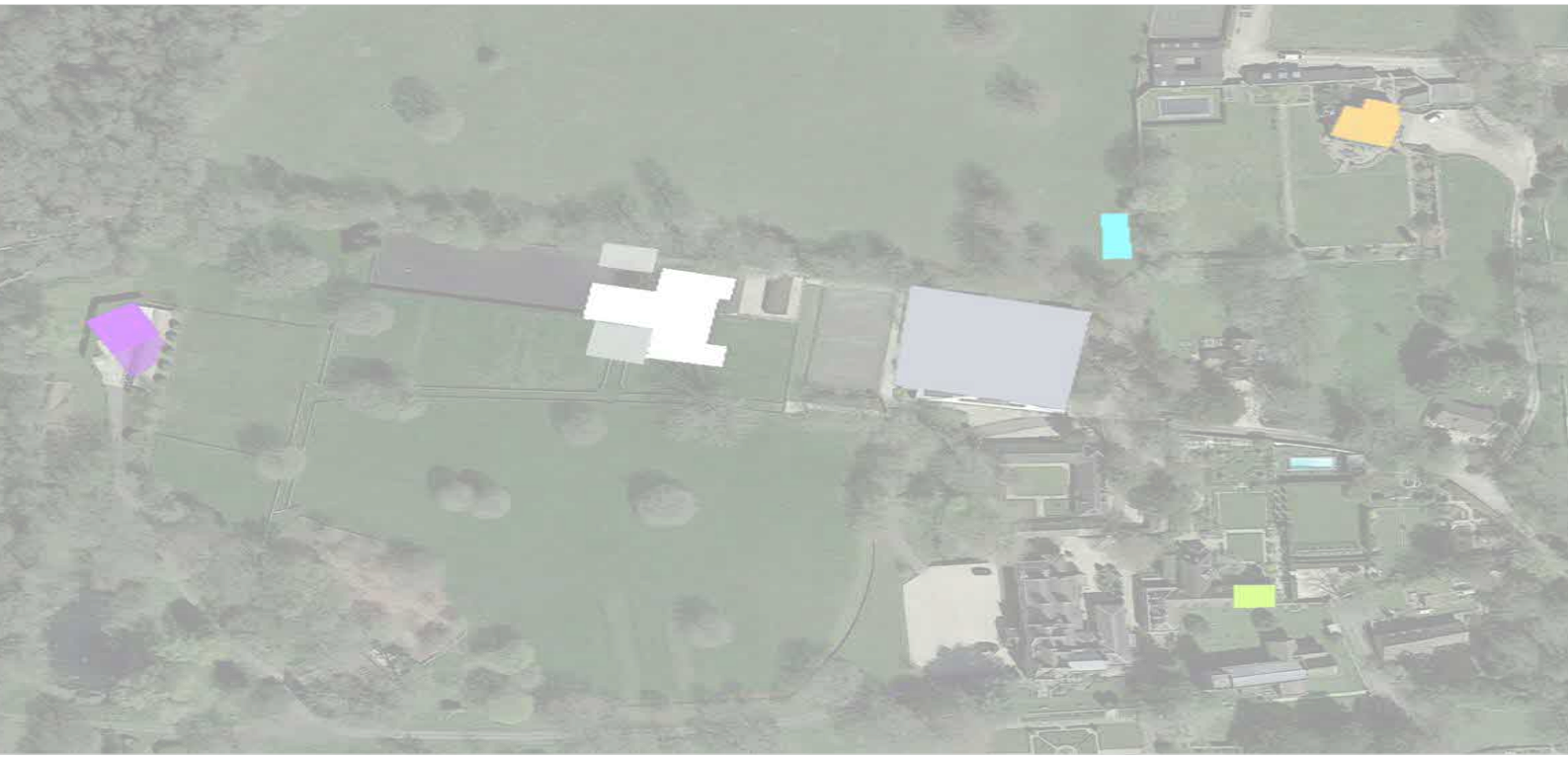
Sustainable Acoustics

Ampney Park

EVENTS AT AMPNEY PARK

Noise Impact Assessment

Report No. 21-0027-1 R01.1



PROTECT ENHANCE CONNECT

Ampney Park

EVENTS AT AMPNEY PARK

Noise Impact Assessment

Report No.:	21-0027-1 R01.1
Date:	12 September 2023

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1 INTRODUCTION

1.1 Background

The owner of Ampney Park, London Rd, Ampney Crucis, Cirencester GL7 5RY wishes to operate events in purpose-built structures in the grounds of the property. The planned events would potentially run until 00:00, and would include amplified musical performance, live music performance and speech.

1.1 Site Layout

The proposed site layout is illustrated in Figure 1[i].

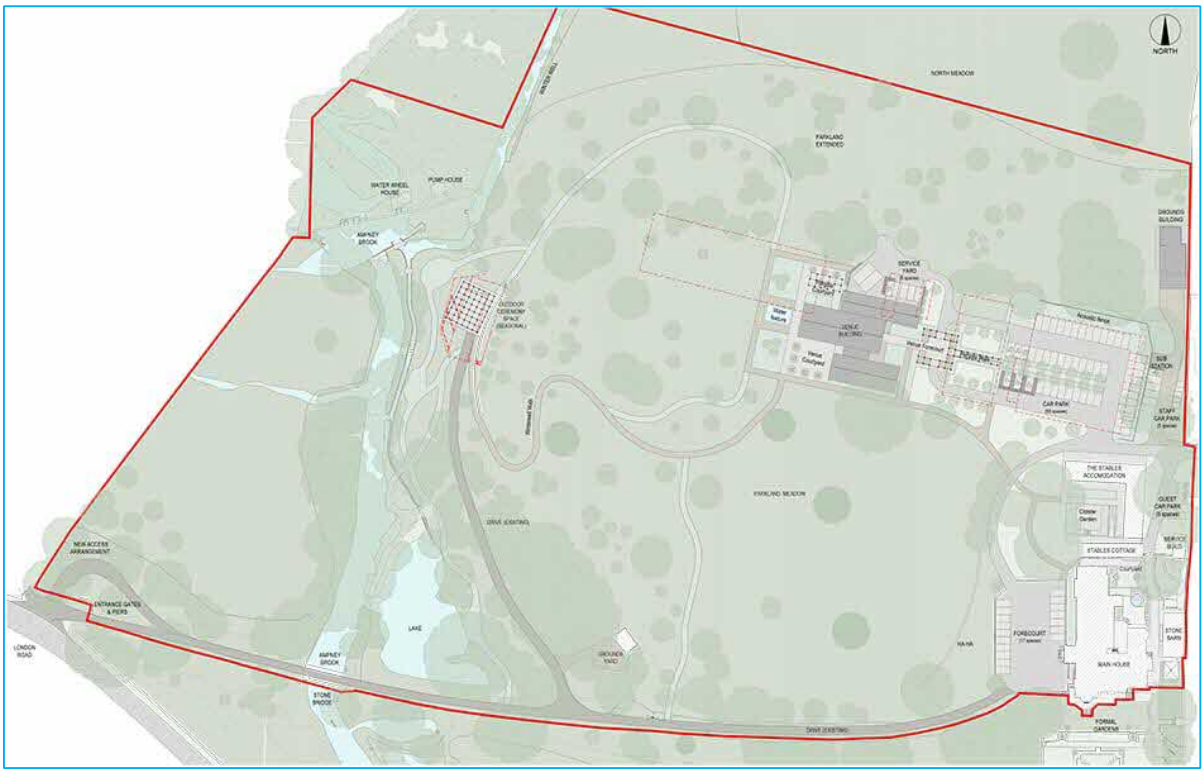

Figure 1: Proposed Site Plan

The existing nearest noise sensitive receptors to the site are illustrated in Figure 2 and summarised in Table 1.

[i] Simon Moray-Jones drawing 'Proposed Site Layout' reference 1271-PR001, revision P5 dated 15.08.2023

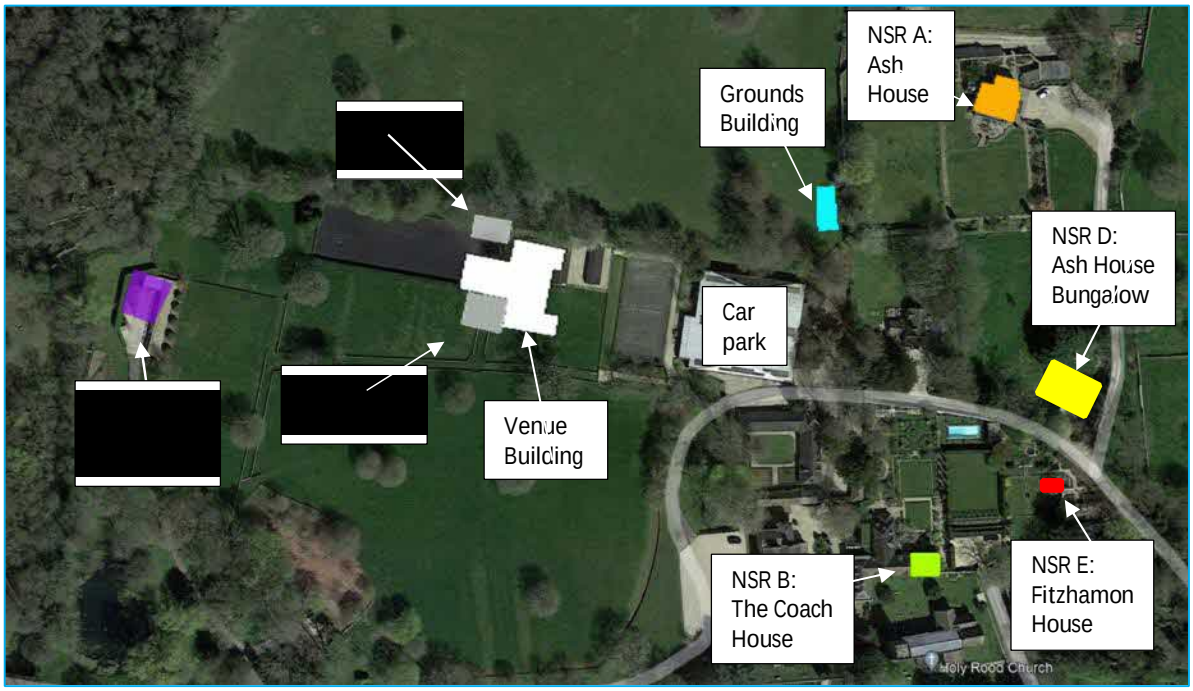

Figure 2: Proposed Site Layout in the Context of Nearby Noise Sensitive Receptors.

NSR	NSR Location Relative to: Venue Building	Venue Building Pergola	Venue Building Courtyard	Car Park	Grounds Building	Outdoor Ceremony Space
A: Ash House	145 m to the north east, direct line of sight	165 m to the north east, direct line of sight	N/A: significant structures in between the two locations	82 m to the north east, direct line of sight	55 m to the north east, direct line of sight	285 m to the north east, direct line of sight to one corner of the space
B: The Coach House	145 m to the south east, structures located in between the two locations	N/A: significant structures in between the two locations	155 m to the south east, structures located in between the two locations	72 m to the south east, direct line of sight	110 m to the south, direct line of sight	275 m to the south east, structures located in between the two locations
C:	N/A: now part of Ampney House					
D: Ash House Bungalow	170 m to the east	130 m to the east	185 m to the east, structures in between the two locations	85 m to the east	90 m to the south east	300 m to the east
E: Fitzhamon House	175 m to the south east	140 m to the south east	195 m to the south east, structures in between the two locations	94 m to the south east	110 m to the south east, structures in between the two locations	320 m to the east, significant structures located in between the two locations

Table 1: Noise Sensitive Receptors to the Proposed Venue Use

1.1 Proposed Use

The events are intended to take place up to 00:00 hrs for an unlimited number of times per year with a variety of guest accommodation and event size options available to organisers. There will a maximum capacity of 150 guests. Entertainment options for events include amplified music and live music in the Venue Building, and small classical music ensembles (one or two musicians) in the Outdoor Ceremony Space. There are external spaces for guests proposed for the Venue Building and Outdoor Ceremony Space.

Approximately three or four members of staff will use the Grounds Building, which will include: changing room, WC and office; garage space for two small tractors and a quad bike; tool and general storage; and a covered area for cutting/splitting wood, including use of chainsaws, usually in the period from October to March, but occasionally outside of these times.

There are 60 parking spaces proposed in the car park.

A plant room is proposed at first floor height on the north side of the Venue Building with louvres to provide ventilation. A plant room and a service building are also located at the Stables, however, the M&E consultant for the project (BJP UK) has advised that any change in plant in these areas is not expected to result in an increase in noise level.

1.4 Proposed Building Construction

The architect has advised the following materials for construction of the buildings:

Walls: stone and concrete inner leaf with timber linings;

Floors: timber boards and stone paving;

Roofs: zinc to the two smaller volumes and water reed over the main hall, both with insulation and fireboard.

2 POLICY AND GUIDANCE DOCUMENTS

The relevant local and national policies are summarised in Appendix 1.

1.4 National Planning Policy

National planning policy is provided in the National Planning Policy Framework (NPPF), last updated in July 2021, which supports a presumption in favour of development, unless the adverse impacts of that development would outweigh the benefits when assessed against the policies in the Framework, taken as a whole. The policy on noise is to avoid significant adverse impacts on health and quality of life, mitigate and reduce other adverse impacts and to recognise the need for development. This is further qualified in the Noise Policy Statement for England (NPSE). Further advice on the interpretation of government policy is given in Planning Policy Guidance on Noise (PPG: Noise), which considers context and significance effects.

The assessment method for rating and assessing sound of an industrial or commercial nature is provided in BS 4142:2014+A1:2019. Design criteria for internal and external noise levels within habitable rooms, based on the recommendations of the World Health Organisation, are provided in the British Standard BS 8233:2014.

Further detailed information on the national policy and guidance is provided in Appendix 1 of this report.

1.4 Cotswold District Council Local Planning Policy

2.2.1 Policy Documents

Cotswold District Council is the relevant local authority. The Cotswold District Council Local Plan 2011-2030 does not have a specific policy relating to noise, meaning that national planning policy from the NPPF, PPG: Noise and NPSE are applicable.

2.2.2 Consultation

The Environmental Health Department at CDC was contacted for comment during the pre-application process, and again by Sustainable Acoustics Ltd on 16th June 2023 but no response has been received.

1.4 Code of Practise for Environmental Noise Control at Concerts

Current best practise guidance for outdoor music events is the Code of Practise for Environmental Noise Control at Concerts (CPENCC). Detail of this guidance is provided in Appendix 1.

3 ENVIRONMENTAL NOISE SURVEY

An environmental noise survey was carried out between 1st and 6th April 2021 by staff from Sustainable Acoustics Ltd. The noise survey was carried out during the 3rd COVID-19 lockdown, indicating that noise levels from traffic may be slightly lower than normal levels due to reduced traffic movements on major roads (A roads and motorways). For this reason, the measured noise levels represent a reasonable worst case for ambient and background sound level comparison due to the proximity of the site to the audibility of traffic noise from major roads in the surrounding area (A417, A419, A429).

3.1 Data collection

The data recorded was submitted in the format of 15-minute measurements of sound levels taken continuously over the survey period in the locations illustrated on Figure 3.

Figure 3: Noise Measurement Locations

The sound level meters used are shown in Table 2.

Equipment	Type	Serial Number	Calibration	
			Date	Certificate no
MP1				
Svantek Class 1 Sound and Vibration Analyser	958A	59140	19/10/20	14016196-1
Microphone	MK 255	12582	19/10/20	14016196-1
Preamplifier	SV 12L	57964	19/10/20	14016196-1
Svantek tri-axial accelerometer	SV84	E2154	19/10/20	14016196-2
MP2				
Svantek Class 1 Sound and Vibration Analyser	958A	59146	26/08/20	14015923-1
Microphone	MK 255	12565	26/08/20	14015923-1
Preamplifier	SV 12L	57962	26/08/20	14015923-1
Svantek tri-axial accelerometer	SV84	E2149	26/08/20	14015923-2
Svantek SV33 field calibrator	SV33	58228	15/05/20	14015460

Table 2: Noise Survey Equipment

3.1 Survey results

From the data collected, it is possible to calculate representative daytime and night-time noise levels for the site. The average daytime and night-time levels calculated are provided in Table 3 and Table 4.

Time Period	Average Ambient Sound Level ($L_{Aeq, 15min}$)	Typical Maximum Sound Level (L_{AFmax})	Background Sound Level Range ($L_{A90, 15min}$)	Typical Background Sound Level ($L_{A90, 15min}$)
Daytime (0700-2300)	47	73	23 - 46	30
Night-time (2300-0700)	44	60	22 - 45	25

Table 3: Daytime and Night-Time Noise Levels: MP1 (representative of NSR A)

Time Period	Average Ambient Sound Level ($L_{Aeq, 15min}$)	Typical Maximum Sound Level (L_{AFmax})	Background Sound Level Range ($L_{A90, 15min}$)	Typical Background Sound Level ($L_{A90, 15min}$)
Daytime (0700-2300)	52	77	31 - 45	35

Night-time (2300-0700)	45	60	31 - 45	33

Table 4: Daytime and Night-Time Noise Levels: MP2 (representative of NSR B)

Typical maximum noise levels have been calculated as the level which is exceeded more than 10 times in the time period.

The time history plot for each sound level meter is provided in Figure 4 and Figure 5.

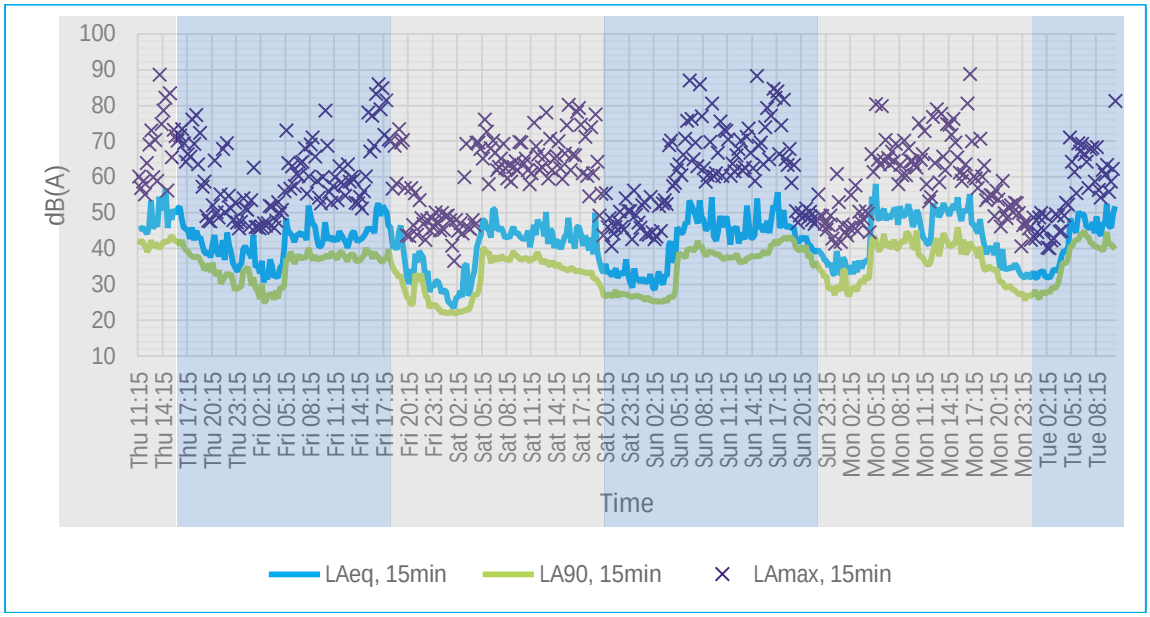

Figure 4: Time History Plot of Sound Measurements: MP1 (representative of NSR A)

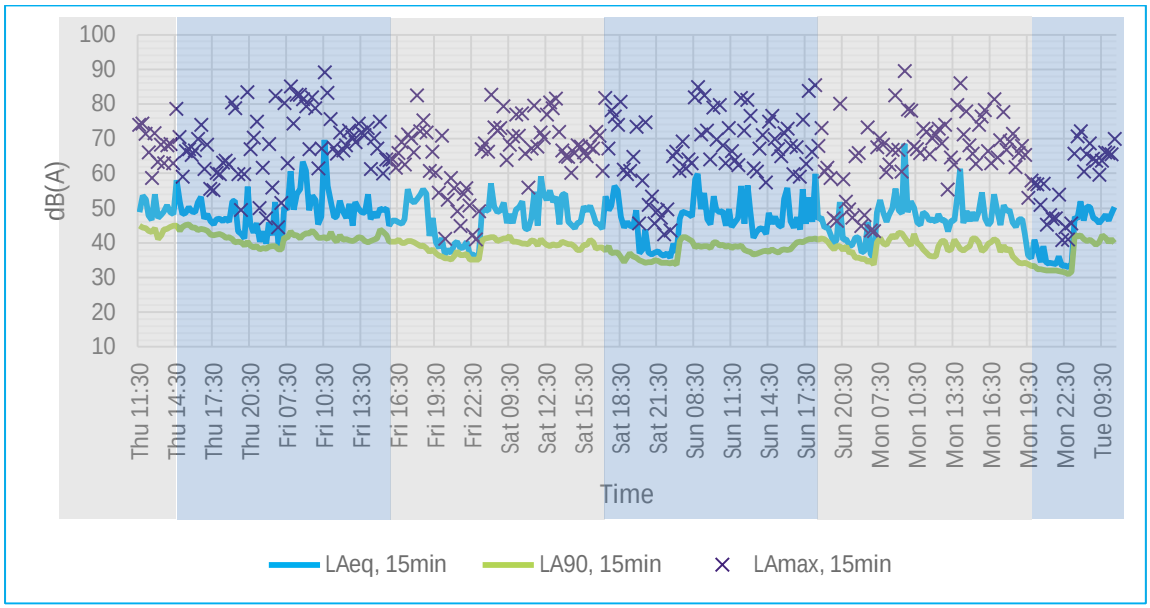

Figure 5: Time History Plot of Sound Measurements: MP2 (representative of NSR B)

Figure 6 and Figure 7 provide a summary of the background sound levels measured between 23:00 hrs and 00:00 hrs at MP1 and MP2 respectively.

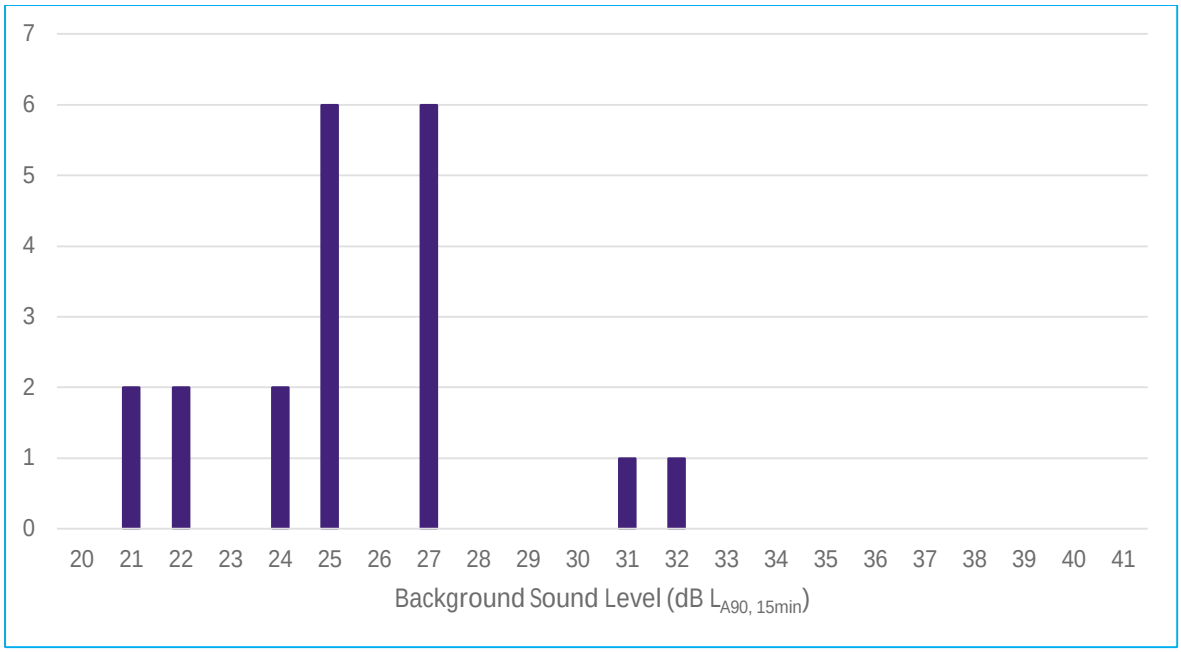

Figure 6: Background Sound Levels for the Period 23:00 hrs to 00:00 hrs: MP1 (representative of NSR A)

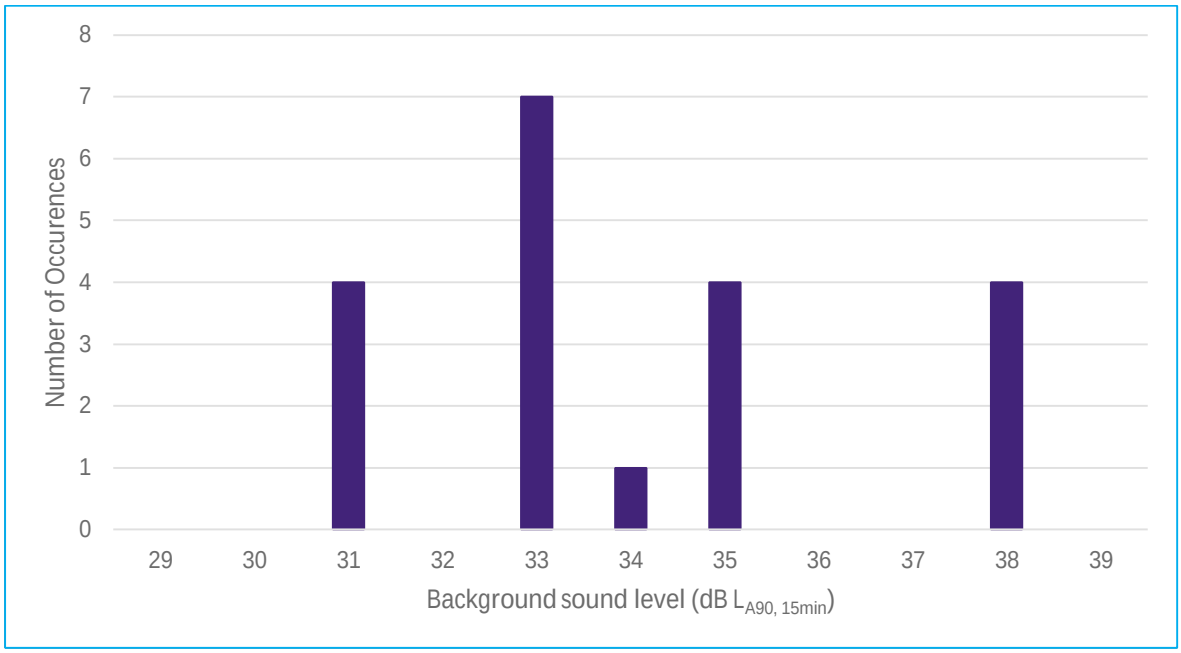

Figure 7: Background Sound Levels for the Period 23:00 hrs to 00:00 hrs: MP2 (representative of NSR B)

It can be seen that the typical background sound level between 23:00 hrs and 00:00 hrs is 25 dB $L_{A90, 15min}$ at MP1 and 33 dB $L_{A90, 15min}$ at MP2.

3.1 Site Observations

3.3.1 Weather

During setup and collection of the equipment, the following weather conditions were observed:

Weather was cold and clear during equipment setup, with no precipitation.

A small amount of snow was recorded over the weekend period, but no rain or other precipitation. Temperatures ranged from -1 to 10 degrees centigrade.

Wind speeds were recorded below 5m/s for the duration of the survey period, according to local weather records.

3.3.2 Noise Environment

The following was observed about the noise environment at the site during the survey:

MP1

At MP1 traffic noise from the A417 was the dominant noise source, with occasional local vehicle movements in the village of Ampney Crucis also audible.

Noise from domestic gardening activity (lawn mower or similar) was audible at times, coming from the village.

At MP1 dogs barking from across the valley were audible, along with bird noise from the trees in the direct vicinity.

MP2

Similar noise environment to MP1, but a fountain at the rear of the main house is subjectively equal level with the traffic noise coming from the A417.

Other sounds are comparatively less noticeable due to the masking effect of the fountain, which dominates background sound levels.

4 NOISE ASSESSMENT

4.1 Live Music and Amplified Sound

4.1.1 Appropriate Noise Criteria

Reasonable targets for noise levels are not prescriptively defined by the regulations and policy outlined in Appendix 1, but concepts are established that should be achieved by any target that is set. In particular the NPPF, and PPG: Noise (July 2019) suggest that a Low Observable Adverse Effect Level (LOAEL) provides an upper allowable impact, which should be considered to be acceptable. To provide guidance on objective levels likely to achieve this, we advise that it is appropriate to refer to the Code of Practice on Environmental Noise Control at Concerts (CPENCC), and consider the number of events being proposed.

A music noise level (MNL) not audible within nearby dwellings, as suggested in Paragraph 3.2 of CPENCC, is considered a suitable guideline to protect nearby residents to Ampney Park from adverse noise impact. With reference to the guidance note to Paragraph 3.2, the MNL will be controlled so that it is just audible outside the noise sensitive premises.

Whilst consideration of inaudibility is vague, imprecise and subjective, a MNL 5 dB below background sound level is likely to be just audible outside sensitive receptors, but would be expected to be inaudible inside with windows and doors closed or slightly open. The background sound level measured at MP1 was 25 dB $L_{A90,\ 15min}$, which is representative of NSR A. The background sound level measured at MP2 was 33 dB $L_{A90,\ 15min}$, which is representative of NSR B, NSR D and NSR E. The MNL should therefore not exceed 20 dB $L_{Aeq,\ 15mins}$ outside the dwelling at NSR A and 28 dB $L_{Aeq,\ 15mins}$ outside the dwellings at NSR B, NSR D and NSR E.

In addition, CPENCC suggests that low frequency noise levels do not exceed 70 dB in either the 63 Hz or the 125 Hz octave bands at 1 m from the facades of sensitive properties. Due to the predominantly rural character of the area, a value of 50 dB in these octave bands would be a more appropriate target level for low frequency sound from events at Ampney Park.

4.1.2 Source Noise Level

Source levels below 90 dB $L_{Aeq,\ T}$ are generally less desirable for events with amplified music, where a useful range is between 88 and 95 dB $L_{Aeq,\ T}$, with the upper end of the range generally meeting guest and organiser expectations more thoroughly. For some types of event, even higher music levels may be desirable to meet guest and organiser expectations.

4.1.3 Venue Building

Distance Attenuation

As there are several structures situated between the Venue Building and NSR B and NSR B is a similar distance from the Venue Building as NSR A, it is considered that attenuating sound to NSR A will also adequately attenuate sound to NSR B. Using a propagation calculation, it is possible to calculate the attenuation expected 1 m from the façade of the Venue Building to NSR A, a distance of 145 m. Noise from the PA system is calculated to attenuate by 43 dB to NSR A.

Building Envelope Attenuation: Main Hall

The weakest area of the building envelope is the glazing to the windows and doors in the southern façade of the Main Hall and the roof lights. We have been advised that glazing with a specification of 4 mm / 10 mm / 4 mm (glass/ air gap/ glass) will be used for these windows. Using the assumptions in Section 1.4, the building envelope is estimated to provide attenuation of 27 dB.

Building Envelope Attenuation: Dance Area and Lounge

Using the assumptions in Section 1.4, the building envelope is estimated to provide attenuation of 33 dB.

Music Noise Level Assessment from Venue Building

Table 5 provides the summary of the predicted music noise levels from the Venue Building.

Receptor	Music Noise Level from Main Hall 1 m from Dwelling	Comment on Noise Levels from Main Hall	Music Noise Level from Dance Area and Lounge 1 m from Dwelling	Comment on Noise Levels from Dance Area and Lounge
A: Ash House	Overall: 27 dB $L_{Aeq, T}$ 63 Hz: 33 dB $L_{eq, T}$ 125 Hz: 29 dB $L_{eq, T}$	Overall: 2 dB above the typical background sound level and 7 dB above the target noise level 63 Hz and 125 Hz: meets the target noise level	Overall: 20 dB $L_{Aeq, T}$ 63 Hz: 24 dB $L_{eq, T}$ 125 Hz: 22 dB $L_{eq, T}$	Overall: meets target noise level 63 Hz and 125 Hz: meets the target noise level
B: The Coach House	N/A: significant structures between sources and receptor, target noise levels expected to be met.			
D: Ash House Bungalow	Overall: 26 dB $L_{Aeq, T}$ 63 Hz: 31 dB $L_{eq, T}$ 125 Hz: 28 dB $L_{eq, T}$	Overall: meets the target noise level 63 Hz and 125 Hz: meets the target noise level	Overall: 20 dB $L_{Aeq, T}$ 63 Hz: 24 dB $L_{eq, T}$ 125 Hz: 22 dB $L_{eq, T}$	Overall: meets the target noise level 63 Hz and 125 Hz: meets the target noise level
E: Fitzhamon House	Overall: 25 dB $L_{Aeq, T}$ 63 Hz: 31 dB $L_{eq, T}$ 125 Hz: 28 dB $L_{eq, T}$	Overall: meets the target noise level 63 Hz and 125 Hz: meets the target noise level	Overall: 20 dB $L_{Aeq, T}$ 63 Hz: 24 dB $L_{eq, T}$ 125 Hz: 22 dB $L_{eq, T}$	Overall: meets the target noise level 63 Hz and 125 Hz: meets the target noise level

Table 5: Music Noise Level from Venue Building

Table 5 indicates that the overall target noise levels are predicted to be exceeded at NSRs A, D and E. The noise level is the 63 Hz and 125 Hz octave band is predicted to meet the target noise level for those bands.

4.1.4 Outdoor Ceremony Space

Distance Attenuation

Using a propagation calculation, it is possible to calculate the attenuation expected 1 m from the edge of the Outdoor Ceremony Space to the nearest NSRs (summarised in Table 1): the results are summarised in Table 6.

Receptor	Music Noise Level from Main Hall 1 m from Dwelling	Comment on Noise Levels from Main Hall
A: Ash House	Overall: 23 dB $L_{Aeq, T}$ 63 Hz and 125 Hz: 23 dB $L_{eq, T}$	Overall: below typical background sound level, 3 dB above target noise level 63 Hz and 125 Hz: meets the target noise level
B: The Coach House	N/A: significant structures between sources and receptor, target noise levels expected to be met.	
D: Ash House Bungalow	Overall: 26 dB $L_{Aeq, T}$ 63 Hz and 125 Hz: 26 dB $L_{eq, T}$	Overall: meets the target noise level 63 Hz and 125 Hz: meets the target noise level
E: Fitzhamon House	N/A: significant structures between sources and receptor, target noise levels expected to be met.	

Table 6: Music Noise Level from Outdoor Ceremony Space

Table 6 indicates that noise from two string instruments in the outdoor ceremony space to NSR A and NSR D is predicted to exceed the overall target noise levels. The noise level is the 63 Hz and 125 Hz octave band is predicted to meet the target noise level for those bands.

4.1 People Noise

4.2.1 Appropriate Noise Criteria

In Section 11 BS 4142:2014+A1:2019 suggests that a rating level that "does not exceed the background sound level is an indication of the specific sound source having a low impact, depending on the context". The context in this instance is that the residents in the vicinity of the proposed venue will already experience noise from people in the area, therefore people noise is not out of character for the area. The representative night-time background sound level at NSR A and NSR B, was 25 dB and 33 dB respectively, therefore the rating level of people noise 1 m outside the dwellings of NSR A and NSR B should not exceed 25 dB and 33 dB respectively.

4.2.2 Source Noise Level

The capacity of the venue is 150 guests. Assuming 50% of people are talking with a raised voice at any one time, the noise level will be 78 dB $L_{Aeq, T}$. This is likely to provide an overestimate of the people noise level at the NSRs.

4.2.3 Noise Breakout from People within the Venue Building

As the noise level from people speaking is more than 10 dB below the music noise level expected within the proposed buildings, music noise will be the dominant source of noise breaking out from the proposed buildings.

4.2.4 Noise from Venue Building Pergola and Courtyard

Table 7 summarises the noise level from people in the Venue Building pergola and courtyard at the nearest NSRs.

Receptor	People Noise Level from Venue Pergola 1 m from Dwelling	Comment on Noise Levels from Venue Pergola	People Noise Level from Venue Courtyard 1 m from Dwelling	Comment on Noise Levels from Venue Courtyard
A: Ash House	25 dB $L_{Aeq, T}$	Meets target noise level	Significant structures between sources and receptor, target noise levels expected to be met.	
B: The Coach House	Significant structures between sources and receptor, target noise levels expected to be met.		22 dB $L_{Aeq, T}$	Meets target noise level
D: Ash House Bungalow	27 dB $L_{Aeq, T}$	Meets target noise level	27 dB $L_{Aeq, T}$	Meets target noise level
E: Fitzhamon House	27 dB $L_{Aeq, T}$	Meets target noise level	27 dB $L_{Aeq, T}$	Meets target noise level

Table 7: Noise from People in the Venue Building Pergola and Courtyard

Table 7 indicates that the target noise levels are predicted to be met at all NSRs.

4.2.5 Noise from Outdoor Ceremony Space to NSR A

Table 8 summarises the noise level from people at the Outdoor Ceremony Space at the nearest NSRs.

Receptor	People Noise Level from Outdoor Ceremony Space 1 m from Dwelling	Comment on Noise Levels from Outdoor Ceremony Space
A: Ash House	24 dB $L_{Aeq, T}$	Meets target noise level
B: The Coach House	Significant structures between sources and receptor, target noise levels expected to be met.	
D: Ash House Bungalow	28 dB $L_{Aeq, T}$	Meets target noise level
E: Fitzhamon House	Significant structures between sources and receptor, target noise levels expected to be met.	

Table 8: Noise from People in the Venue Building Pergola and Courtyard

Table 8 indicates that the target noise levels are predicted to be met at all NSRs.

4.1 Noise from the Car Park

There are 60 car parking spaces proposed with the scheme, include staff and guests. The main noise source to be considered for the car parking is doors slamming, which primarily effects maximum noise levels due to the short duration of the sound. The level of a car door slamming can be as high as 90 dB L_{AFmax} at 1 m. The sound is impulsive, therefore a correction of 6 dB is appropriate to calculate the rating level of vehicle doors closing for comparison with the background sound level.

The latest proposed finishing time of events is 00:00, therefore the worst case should be assumed to be all guests staying until the event finishes, and then moving to their vehicles at a similar time.

Because of the location of the parking area and the screening provided by existing buildings on site to NSR B, the worst-case receptor for noise from the car park is NSR A. Table 9 provides a summary of the noise from doors closing to the nearest NSRs.

Receptor	Car Park Maximum Noise Level (L_{AFmax}) 1 m from Dwelling	Comment on Car Park Maximum Noise Level	Car Park Specific Noise Level ($L_{Aeq, 15min}$) 1 m from Dwelling	Comment on Car Park Specific Noise Level	Car Park Rating Level ($L_{Ar, 15min}$) 1 m from Dwelling	Comment on Car Park Rating Level
A: Ash House	53 dB L_{AFmax}	Meets the target noise level	35 dB $L_{Aeq, 15min}$	9 dB below existing ambient noise level	47 dB $L_{Ar, 15min}$	Exceeds the target noise level by 25 dB
B: The Coach House	47 dB L_{AFmax}	Meets the target noise level	29 dB $L_{Aeq, 15min}$	16 dB below existing ambient noise level	41 dB $L_{Ar, 15min}$	Exceeds the target noise level by 8 dB
D: Ash House Bungalow	57 dB L_{AFmax}	Meets the target noise level	39 dB $L_{Aeq, 15min}$	6 dB below existing ambient noise level	51 dB $L_{Ar, 15min}$	Exceeds the target noise level by 18 dB
E: Fitzhamon House	56 dB L_{AFmax}	Meets the target noise level	38 dB $L_{Aeq, 15min}$	7 dB below existing ambient noise level	50 dB $L_{Ar, 15min}$	Exceeds the target noise level by 17 dB

Table 9: Car Park Noise Level to NSR B

Table 9 indicates that the maximum sound levels of vehicle doors closing are below the target maximum noise level. The specific noise level is also lower than the existing ambient noise level, however, the rating level exceeds the target noise level by up to 25 dB, therefore noise mitigation measures are required to reduce the noise from vehicle doors closing.

4.4 Plant Noise

4.4.1 Appropriate Noise Criteria

In Section 11 BS 4142:2014+A1:2019 suggests that a rating level that "does not exceed the background sound level is an indication of the specific sound source having a low impact, depending on the

context". The context in this instance is that the residents in the vicinity of the proposed venue will already experience plant noise from the existing operation of Ampney House, therefore plant noise will not be out of character for the area. Plant noise should not exceed 25 dB $L_{Ar, 15min}$ at NSR A or 33 dB $L_{Ar, 15min}$ at NSR B, NSR D or NSR E.

4.4.2 Plant Rating Level Limit

Plant noise limits will be proposed in lieu of final plant selection, which will be finalised further into the project design.

The nearest distance the Venue Building louvres could be located to NSR A (the most sensitive receptor due to the lower background sound level) is approximately 160 m. The rating level of plant noise should therefore be restricted to 69 dB $L_{Ar, 15min}$ 1 m externally to the louvres of the plant room.

4.1 Grounds Building

4.5.1 Appropriate Noise Criteria

As stated previously, the representative background sound level at NSR A, the receptor most exposed to noise from the Ground Building and with the lowest representative background sound level, was 25 dB, therefore the rating level of noise from the Grounds Building 1 m outside the dwelling at NSR A should be restricted to 25 dB.

4.5.2 Ground Building Rating Level

The dominant source of noise at the Grounds Building is anticipated to be use of a chainsaw and tractor movements. An internal noise level of 103 dB is predicted if both items operate simultaneously. This results in a rating level of 25 dB 1 m from the dwelling of NSR A, which meets the target noise level.

2 NOISE MITIGATION MEASURES

3.1 Music Noise Level from Main Hall

As outlined in Section 4.1.3, it is necessary to reduce noise breakout from the Main Hall of the Venue Building. Table 10 provides a summary of the music noise levels if the 4 mm / 10 mm / 4 mm (glass/ air gap/ glass) windows and doors in the southern façade of the area and the rooflights are replaced with specification of 10 mm /12 mm / 6.4 mm (glass/ air gap/ laminated glass), which is used in the rest of the windows and doors of the Main Hall.

Receptor	Music Noise Level from Main Hall 1 m from Dwelling	Comment on Noise Levels from Main Hall
A: Ash House	Overall: 19 dB $L_{Aeq, T}$ 63 Hz: 30 dB $L_{eq, T}$ 125 Hz: 27 dB $L_{eq, T}$	Overall: meets the target noise level 63 Hz and 125 Hz: meets the target noise level
B: The Coach House	N/A: significant structures between sources and receptor, target noise levels expected to be met.	
D: Ash House Bungalow	Overall: 18 dB $L_{Aeq, T}$ 63 Hz: 28 dB $L_{eq, T}$ 125 Hz: 26 dB $L_{eq, T}$	Overall: meets the target noise level 63 Hz and 125 Hz: meets the target noise level
E: Fitzhamon House	Overall: 18 dB $L_{Aeq, T}$ 63 Hz: 28 dB $L_{eq, T}$ 125 Hz: 25 dB $L_{eq, T}$	Overall: meets the target noise level 63 Hz and 125 Hz: meets the target noise level

Table 10: Music Noise Level from Venue Building Min Hall: Enhanced Glazing

3.1 Noise from the Car Park

As outlined in Section 4.3, the predicted rating level of noise from vehicle doors closing exceeds the existing representative background sound level by up to 25 dB, therefore noise mitigation is required. It is not possible to alter the proposed location of the car park, therefore acoustic screening from the car park to the nearest NSRs is required. Table 11 provides a summary of the predicted noise levels with a 3 m high perimeter fence comprising close-boarded timber with a minimum sheet material mass of 10 kg/m^2.

Receptor	Car Park Maximum Noise Level (L_{AFmax}) 1 m from Dwelling	Comment on Car Park Maximum Noise Level	Car Park Specific Noise Level ($L_{Aeq, 15min}$) 1 m from Dwelling	Comment on Car Park Specific Noise Level	Car Park Rating Level ($L_{Ar, 15min}$) 1 m from Dwelling	Comment on Car Park Rating Level
A: Ash House	44 dB L_{AFmax}	Meets the target noise level	27 dB $L_{Aeq, 15min}$	17 dB below existing ambient noise level	36 dB $L_{Ar, 15min}$	Exceeds the target noise level by 11 dB
B: The Coach House	33 dB L_{AFmax}	Meets the target noise level	15 dB $L_{Aeq, 15min}$	30 dB below existing ambient noise level	27 dB $L_{Ar, 15min}$	Meets the target noise level
D: Ash House Bungalow	47 dB L_{AFmax}	Meets the target noise level	29 dB $L_{Aeq, 15min}$	16 dB below existing ambient noise level	41 dB $L_{Ar, 15min}$	Exceeds the target noise level by 8 dB
E: Fitzhamon House	45 dB L_{AFmax}	Meets the target noise level	27 dB $L_{Aeq, 15min}$	18 dB below existing ambient noise level	39 dB $L_{Ar, 15min}$	Exceeds the target noise level by 6 dB

Table 11: Car Park Noise Level with 3 m High Acoustic Barrier

The rating level of vehicle doors closing is predicted to be 31 dB $L_{Ar, 15min}$ at NSR B, which is 2 dB below the existing representative background sound level. However, the rating level of vehicle doors closing is predicted to exceed the target noise level at NSR A, NSR D and NSR E.

It is not considered feasible to construct a car park perimeter barrier of more than 3 m in height, therefore the proposed noise mitigation represents best practical means.

In addition, the above predicted rating levels have been calculated assuming that all 60 vehicles close their doors within a 15-minute period between 23:00 hrs and 00:00 hrs: in reality this is unlikely as people will leave throughout the last hour or two of the event. Table 12 summarises the noise levels if the 60 vehicle doors were closed consistently over the last two hours of the event.

Receptor	Car Park Maximum Noise Level (L_{AFmax}) 1 m from Dwelling	Comment on Car Park Maximum Noise Level	Car Park Specific Noise Level ($L_{Aeq, 15min}$) 1 m from Dwelling	Comment on Car Park Specific Noise Level	Car Park Rating Level ($L_{Ar, 15min}$) 1 m from Dwelling	Comment on Car Park Rating Level
A: Ash House	44 dB L_{AFmax}	Meets the target noise level	18 dB $L_{Aeq, 15min}$	26 dB lower than existing ambient noise level	30 dB $L_{Ar, 15min}$	Exceeds the target noise level by 5 dB
B: The Coach House	33 dB L_{AFmax}	Meets the target noise level	6 dB $L_{Aeq, 15min}$	39 dB lower than existing ambient noise level	18 dB $L_{Ar, 15min}$	Meets the target noise level
D: Ash House Bungalow	47 dB L_{AFmax}	Meets the target noise level	20 dB $L_{Aeq, 15min}$	25 dB lower than existing ambient noise level	32 dB $L_{Ar, 15min}$	Meets the target noise level
E: Fitzhamon House	45 dB L_{AFmax}	Meets the target noise level	18 dB $L_{Aeq, 15min}$	27 dB lower than existing ambient noise level	30 dB $L_{Ar, 15min}$	Meets the target noise level

Table 12: Car Park Noise Level with 3 m High Acoustic Barrier: Steadily Departing Cars

For comparison, if the 60 vehicle doors were closed consistently over the last two hours of the event there would be approximately eight doors closures per 15-minute period. This results in a rating level of 30 dB 1 m from the dwelling at NSR A, which is 5 dB above the existing background sound level. However, the specific noise level is 26 dB below the existing ambient noise level.

6 CONCLUSION

An environmental noise assessment has been undertaken to assess the impact of environmental noise from events at Ampney Park.

The proposal is for a purpose-built venue with several buildings across the site. The Venue Building will have an internal PA system for amplified music. Using a typical internal noise level for the type of events proposed, the breakout noise from the buildings has been calculated to the nearest noise sensitive receptors. The breakout noise from the Dance Area and Lounge is predicted to meet the target noise level of 5 dB below background sound level at the nearest NSRs. However, the breakout noise from the Main Hall is predicted to exceed the target noise level at NSR A, therefore it has been suggested that the glazing of the windows and doors in the southern façade of the Main Hall and the rooflights are replaced with glazing with a specification of 10 mm /12 mm / 6.4 mm (glass/ air gap/ laminated glass), which is used in the rest of the windows and doors of the Main Hall.

The level of noise from people talking in the pergola and courtyard of the Venue Building and Outdoor Ceremony Space has also been predicted to meet the target noise levels at the nearest NSRs.

Noise from vehicle doors closing is considered to be the dominant source of noise from the proposed car park. The assessment of noise from 60 vehicle doors closing in a 15-minute period is predicted to be lower than the existing typical maximum and ambient sound levels at the nearest NSRs, but above target the rating level at the nearest NSRs. A 3 m high perimeter fence is therefore proposed to the car park, which should be located on the northern, eastern and southern boundaries of the car park. The target rating noise level is still exceeded with use of a 3 m high acoustic barrier, but the target maximum noise level is met, and the specific noise level is at least 16 dB lower than the existing ambient sound levels, therefore noise from vehicle doors closing is unlikely to have a high impact on nearby residents.

It has been demonstrated that plant noise should achieve a rating level of no more than 69 dB $L_{Ar,\,15min}$ 1 m externally to the louvres proposed in the wall of the plant room of the Venue Building.

Noise from the Grounds Building is predicted to meet the target noise level 1 m from the dwellings at the nearest NSRs.

In conclusion, it is considered that, with the proposed noise mitigation measures, the proposed development will not cause a detrimental impact on the living environment of nearby existing residents in line with the requirements of the NPPF.

APPENDIX 1 Relevant Policy and Guidance

1 NATIONAL PLANNING POLICY

1.1 National Planning Policy Framework

Current planning policy is based on the National Planning Policy Framework (NPPF), revised in July 2021, which supports a presumption in favour of sustainable development, unless the adverse impacts of that development would outweigh the benefits when assessed against the policies in the Framework, taken as a whole.

The noise implications of development are recognised at paragraph 185, where it is stated that planning policies and decisions should:

> "mitigate and reduce to a minimum potential adverse impacts from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life[2]
>
> "identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason".

The Government's objective is to significantly boost the supply of homes, but puts in place protections for existing business in paragraph 187:

> "Planning policies and decisions should ensure that new development can be integrated effectively with existing business and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed."

1.1 Noise Policy Statement for England

Paragraph 185 of the NPPF refers to advice on adverse effects of noise given in the Noise Policy Statement for England[3] (NPSE). This document sets out a policy vision to

> "Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development".

To achieve this vision the Statement sets the following three aims:

> "Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:
>
> avoid significant adverse impacts on health and quality of life
>
> mitigate and minimise adverse impacts on health and quality of life; and
>
> where possible, contribute to the improvement of health and quality of life."

[2] See Explanatory Note to the Noise Policy Statement for England.
[3] Department for Environment, Food and Rural Affairs, Noise Policy Statement for England, London, 2010

1.1 National Planning Policy Guidance on Noise

The newly refreshed guidance states that "Good acoustic design needs to be considered early in the planning process to ensure that the most appropriate and cost-effective solutions are identified from the outset".

It also states that noise can override other planning concerns, where justified, "although it is important to look at noise in the context of the wider characteristics of a development proposal".

It makes clear that "As noise is a complex technical issue, it may be appropriate to seek experienced specialist assistance when applying this policy".

It also says that as exposure "crosses the 'lowest observed adverse effect' level boundary above which the 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. The noise therefore starts 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)". This indicates that below the Lowest Observable Adverse Effect Level upper threshold (LOAEL) would be considered acceptable. The noise exposure hierarchy is set out in a table which suggest that at a LOAEL that is "present and intrusive" that the action should be to mitigate and reduce to a minimum.

Above this is considered to be an Observable Adverse Effect (OAE). It makes clear that when the effect becomes significant (SOAEL) that it should be avoided. This guidance is consistent with the policy within NPSE.

2 OTHER RELEVANT GUIDANCE AND LEGISLATION

1.4 Guidance: Code of Practice on Environmental Noise Control at Concerts

In lieu of any specific guidance on noise from private events, the Code of Practice on Environmental Noise Control at Concerts (CPENCC), published by the Noise Council in 1995, is the most relevant guidance document for music noise from events, and is often applied by local authorities.

The method used to assess environmental noise from music events to nearby residents is to consider the Music Noise Levels (MNL, $L_{Aeq,\ 15mins}$) from the events and compare it to the guideline values proposed in Table 1 of the document for up to 12 events per year. For more than 12 events per year, Note 5 of Table 1 suggests that:

> "For indoor venues used for up to about 30 events per calendar year an MNL not exceeding the background noise by more than 5 dB(A) over a fifteen minute period is recommended for events finishing no later than 23.00 hours."

It Paragraph 3.2 is suggest that:

> "For events continuing or held between the hours 23.00 and 09.00 the music noise should not be audible within noise-sensitive premises with windows open in a typical manner for ventilation."

As a guidance note to Paragraph 3.2 states:

> "Control can be exercised in this situation by limiting the music noise so that it is just audible outside the noise sensitive premises. When that is achieved it can be assumed that the music noise is not audible inside the noise sensitive premises".

This provision will also protect residents from adverse noise impacts in their gardens.

Regarding low frequency noise, CPENCC states, as a notes to 3.4, that:

> "Although no precise guidance is available the following may be found helpful (Ref.8): A level up to 70 dB in either of the 63 Hz or 125 Hz octave frequency band is satisfactory; a level of 80 dB or more in either of those octave frequency bands causes significant disturbance."

1.4 Other relevant guidance

The Noise from Pubs and Clubs final report for Defra, dated March 2005 (under contract NANR 92) is of interest, in that it considers an optimised UK assessment method. It identifies a number of criteria to be proposed for validation in Table 7, but is not conclusive about which one is favoured.

Name	Parameter	Type
IoA working group annex	L_{Aeq} vs L_{A90} plus L_{10} vs L_{90} in 40-160 Hz 1/3 octave bands	Relative
BS 4142 / Noise Act 1996	L_{Aeq} vs. background (L_{A90}, L_{A99}, etc.)	Relative
Noise Rating curve	1/3 octave (L_{eq}, L_{10} or L_{max}) vs. NR curve	Absolute
Absolute L_{Aeq}	L_{Aeq}	Absolute
DIN 45680 / Moorhouse	10 – 160 Hz 1/3 octave L_{eq} vs reference curve	Absolute
Inaudibility	Subjective	Relative

Table 7. Schedule of proposed criteria for validation.