cass allen

Architectural & Environmental Acousticians
Noise & Vibration Engineers

The Granary Estates
The Estates Office
Parsonage Farm
Woodditton
Newmarket
Suffolk CB8 9RZ

Ref: RP04-19093-R1
Date: 17 June 2022

Dear Mr Taylor,

RE: THE GRANARY ESTATES – WEDDING AND EVENTS VENUE

Introduction

Cass Allen was instructed to assess like the likely noise impact of a proposed change to the currently permitted operations at the above site. The relevant noise related planning conditions (Application Ref. 22/00253/VAR) are reproduced below for reference:

> *7 Prior to the implementation of the permission, hereby granted, a Noise Management Plan shall be submitted and approved in writing with the Local Planning Authority. Such a plan shall include, but not be restricted to, details of the following:*
>
> - *a noise limiting system to be used to cover all aspects of amplified sound;*
> - *measures to ensure that the noise limiting system will be set up and operated in such a way as to achieve the external noise levels detailed in Figure 1 of the Cass Allen Noise Mitigation Follow-Up Assessment reference RP03-19093 dated 10 July 2020;*
> - *proposals for servicing and maintenance of the noise limiting system;*
> - *measures regarding the layout and position of the speaker system;*
> - *measures regarding the management of guests leaving the venue;*
> - *measures regarding the management of vehicle movements on the site, particularly at the end of events.*
>
> *10 No music shall be played outside of the buildings at any time.*

The following change to the above conditions is proposed:

Condition 10: *Outdoor music is permitted between 10:00 hrs -18:00 hrs (Monday to Sunday) in accordance with the Noise Assessment produced by Cass Allen Associates, reference: RP04-19093-R0.*

This condition is permitted on a temporary basis until 01 January 2026. As of the 02 January 2026 the condition will revert to: No music shall be played outside of the buildings at any time.

The aim of this report will be investigate the likely noise impact of the proposed changes.

Assessment

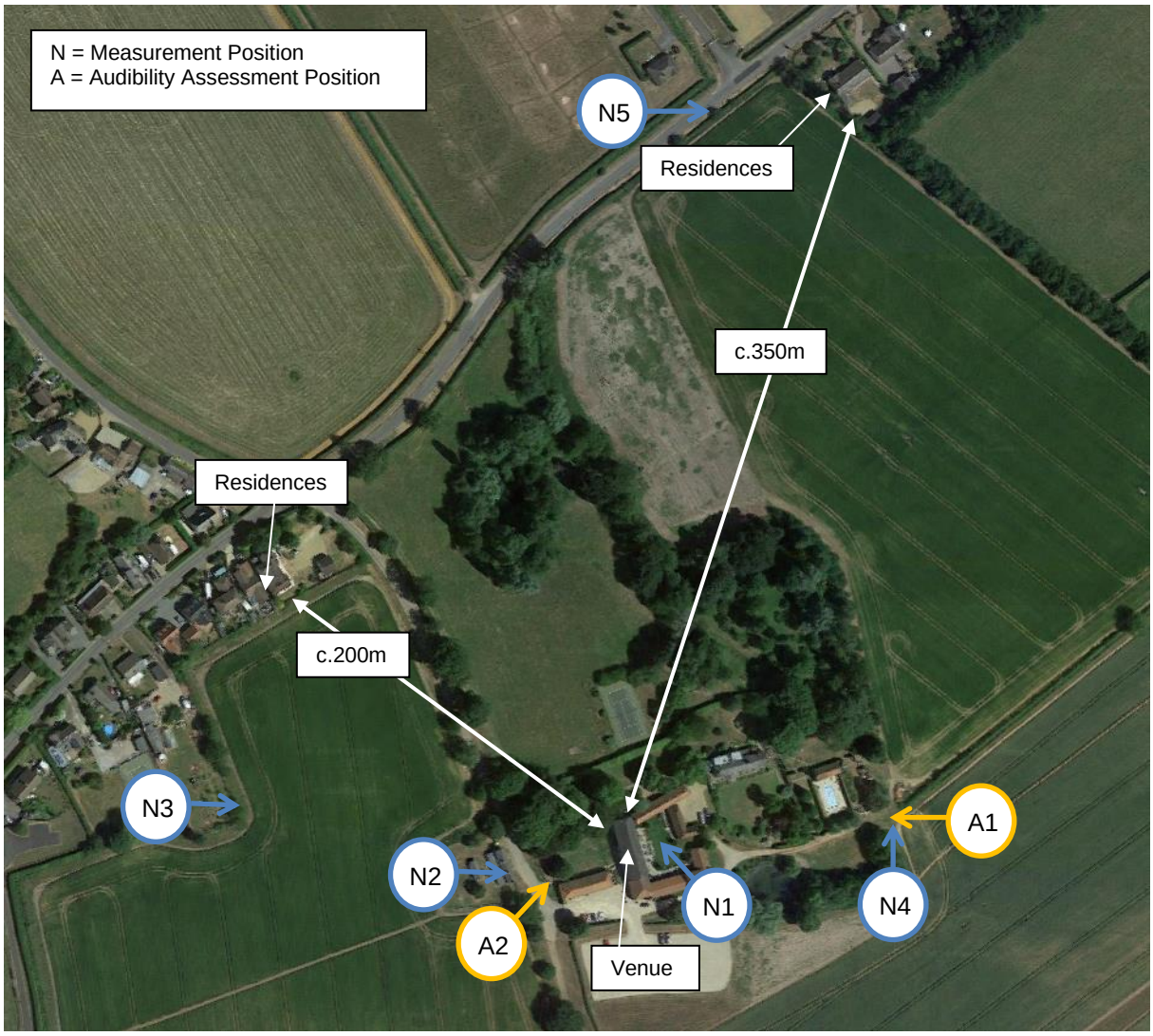
The assessment methodology is summarised as follows:

1. Measure music played at varying volumes in the venue courtyard.
2. Assess audibility at locations that would be reasonable for venue staff to monitor during an event as part of an agreed noise management plan.
3. Using the measured levels and audibility assessments, determine the following:
    a) Whether outdoor music in the courtyard at the desired operational level will be inaudible at the assessment locations.
    b) The highest volume that outdoor music in the courtyard can be played while remaining inaudible at the assessment locations.

A noise survey was carried out at the site on Monday 30 May 2022 between 1100-1300hrs. This period was chosen because the weather conditions were clear and still, resulting in the lowest associated background noise levels against which to assess audibility. Measurements confirmed that the background levels (LA90) were low during the site survey. Comparison with previously collected long-term measurement data confirmed that background levels were typical for the area and therefore a reasonable basis for assessment.

During the survey, attended measurements (Measurement Positions N1-N5), and audibility assessments (Audibility Assessment Positions A1 & A2) were taken in and around the venue. An annotated aerial image, showing the Measurement Positions and the Audibility Assessment Positions is provided below in Figure 1.

Figure 1 Annotated Aerial Image



The results of the survey are presented in full in Appendix 1.

Attended measurements were taken in the courtyard of the venue (Measurement Position N1) with music playing at three volumes: the desired operational volume, a noticeably higher volume, and an abnormally high volume causing the sound system amplifier to peak (which would be avoided by event staff).

For each of the three volumes, it was determined by listening whether the music was audible at two different locations (Audibility Assessment Position A1 and A2). These locations were chosen because:

- Both positions are significantly closer to the courtyard than the nearest sensitive receptors, therefore it is reasonable to conclude that music inaudible at those positions will also be inaudible at the nearest sensitive receptors.

- Both positions could both be readily monitored by staff during the course of an event, as part of a noise management plan.

The results of the audibility assessments and courtyard measurements are summarised below in Table 1.

Table 1 Audibility assessment summary

Measured level in courtyard (N1)	Audible at A1?	Audible at A2?	Notes	Volume Knob Position on Sound System Amplifier
47 dB LAeq,T	No	No	Desired operational level	
66 dB LAeq,T	Yes	Yes	Peaking the amplifier – abnormally high	
54 dB LAeq,T	No	No	Highest level resulting in inaudibility	

It was found that music up to 54 dB LAeq,T (corresponding to the fourth line on the amplifier dial as per the photo above with the source of music – typically a mobile phone or tablet – on full volume) can be played without being audible at the positions of the nearest sensitive receptors. Venue staff confirmed that music at this level is acceptable for their needs and would not need to be louder.

The amplifier is located in a locked cupboard which is only accessible by venue staff. It is therefore considered a reasonable management strategy that venue staff are made aware of the highest permissible amplifier setting given above with clear signage on or near the amplifier itself without the need for electronic limiters etc.

It is understood that there could be occasions where, rather than amplified music being played through the in-built sound system, musicians may play either amplified or unamplified background music within the courtyard (e.g. solo guitarist/ singer). This type of music will be subject to the same inaudibility test as the amplified music detailed above. Unamplified instruments/singing are not anticipated to be audible at the positions of the nearest noise sensitive receptors in any case due to the distance and screening present. Any

standalone amplification can also be controlled by management staff to ensure the inaudibility criteria are met.

The following amendment to the current Noise Management Plan (May 2021) is therefore suggested.

- External music within the courtyard shall be controlled to ensure inaudibility at Positions A1 and A2 below.

- A sign shall be placed on the amplifier associated with the external sound system indicating the maximum permissible volume setting as per the photograph below:

- The audibility of any music will be checked by event staff when the music commences and then at a frequency of not less than once per hour whilst music is playing. Where music is audible at Positions A1 and A2, the associated amplifier will be adjusted or the musician notified and managed accordingly.

With the above measures in place it is considered that there are no noise related reasons why Condition 10 may be amended as proposed.

Yours sincerely,

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Acoustics Consultant

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Appendix 1 Survey Results

Survey Summary:

The survey comprised short-term operator attended noise measurements at the site, including periods with and without amplified music.

Survey Period:

30/05/2022

Equipment Used (Appendix 1, Table 1):

Type	Manufacturer	Model	Serial Number
Sound level meter[1]	Bruel & Kjaer	2250	3007539
Calibrator	01dB	CAL31	83380

Note 1: All sound level meters were calibrated before and after measurement periods and no significant drift in calibration was found to have occurred. The results of the measurements are therefore considered to be representative.

Weather Conditions:

The observed weather conditions were acceptable for acoustic measurement throughout the attended survey periods (low wind speeds and no rain).

Measurement Positions (Appendix 1, Table 2):

Position (refer plan above)	Description
N1	Attended noise monitoring position. 1.5m above ground. Free-field. In centre of courtyard. Direct line of sight to venue.
N2	Attended noise monitoring position. 1.5m above ground. Free-field. Direct line of sight to venue.
N3	Attended noise monitoring position. 1.5m above ground. Free-field. Direct line of sight to venue.
N4	Attended noise monitoring position. 1.5m above ground. Free-field.
N5	Attended noise monitoring position. 1.5m above ground. Free-field.

Attended Noise Monitoring Results (Appendix 1, Table 3):

Date	Position	Time	Meas. Length	LAeq, dB	LAmax, dB	LA90, dB	Observations
30/05/2022	N1	11:19	1 min	47	54	44	In courtyard of venue with music playing at a typical background level.
		11:27	1 min	66	71	64	In courtyard of venue with music playing at an abnormally high level (peaking on the amplifier).
		11:38	1 min	54	62	48	In courtyard of venue with music playing just below the threshold of audibility at Audibility Position 1 (indicated in Figure 1).
		12:25	2 mins	45	55	41	In courtyard of venue with no music playing. Measurement dictated by ambient sources and a sprinkler in operation.
	N2	11:50	5 mins	39	57	34	Adjacent to cottages associated with venue. No music playing. Measurement dictated by ambient sources - birdsong, tree rustle, and vehicles.
	N3	12:06	5 mins	38	59	34	Adjacent to nearest noise sensitive boundary to north west. No music playing. Measurement dictated by ambient sources.
	N4	12:19	5 mins	35	49	30	Venue boundary – Audibility Position 1. Measurement dictated by ambient sources.
	N5	12:34	5 mins	60	89	35	Adjacent to dwellings to north east. No music playing. Measurement dictated by ambient sources, sporadic vehicle passes, and light aircraft overflight.
		12:40	5 mins	60	84	35	