

# Noise Management Strategy

The Cambridge Club

Childerley, Cambridgeshire, 2024



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ENVIROMENTAL CONSULTANTS

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## An introduction to Joynes Nash

Joynes Nash is a leading consultancy for the live events industry. We have extensive experience of live music events and a proven track record of working with event organisers to enhance the audience's experience, whilst preserving the image of events and venues.

Our consultants experience has ranged from relatively small scale to major events staged both in urban and residential environments, providing for tens of thousands of people. Projects and clients have included Junction 2, Carfest (North and South), Garage Nation Festival, BBC Introducing, Guards Polo Club, Tramlines Festival, Liverpool Sound City, Red Bull Music Academy. We are also responsible for looking after the interests of venues such as Donington Park Racing Circuit, Saracens Rugby Club and Tobacco Dock with respect to live events.

We consider despite the many technical challenges that events bring, that relationships between all interested parties are of paramount importance and that each and every one of these understands situations clearly. We therefore approach each event not in isolation, but carefully consider the public image of events, the venues and the thoughts of the wider community to make events successful and to secure venues for future years.

## About The Team

Pete Nash BSc (Hons), MSc, CEnvH, MCIEH, MIOA

Peter Nash has 16 years' experience as a Local Authority Environmental Health Officer, up to Technical Manager Level and has 9 years of Professional Practice within the Environment Industry. He holds a BSc(Hons) in Environmental Health, the IOA Diploma in Acoustics and Noise Control and an MSc in Applied Acoustics. He is a Chartered Environmental Health Practitioner and registered with the Environmental Health Registration Board. Peter is a Member of the Chartered Institute of Environmental Health, and a Member of the Institute of Acoustics. He has appeared as an expert witness in a number of significant noise nuisance and planning cases, public enquiries and appeals.

Simon Joynes BSc(Hons), MSc, CEnvH, MCIEH, AMILM

Simon Joynes has over 17 years' experience in both Private Sector and Local Government. He has acted as a senior advisor and has significant experience in the technical aspects and practical application of environmental law, including acting as an expert witness in courts and planning enquiries and the preparation and reviewing of environmental reports and mitigation strategies. (Air Quality, Land Contamination, Acoustics, Water Quality, Odour Management & Industry Regulation). He holds a BSc (Hons) Environmental Health, MSc in Contaminated Land Remediation, Certificates of Competence in Environmental Noise Assessment and Environmental Impact Assessments. He also holds affiliations with the Chartered Institute of Environmental Health and is an Associate Member of the Institute of Leadership and Management.

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## 1. Introduction

Joynes Nash has been tasked to consider the approach to noise management, for The Cambridge Club Festival 2024, Gaylors Field, Childerley, Cambridgeshire. It follows a similar successful offerings between 2021 and 2023 for which we provided similar services, including for Strawberries & Cream which did not take place in 2023 and is not due to place in 2024 at the site.

## 2. About the Noise Management Strategy

The event promoters and their advisors are committed to proactively manage noise and have successfully held events of a similar nature for many years throughout the UK. This Strategy looks to consider the feasibility of the venue, outline mechanisms for the control of noise during any event, ensure that any event accords with relevant guidance, does not cause a Public Nuisance and ensure that mechanisms are in place to effectively manage complaints.

## 3. Event Outline

The Festival, a successful event which has established Childerley Orchards as their home at is due to take place between the 7 – 10<sup>th</sup> June 2024 . The Cambridge Club was first created in 2017, founded on a love for feel good music and on wanting to bring families and friends together, for an event that celebrates good and enjoyable music and a love for good food.

The timings for 2024 are Friday 15.00 to 23.00 and 12.00 to 23.00 on Saturday & Sunday. The After Dark stage in the Orchard for campers will run similar to last year but extended for a further 1 hour until 03.00hrs and 00.30hrs on Sunday.

There is also provision for a further limited number of music concerts to take place on individual evenings up to 23.00hrs utilising the main stage but such proposals remain indicative at this time.

## 4. Site Context

Gaylors Field is located to the south of Childerley, Cambridgeshire in a largely rural area albeit one which is dominated by traffic noise from the A428 Trunk Road to the south of the site. There are a number of villages and residential properties in the locality the most sensitive one's which are used in this feasibility study being identified below.



## 5. Premises Licences

The organisers has previously held appropriate licences (Premises License SCDPL0549) and permissions for the site and revisions to such are currently being sought by the client. This strategy looks to fulfil part of the due diligence being conducted by our clients into the feasibility of the site for 2024 and to support an appropriate license application.

## 6. Permitted Noise Levels



The main guidance for any festival was historically contained within the Code of Practice for Concerts 1995 and whilst this has been withdrawn (and no replacement is currently available) the approach detailed in this strategy and to be adopted throughout is consistent with such.

Regarding permitted levels, in 2021 the event operated to a Target of 65dB(A) during the period 12.00 to 23.00hrs and 45dB(A) 23.00 to 02.00hrs and this remains suitable for 2024.

Our approach as always is to seek a relaxation only where it is necessary and ensure that during any such event any exceedance of a permitted level is both justified and necessary. We always monitor front of house levels, to ensure that such remain between 95 – 100dB(A), the minimum considered necessary for an event, and then balance such with offsite observations. Control is therefore always maintained throughout and it is demonstrable that there has been no unnecessary increase or creep in noise levels.

## 7. Low Frequency Noise

At the time of publication of the Noise Council Code, little information on the community response to low frequency noise from concerts was available. Footnotes were included in the Code which concluded, in the absence of any precise guidance, that a level of 70dB in the 63Hz and 125Hz octave band was satisfactory and that a level of 80dB or more in either of those octave frequency bands causes significant disturbance. The study referred to in the guidance is in fact based on frequency imbalance from concerts and relates to impacts at locations 2km away.

Near to the venue, the use of the  $L_{Aeq}$  index will adequately take account of the low frequency sound as the music's frequency spectrum is dominated by the low frequency bass sounds and in these circumstances the A-weighting network is sensitive to changes in the music noise level. The  $L_{Aeq}$  criterion will therefore limit the low frequency sound adequately. This approach has been supported by research carried out on behalf of DEFRA.

What is therefore proposed, is that we deal with the low frequency element based on professional experience both onsite and offsite. Experience suggests that to maintain a satisfactory level within audience areas individual frequencies between 40 and 80Hz should be kept between 105 and 115dB. Offsite the key is to then identify and rectify any frequency imbalances between the 1:3 octaves.

## 8. Preliminary Site Feasibility Study

In order to evaluate the feasibility of the site, noise predictions have been carried out at the most sensitive receptor positions based on an indicative site layout shown below.



The following assumptions have been made in predicting noise levels.

- An orientation correction of between 0db and 15dB is assumed for noise sensitive properties depending on the location relative to the stage location.



- Distance attenuation is based on progressive attenuation under neutral meteorological conditions
- Where appropriate, attenuation has been considered for the effect of barriers between the noise sources and noise sensitive premises. BS5228 Code of Practice for noise and vibration control of construction and open sites (2009) gives a working approximation of the effect of a barrier or other topographical feature. An attenuation of 10dB is assumed when the noise screen completely hides the source from the receiver.

### Predicted Receiver Levels

The predicted receiver levels have been determined using a distance attenuation correction of ( $L_2 = L_1 - 20 \log(r_2/r_1)$ ). The source levels utilised are based on experience from similar events.

St Neots Road	Distance	Resultant LAeq	Orientation	Orientation Correction	Barrier	Predicted LAeq
Stage 1 – 96db@40m	655	72	NW	10	5	57
Total						57

Boxworth	Distance	Resultant LAeq	Orientation	Orientation Correction	Barrier	Predicted LAeq
Stage 1 – 96db@40m	3089	58	NW	10	5	43
Total						43

Lolworth	Distance	Resultant LAeq	Orientation	Orientation Correction	Barrier	Predicted LAeq
Stage 1 – 96db@40m	3050	58	NW	12	5	41
Total						41

Scotland Road	Distance	Resultant LAeq	Orientation	Orientation Correction	Barrier	Predicted LAeq
Stage 1 – 96db@40m	1160	67	NW	12	5	50
Total						50

Two Pots Farm	Distance	Resultant LAeq	Orientation	Orientation Correction	Barrier	Predicted LAeq
Stage 1 – 96db@40m	1240	66	NW	8	5	53
Total						53

The calculations consider the main stage only as during previous years this has been the dominant source until 23.00hrs and the one which has required control. With regards to the period after 23.00hrs experience is that levels will need to be carefully, particularly in the low frequencies but this is heavily dependent on wind direction, temperature etc. In fact this is not considered a compliance issue but more subjective control requirements to minimise impacts.

The calculations are conservative, in that they do not consider any attenuation such as provided for by crowds, ground attenuation, the presence of portable structures on site etc. Neither do they consider the presence of boundary treatments which typically surround residential receptors and offer additional levels of attenuation.

## Limitations

It must be noted that noise predictions have several limitations with respect to live sound and whilst providing a relatively accurate indication of noise impact at sensitive premises, final levels can vary during actual operation of the event. Meteorological conditions such as temperature inversions and wind direction may for example have a significant effect and experience suggests that noise levels may be increased by up to 10dB.

## 9. Sound System Design and Setup

There is significant variation in the directivity of different sound systems provided by the various manufacturers, largely around the horizontal dispersion of the loudspeaker.

Therefore, the sound systems would be designed and set up in such a way as to minimise noise impact at noise sensitive properties. Sound systems would be flown to focus the noise into the audience area, with a requirement for array style systems. Their configuration would also aim to minimise horizontal and vertical dispersion to reduce overspill from the intended coverage areas. To achieve this any hung system would be positioned as low as possible to achieve full audience cover. Consideration would be given to delay speakers to achieve satisfactory audience cover, whilst not using excessive sound power from the stage.

Sub bass systems will also be set up to provide a cardioid dispersion patterns to maximise the directivity of sound systems and minimise low frequency noise levels behind the stages.

During the event any guest engineers or individual acts would have only limited control over the main PA system in their area. The maximum level at sound sites would be directly under the control of the Festival Organiser or its contractors and adjusted only by them.

## 10. Sound Check and Rehearsals

Dates and timings of sound checks and rehearsals and any noise propagation checks will be agreed with the Council's Noise Control Officer in advance. Typically these would be used to calibrate levels both internally within the event site and externally at receiver positions. Such levels would then be used as a guide throughout the event and will be established using music of a similar type. The Local Authority are invited to attend such should they wish.

## 11. Noise Control Monitoring



Prior to any stage running, the stage manager and sound engineers would be briefed by Joynes Nash on the importance of limiting any off-site disturbance and compliance restrictions.

The engineers would be encouraged to leave some “headroom” early in the event to provide a safety margin to allow for some upward movement of levels, should that be necessary to maintain audience satisfaction or permit headline acts.

The intention would be to initially run the systems at an anticipated audience satisfaction level), based on the audience levels of 95 - 98dB(A) and to modify them should that be necessary following off-site level monitoring throughout the event. Likewise, on site levels would always reflect audience size and dynamics (for example earlier in the day overall levels may be lower to reflect smaller audience size).

Provision would be made for a fixed monitoring position at an appropriate position, either at a mid-way point between the event and receptors or at front of house position(s). This position would be used to continually monitor levels throughout the event and provide a visual reference of levels to engineers and/or consultants. Arrangements will also be made to ensure that front of house levels at each of the individual stages will be periodically monitored during the event.

Throughout any event consultants would remain responsible for proactively monitoring noise. This would be done through conducting measurements at predetermined locations both internally and externally of the arena. Such positions would be dependent on final site layout, weather conditions etc.

Typically, we’d expect measurements to be conducted over a 15 minute period, albeit shorter measurement periods may be undertaken to determine compliance in line with the code of practice (i.e. it is typical that 5 minute measurements give a good indication of compliance over 15 minutes). All measurements would be recorded and be available for inspection at any time by the local Authority during the course of any event.

The sound monitoring team will be in contact with event control should any action need to be taken during the event and have authority to instruct the sound engineers to adjust sound levels.

## 12. Procedure for Responding to and Dealing with complaints

Good Public relations is a key pre-requisite of any work conducted by either Joynes Nash or the organisers as it has been repeatedly proven that prior awareness of a festival is important in managing resident’s expectations and allaying concerns. Surveys have even supported the fact that as prior awareness of a concert increases, the likelihood of being annoyed by noise falls.

The promoters would therefore ensure that an appropriate form of communication will be made with local residents, such as by letter or newspaper advertisement prior to the event; informing them of the details and including start and finish times of both the event and any sound checks. The form of communication will also include a dedicated number for noise complaints.



A telephone complaints line would be available for the duration of the event. Should any noise complaints be received, a consultant would investigate the complaint and if noise levels are deemed unacceptable, immediate action would be taken to reduce the levels of the noise source.

A complaints log would be maintained throughout the event, detailing addresses of complaints, times and actions. Such would also be available to the Local Authority on request along with actions taken, etc. The consultant would be contactable by officers of the Local Authority and available to deal with any matters arising at all times throughout the event.

### 13. Noise Management Resource

The size of any team deployed would allow for sufficient persons to conduct off-site measurements and on-site measurements to facilitate any reduction in noise levels.

All sound level meters used for the purposes of environmental monitoring would be integrating meters to Class 1 specification and subject to current calibration. At least one meter will be capable of real-time octave and/or one third octave band analyses.

Measurements within the sound sites would be made from fixed datum locations to provide representative levels against which changes can be made and measured. Where practical, meters and displays will be set up at Front of House positions with A weighted rolling 5 min  $L_{Eq}$ 's as well as SPL to provide a reference points for sound engineers. All measurements will be logged.

### 14. Local Authority Liaison

The Local Authority will be provided with contact details of those responsible.

Acoustic Consultants would work closely with the Local Authority, agreeing any changes to off-site monitoring positions, sharing noise data observations and other information wherever possible. The role performed by consultants is to ensure that any requests by the Local Authority are actioned by the festival organisers. All requests relating to noise would be routed through them to ensure that any noise issues are properly managed and dealt with as soon as possible. Results of any investigations and actions will be fed back to the Local Authority as soon as practicable or as agreed.

References to contact with Local Authority Officers are obviously dependent upon whether they wish to attend the event and does not infer any commitment on the part of any Authority.

### 15. Post Event Reporting

Following completion of the event, a report would be made available to the Local Authority within 10 working days of the event, detailing the findings during the event and any recommendations.

### 16. Setting Up, Dismantling of Venues

During any event set up and dismantling, all works which would be likely to cause disturbance at residential properties would be conducted between the hours of 08:00 and 20.00hrs. Within these times and as so far as reasonably practicable, all measures to minimise noise would be undertaken to ensure that no undue noise disturbance is caused to residential premises.

## 17. People and Crowd Noise

Whilst there is no formal mechanism for evaluating or controlling crowd noise, consideration would be given to minimising such as critical points such as during arrival and dispersal from the event. This would generally be done by ensuring that queueing where possible would be conducted internally rather than externally of the venue. Likewise, appropriate mechanisms to stagger arrival and departure, temporary screening, marshalling and signage etc. would be considered for any event.

Marshals would marshal and monitor the entrance and egress from the premises including the behaviour of those within the vicinity of the premises. This would help achieve orderly arrival and departure of persons and will reduce the risk of nuisance occurring.

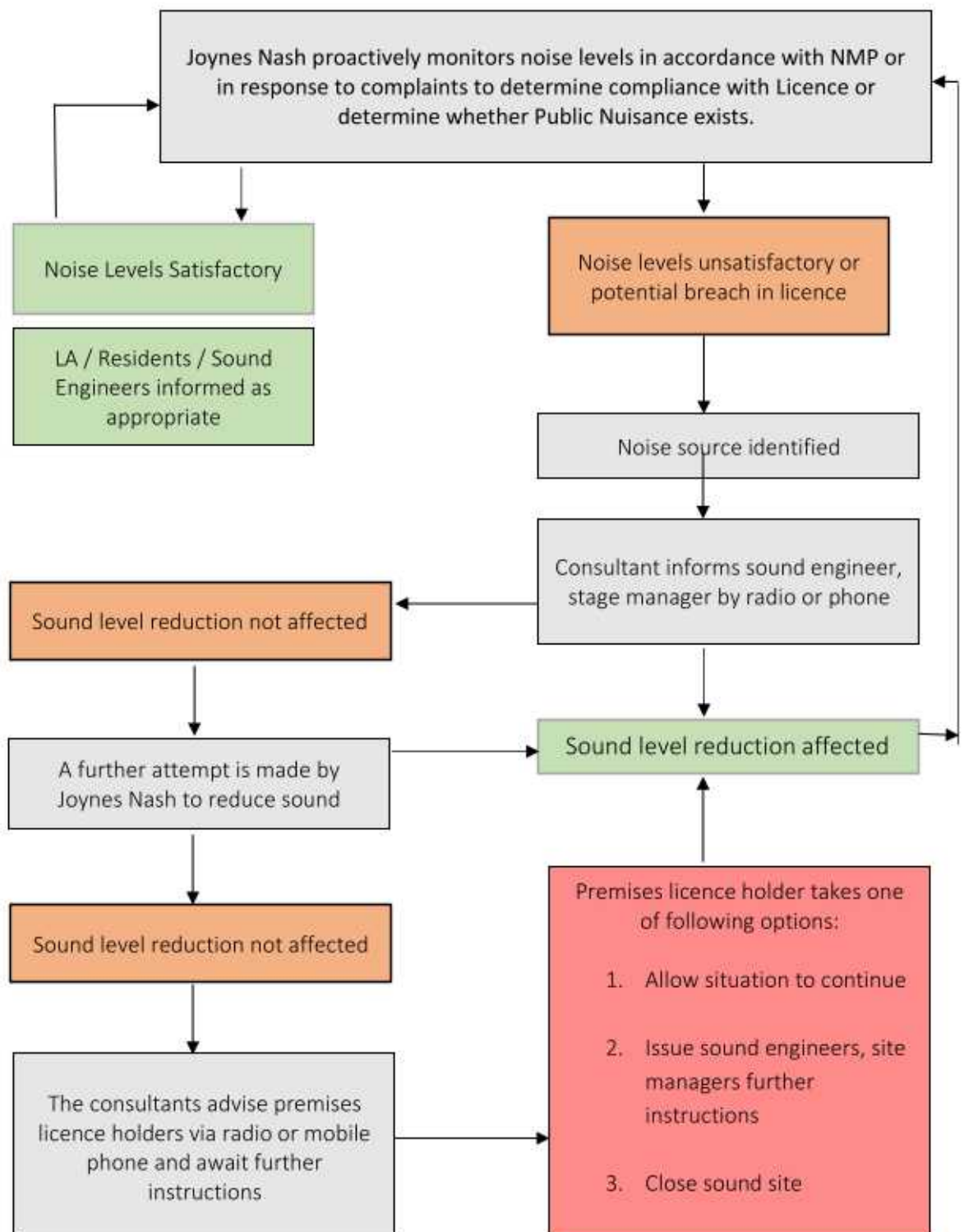
## 18. Conclusion

The United Kingdom has a diverse and vibrant music festival sector, which has been established for many years at numerous sites throughout the Country. The team behind this proposal have chosen to fulfil their ambitions and return this event to Childerley Orchard and accept all the challenges that go with such.

The key as always is to also engage with all stakeholders throughout the lifecycle of the event, manage their expectations and listen and learn for future years. The team are committed to making this work and would engage in a P.R campaign prior to the event and conduct a review process after the event to review the outcomes.

The noise management plan presented above aims to address all the challenges and look to ensure that an acceptable balance is maintained between the needs of the event organisers and the local residents. There is no evidence from 2021/3 that the events cannot be a success in 2024.

## Appendix A – Indicative Noise Response Flowchart





## Appendix B - Contact Numbers and Responsibilities

### Event Hotline Number

TBC

### Event Management

TBC

### Noise Consultants

Simon Joynes Director

Joynes Nash

[REDACTED]

Peter Nash Director

Joynes Nash

[REDACTED]

## Appendix C – Noise Units

1. Noise is defined as unwanted sound. The range of audible sound is from 0 dB to 140 dB. The frequency response of the ear is usually taken to be about 18 Hz (number of oscillations per second) to 18000 Hz. The ear does not respond equally to different frequencies at the same level. It is more sensitive in the mid-frequency range than the lower and higher frequencies and because of this, the low and high frequency components of a sound are reduced in importance by applying a weighting (filtering) circuit to the noise measuring instrument. The weighting which is most widely used and which correlates best with subjective response to noise is the dB(A) weighting. This is an internationally accepted standard for noise measurements.
2. For variable noise sources such as traffic, a difference of 3 dB(A) is just distinguishable. In addition, a doubling of a noise source would increase the overall noise by 3 dB(A). For example, if one item of machinery results in noise levels of 30 dB(A) at 10 m, then two identical items of machinery adjacent to one another would result in noise levels of 33 dB(A) at 10 m. The 'loudness' of a noise is a purely subjective parameter but it is generally accepted that an increase/decrease of 10 dB(A) corresponds to a doubling/halving in perceived loudness.
3. External noise levels are rarely steady but rise and fall according to activities within an area. In an attempt to produce a figure that relates this variable noise level to subjective response, a number of noise metrics have been developed. These include:

**LAeq** noise level - This is the 'equivalent continuous A-weighted sound pressure level, in decibels' and is defined in BS 7445 [1] as the 'value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time'. It is a unit commonly used to describe community response plus, construction noise and noise from industrial premises and is the most suitable unit for the description of other forms of environmental noise. In more straightforward terms, it is a measure of energy within the varying noise.

**LA90** noise level - This is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during quieter periods. It is often referred to as the background noise level and issued in the assessment of disturbance from industrial noise.

**LA10** noise level - This is the noise level that is exceeded for 10% of the measurement period and gives an indication of the noisier levels. It is a unit that has been used over many years for the measurement and assessment of road traffic noise.