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Neverworld 2019 Noise Management Plan V1

Wilderness Lane
Hever
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TN8 7LP

Prepared by: Chris Beale Wednesday, 8 May 2019

This management plan is a live document that will be updated as the overall concert plan develops. Updates will be version tracked and circulated by e-mail.

Comments or questions relating to this document should be referred to the author.

Chris Beale

Version tracking

Version	Date	Changes
1.0	08/05/2019	Original version

1.Overview

1.1.This NMP concerns a multi-day event for up to 5000 persons featuring various artists. It is scheduled from Thursday 1st August to Sunday 4th August 2019.The event is operated by a highly experienced management team that has extensive knowledge of large event production. SPLtrack is an environmental management company that has been responsible for noise management at many events throughout the UK.

1.2.The organisers declare their commitment to best practice in environmental noise management, acknowledging the recommendations of the Noise Council Guidance on the Control of Noise at Concerts 1995 and the amenity of nearby residents.

2.Arena layout and stage orientation

2.1.The site plan for the 2019 event is appended to this document.This plan may be updated as further information becomes available.

3.Propagation modelling

3.1.The arena plan has been updated to optimise noise propagation. Appendix 3 illustrates the likely impact of the event upon nominated receptors.

3.2.The model assumes standard meteorological conditions.

4.Size of sound systems

4.1.The organisers operate a policy that the sound system must be designed to ensure that the lowest amount of acoustic power is used to achieve satisfactory entertainment sound levels.This policy will help to ensure that sound systems remain under control throughout the event.

4.2.In pursuance of this policy and where required, delay loudspeaker positions and other sound containment methods may be deployed.This policy optimises audience sound levels and minimises offsite noise propagation.

5.Noise monitoring system

5.1.The noise monitoring system that will be used is called SPLtrack, a network of onsite and offsite meters that are viewed in real time at event control and at any location with Internet access including mobile devices.

The system conforms to BS61672-3 Class 1 and is supplied with UKAS approved calibration certificates.

5.2. A noise monitoring station will be located at the mix position of the principle noise source featuring a live display screen to inform the sound engineer of noise levels and frequency information.

5.3. Three offsite noise monitoring stations will be placed at representative locations agreed with the licensing authority.

5.4. SPLtrack produces a live dynamic sound propagation map and performs sound source matching to link sources with receptors.

5.5. The system permits real-time display of levels at all locations and will guide the mix engineers if sound levels approach the control limits proscribed under the license.

5.6. The noise monitoring stations connect to the central control point by either the site network, the Internet via broadband or by 3/4G and deliver real-time data and audio that enables the nature of the sound at the monitoring location to be determined.

6. Noise management team

6.1. The main noise monitoring team will comprise two representatives.

6.2. Site security personnel will be briefed to identify and report noise related issues in conjunction with their other duties. This includes portable sound systems that have not been authorised for use on the site.

6.3. A briefing, review and management policy document will be created for those involved during the event.

7. Communication

7.1. On-screen messaging is provided at the onsite meter location enabling direct communication with sound control staff. As this is a head-up illuminated display in eye-line of the sound engineers it provides the primary method of communication.

7.2. Sound operators will be equipped with walkie talkie radios and mobile numbers will be shared.

7.3. At key times and when necessary the sound control representative will be present at the sound mix position.

8.Scheduling of stages

8.1. The organisers will schedule the stage in accordance with the licensing conditions and leave sufficient time to ensure that the last performance ends prior to curfew.

9.Venue opening hours

9.1. Please refer to appendix 4.

10.Licensing conditions

10.1. The organisers undertake to comply with the conditions relating to noise levels set out by the licensing authority prior to the event.

10.2. When available, a copy of the noise conditions will be appended to the noise management plan and will be displayed in the sound control office and in abbreviated form at the sound stages.

11.Identification of the parties

11.1. The event managers are Phizzwizzards Ltd., Room 204 Shakespeare Business Centre, 245A Coldharbour Lane, Brixton SW98RR (PHW).

11.2. The sound management consultants are SPLtrack Limited (SPL) of Mallory Park Circuit, Kirkby Mallory, Leicestershire LE9 7QE.

11.3. The Licensing Authority is Sevenoaks District Council, Argyle Road, Sevenoaks, Kent TN13 1HG (SDC).

11.4. The sound management consultants will liaise with Environmental Health Officers of SDC under direction from PHW management.

12.Determination of MNL (Music Noise Level) limits

12.1. The MNL limits at noise sensitive receptors shall be set by SDC in agreement with PHW prior to the event.

12.2. SPL will configure the SPLtrack noise management system to monitor all audio sources and representative offsite locations and will provide real-time information to enable SDC to verify compliance with licence limits.

13.System Design

13.1. The design of each loudspeaker system will be undertaken by a competent person with an understanding of environmental noise issues.

13.2. The system will be designed with consideration to the directivity and scope of coverage of the loudspeaker systems.

13.3. System design shall be conducted with reference to any special characteristics of the topography or geography of the site.

13.4. The sound systems will be equipped with a suitable limiting device. Access to the limiting device shall be permitted to authorised persons only.

14. Installation of loudspeaker systems

14.1. Only qualified personnel shall undertake the installation of loudspeaker systems.

14.2. After installation the noise management representative will verify that the sound systems comply with the design criteria and a completion certificate will be signed.

15. Event Sound Control Office

15.1. The organiser will establish suitably located heated, well-lit, secure office facilities for the management of environmental noise.

16. Identification of points of control

16.1. The noise management representative will identify the locations at which the sound levels are directly controlled and adjusted and ensure that all parties are familiar with the means of access to these positions.

17. Onsite monitoring locations

17.1. A reference location will be identified for the sound system being the point at which sample sound level measurements will be taken. This will normally be at the front of house sound mix position.

18. Monitoring equipment

18.1. Class 1 networked monitoring stations will be installed at the appointed offsite monitoring station.

18.2. A Class 2 device may be used at the mix position.

19. Verification of sound systems

19.1. At a time agreed by the parties the noise management representative will conduct a propagation test. During this test, offsite noise measurements will be viewed via the SPLtrack monitoring system, streamed audio from the offsite location will be available and further measurements will be made using portable equipment if necessary.

19.2. The propagation test will consist of typical program music for each sound source, transmitted from each system in turn for a period of 1 minute at a level equivalent to the level set out in the event license and measured at the reference location for that system.

19.3. A further test will be conducted with all systems operating concurrently.

19.4. Offsite measurements will be taken at the monitoring locations established under <Identification of monitoring locations> above.

19.5. The offsite measurements will be related to the sound levels set at the control positions during the test and an attenuation figure will be calculated. From this figure a maximum level for the control position will be set for the duration of the event.

19.6. The MNL (Music Noise Level) limit set at the console will in any case not exceed 100dBLAeq(15 min) and the maximum sound pressure level at any point in the audience shall not exceed 137dB.

20. Briefing of sound personnel

20.1. All sound operators will be briefed prior to the event by SPL and event managers.

20.2. Sound operators will be briefed to follow the instructions of the noise management representative without delay and without verification from any other party.

21. Self-monitoring

21.1. Sound operators will be provided with displays showing in real time data from network noise meters.

21.2. Monitoring by sound operators will take place continually throughout the event. Sound operators will not be required to log their own measurements.

21.3. Sound contractors will be required to obscure third party sound meters from the sight of visiting engineers and will be obliged to rely only upon SPLtrack meter information.

22. Other Monitoring

22.1. Portable monitoring by the noise management representative and/or SDC may take place at intervals on or around the site. For this purpose a Class 1 sound level meter will be used.

23.Maintenance of Records and Reporting

23.1.Records will be kept in perpetuity.

23.2.Reports will be available on demand via the SPLtrack web portal..

23.3.Reports will be supplied in graph and data table format.They will include the following metrics:

23.3.1.$LA_{eq(t)}$

23.3.2.LAF_{max}

23.3.3.$LZ_{eq(t, 63Hz)}$

23.3.4.$LZ_{eq(t, 125Hz)}$

23.3.5.L_{10}

23.3.6.L_{90}

23.3.7.$LZ_{eq(t, 1/3 Octave)}$

24.Receipt of complaints

24.1.The event managers, the Licensing Authority or the Police may receive complaints from the community.

24.2.PHW will publish a dedicated telephone number for public complaints.

24.3.The noise management representative will maintain a log of all complaints referred and will document responses and actions.

24.4.The noise management representative will respect and will act upon the decision of SDC if remedial action is necessary with reference to PHW.

25.Procedure for dealing with excessive noise levels

25.1.It may be necessary for the sound configuration of the stage to be adjusted to comply with information received from off site measurements. In this case the following procedure shall be used.

25.1.1.The noise management representative will instruct the Sound Operator on the relevant stage to comply.

25.1.2.All actions will be verified and logged and the change in sound level recorded.

25.1.3.Further information regarding actions to be taken in cases of non-compliance with sound control instructions is given in appendix 1.

26.Communication with Sound Operators

26.1. The methods of contact to the Sound Operators are as follows:

26.1.1.Person to Person or by infrastructure telephone to the Sound Operator.

26.1.2.Via SPLtrack head-up displays.

26.1.3.By radio contact with the stage manager. All stage managers will have walkie-talkies with earphones for use in high noise environments. The appropriate channel will be identified at the briefing.

26.1.4.By mobile telephone. All mobile numbers will be collated on an information sheet prior to the event and distributed at the briefing.

27.Following the event:

27.1. A review of the sound levels and procedures will be undertaken by SPL within 14 days of the end of the event.

27.2. A report will be written by SPL and delivered to PHW within 30 days of the event.

27.3. SPL senior staff and/or the noise management representative will attend debriefing meetings as required.

End

Appendix 1 - Sound Management Process

(displayed in the venue office)

SPLtrack Ltd is the appointed sound consultant for the event. Sound levels are being monitored in real-time, 24 hours a day. The event has strict noise license conditions. The noise management representative will be working to keep the event operating within noise limits. Breach of these limits is a serious matter.

The guidance of the noise management representative must be respected at all times. When action is necessary, the following strategy will apply:

⬇ Stage 1 - Request to turn down ⬇

Assistance will be provided by the noise management representative. If the sound operator in question fails to comply:

⬇ Stage 2 - Warning ⬇

Person responsible for non-cooperation identified and the event manager informed.

⬇ Stage 3 - Intervention ⬇

1. Physical intervention. This may include independent attenuation of the system by other staff or physical disconnection of sound system elements.

2. Disciplinary action.

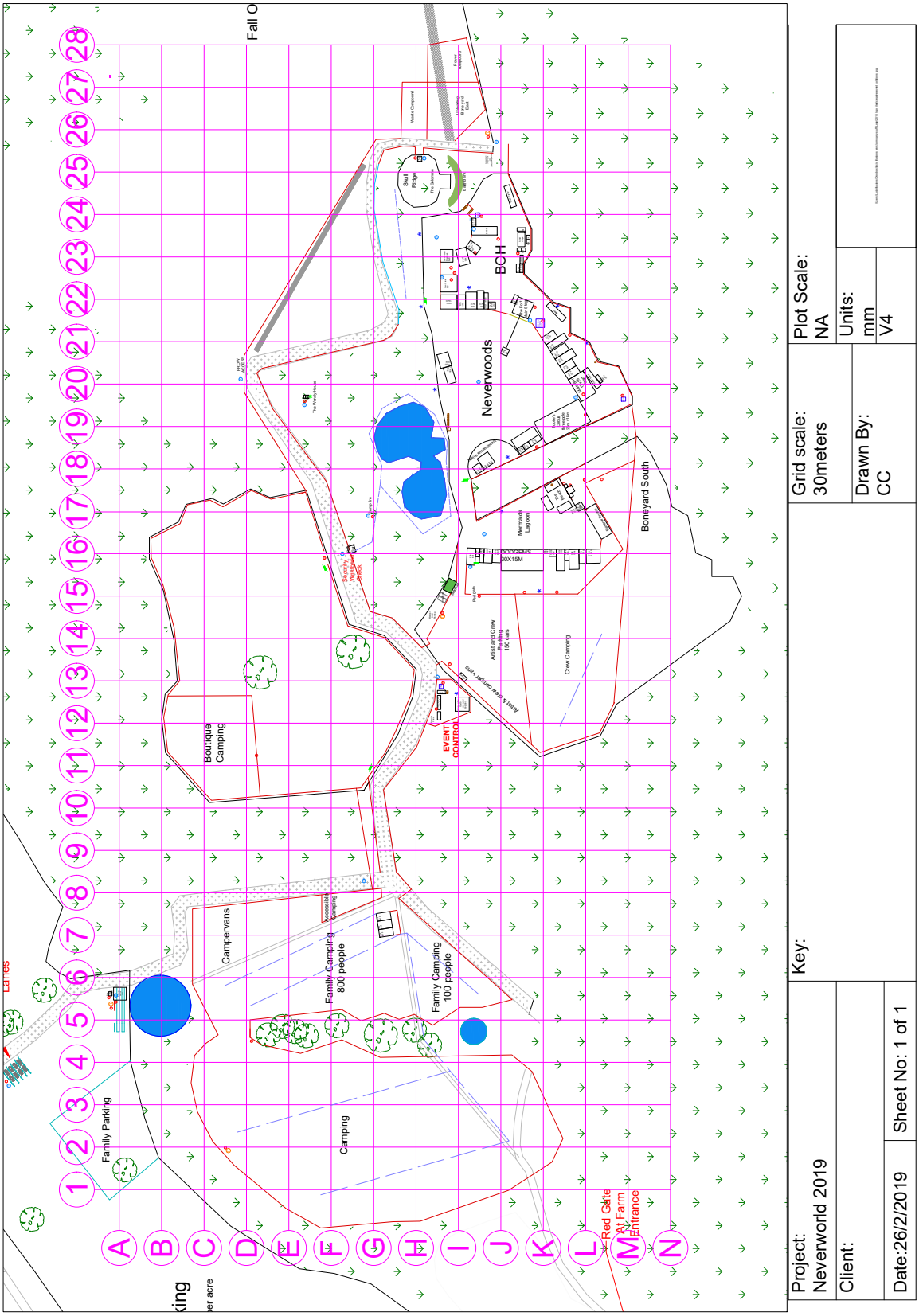
3. Ultimately if there are no other options the performance may be terminated.

Other facilities such as cafes and bars that may have permission to operate background music after hours must ensure that noise cannot be heard more than 10m from the facility in any direction.

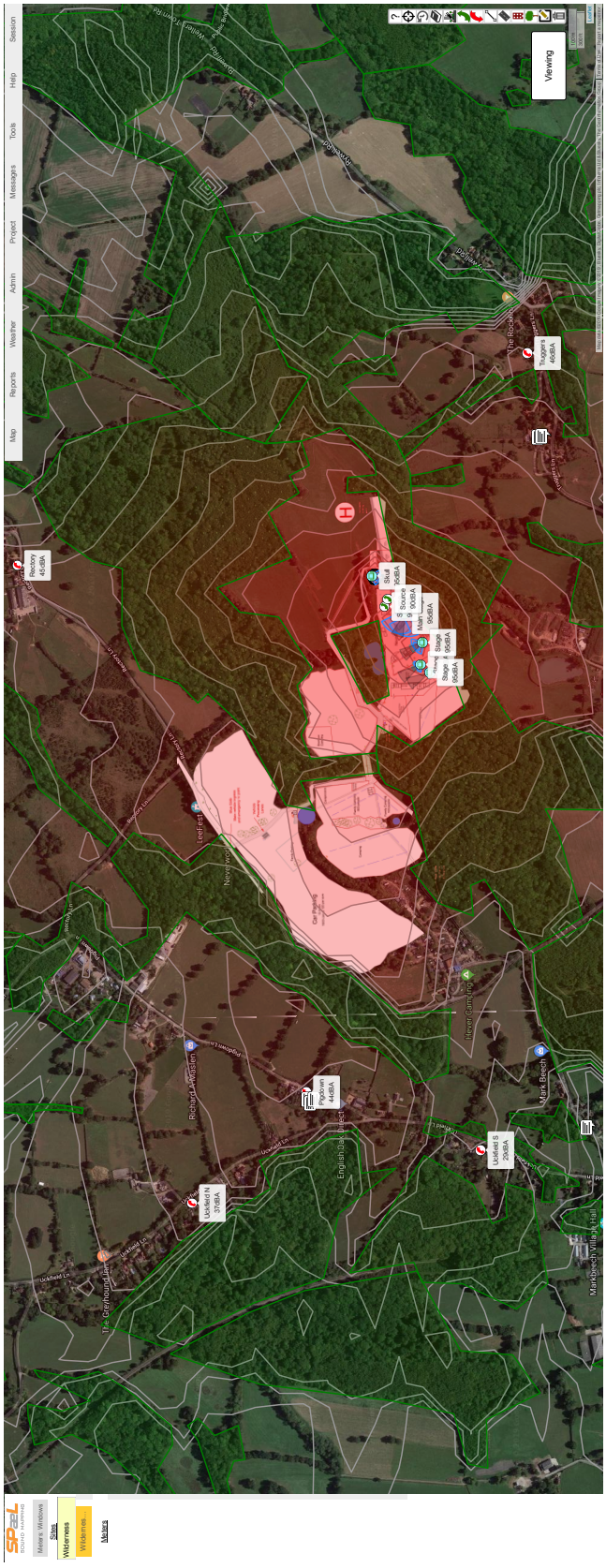
A competent person must be on duty at all times at each venue during operating hours.

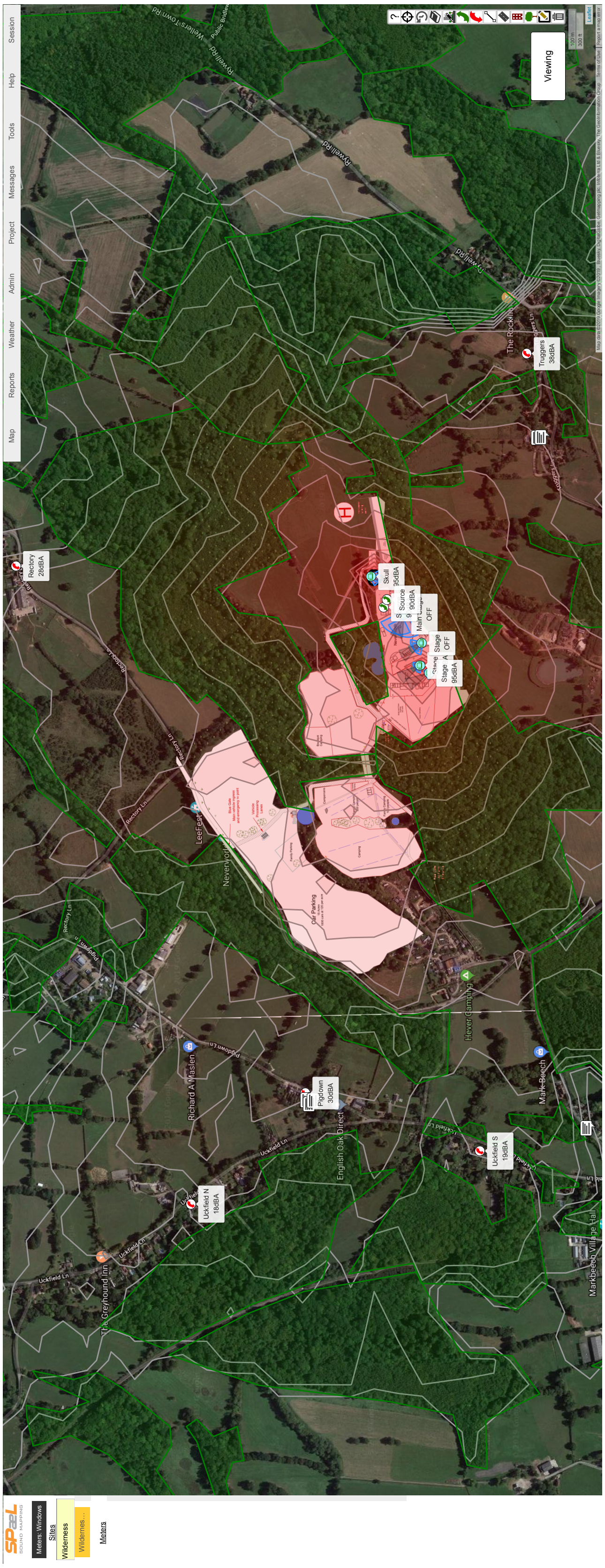
Be aware of venue operating times and post a copy of the venue closure schedule in a prominent position.

Appendix 2 - Site Plan

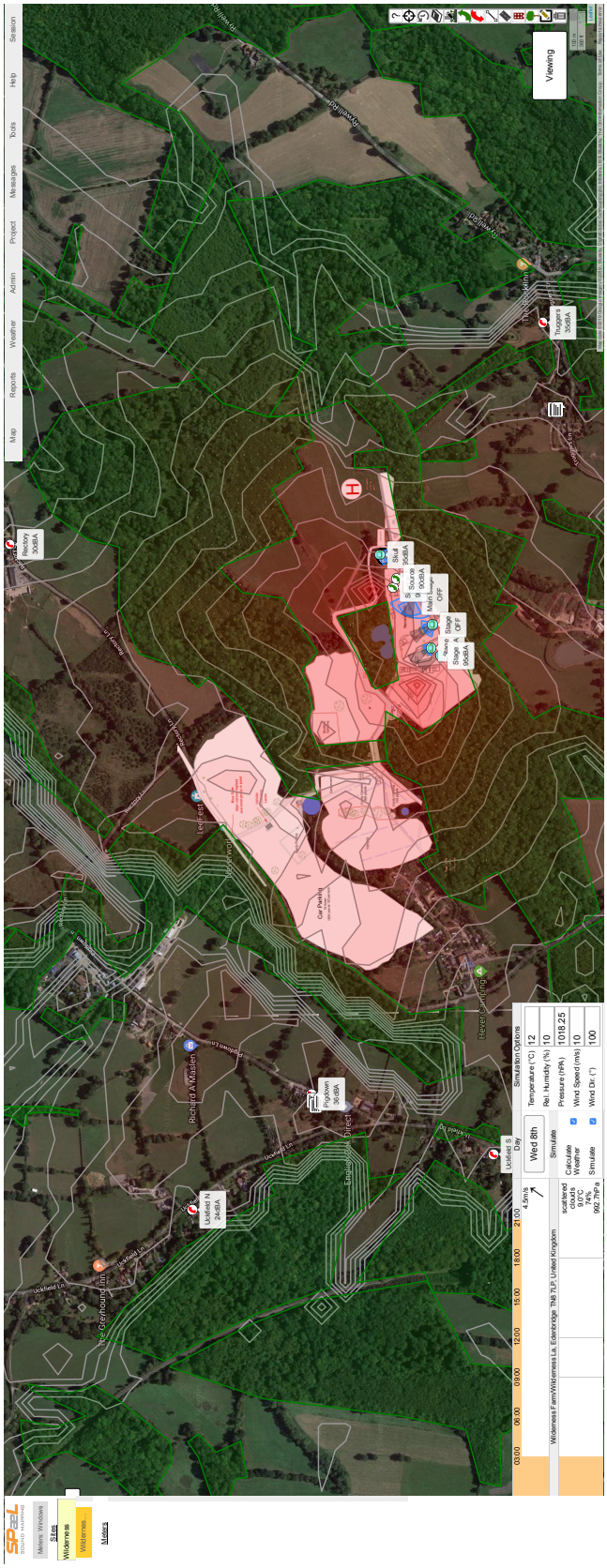


Appendix 3 - Propagation model





Post 23:00 Standard day



Post 23:00 East Wind 10% Humidity

Appendix 4 - Venue applied hours

Main Stage to finish at 23:00

Minor stages to finish at 02:00

Rainbow Rooms operating with cafe style music until 03:00

Appendix 5 - Licensing Conditions (Noise)

1. TBA - conditions will be appended when available.

Appendix 6 - Glossary of Terms

Ambient Noise	The total encompassing sound in a given situation at a given time, usually composed of sound from many sources far and near
A-weighted sound pressure, p_A	Value of overall sound pressure, measured in pascals (Pa), after the electrical signal derived from a microphone has been passed through an A-
A-weighted sound pressure level, L_{pA}	Quantity of A-weighted sound pressure, given by the following formula in
Background Noise Level, $L_{A90,T}$	The A weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of a given time interval, T, measured using time weighting, F, and quoted to the nearest whole number of decibels
Daytime Decibel (dB)	The period 09:00-23:00 hours
Decibel (dB)	A unit of level derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure levels the reference quantity is 20 uPa. 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)
Free-field level	Sound pressure level measured outside, far away from reflecting surfaces. Measurements are made 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as being free-field measurements. To minimize the effect of reflections the measuring position should be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source). Estimates of noise from aircraft overhead usually include a correction of 2 dB to allow for reflections from the ground.
Façade level	Sound pressure level measured 1 m in front of the façade of a property.
$L_{A10,T}$	The A weighted noise level exceeded for 10% of the measurement period, T.
$L_{A90,T}$	The A weighted noise level exceeded for 90% of the measurement period, T. This is defined in BS 4142 as the background noise level.
L_{AE}	The sound exposure level – the level of a sound with a period of 1 second that has the same sound energy as the event considered.

$L_{Aeq,T}$	The equivalent continuous A-weighted sound pressure level is the value of the A-weighted sound pressure level in decibels (dB) of a continuous, steady sound, that within a specified time interval, T, has the same mean squared sound pressure as the sound under consideration that varies with time.
LAmax	The highest A weighted noise level recorded during a noise event. The time weighting (slow or fast) should be stated.
Night time	The period 23:00-09:00 hours.
Octave band	Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.
Third octave band	Band of frequencies in which the upper limit of the band is 2 times the frequency of the lower limit.
Residual noise	The ambient noise remaining at a given position in a given situation when the specific noise source is suppressed to a degree such that it does not contribute to the ambient noise.
Sound Power Level, L_W	An absolute parameter widely used for rating and comparing sound sources. Sound power is a physical property of the source alone, independent of any external or environmental factors.
Sound Pressure, p	Root-mean-square value of the variation in air pressure measured in pascals (Pa), above and below atmospheric pressure, caused by the sound.
Sound Pressure Level, L_p	Quantity of sound pressure, in decibels (dB).
Specific Noise Level, $L_{Aeq,Tr}$	The equivalent continuous A-weighted sound pressure level at the assessment position produced by the specific noise source over a given reference time interval.
Specific Noise Source	The noise source under investigation.