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SOUND MANAGEMENT PLAN

BEST PARTIES EVER 2022

Reading, RG1 8FJ

Th 1 – Sa 17 Dec 2022

Draft 01: Subject to client review & approval
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Institute of Acoustics
Associate Member



Audio Engineering Society



Contents

1	Summary	4
2	Background	5
	2.1 Event	5
	2.2 Stakeholders	5
	2.3 References	5
3	Location	6
	3.1 Environs	6
	3.2 Receptors	6
4	Sources	7
	4.1 Assessment	7
	4.2 Prediction	7
5	Monitoring	8
	5.1 Reporting	8
6	Community	9
	6.1 Engagement	9
	6.2 Helpline	9
7	Controls	10
	7.1 Organisation	10
	7.2 Strategy	10
	7.3 Communication	10
	7.4 Sound Systems	11
	7.5 Build & Break	12
	7.6 Plant	12
	7.7 Traffic	12
	7.8 Bars & vendors	13
	7.9 Noise at Work	13
	7.10 Public	13
8	Conclusion	13
9	Appendix	14
	A. Conditions	14
	B. General policy	15
	C. Operational timings	16
	D. Operational limits	17
	E. Measurement procedure	18
	F. RAMS	21
	G. Helpline procedure	24
	H. Terminology	26
	I. Guidelines	26
	J. Traffic noise	28
	K. Sound system specification	29
	L. Predictions	30
	M. Map	32

Document control¹

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Definition

RBC	Reading Borough Council
BPE22	Best Parties Ever 2022. The collective umbrella term for all phases of this project
ESL	Electric Star Live
A / C / Z (e.g., dBA or LCeq)	Adjusted measurement to correlate to human ear response. Z = no correction
BOH	Back of House work areas where public access is prohibited
dB	Decibel. A relative unit of measurement to express a sound level
EMOP / EOP / EMP	Event Management & Operational Plan / Event Operating Plan / Event Management Plan
FOH	Front of House sound mix or control position
HSG195	The Event Safety Guide. HSE publication 195 (aka The Purple Guide)
L90	Background level, noise level exceeded 90% of the measurement period
Leq	Equivalent Level. A logarithmic average of sound level over a given period
MNL	Music Noise Level / Specific level
Pop code	Noise Council Code of Practice on Environmental Noise Control at Concerts
NMP / SMP	Noise Management Plan (aka Sound Management Plan)
NSP	Noise Sensitive Premises
SLM	Sound Level Meter
GDPR	General Data Protection Regulation
LA03	Licensing Act 2003

¹ Disclaimer: Please ensure you are working from the latest copy of this documents & associated plans. The event organisers will make every effort to ensure that all information contained in this document is accurate at the time of publication & aim to update & circulate to relevant recipients as required. Owing to the dynamic nature of live events, certain elements may be subject to change at short notice.

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1 Summary

This Sound Management Plan (SMP) details the sound control arrangements for the temporary venue at Kings Meadow, Reading. This live document is an appendix of the Event Management Plan (EMP), with operational details, times & plans.

The venue plans to operate up to twelve events between Th 1 – Sa 17 Dec 2022 with a capacity of circa 900. The solid sided marquee hosts a series of Christmas parties with an exciting dining, entertainment & dancing experience.

This risk assessment & proactive control is produced by specialists Electric Star Live. The purpose is to outline the procedures for discharging our obligations balanced with the demands of delivering an excellent aural experience for the audience. The plan references relevant guidelines. We shall adopt collaborative working practices with the responsible authorities & key stakeholders to promote effective & transparent sound control throughout the project.

Policy: To operate such that noise does not cause unreasonable disturbance to residents with Best Practicable Means.

- Discharge our obligations, minimising the impact on the local community & prevent public nuisance
- Manage acceptable sound levels for licencing compliance, the enjoyment & safety of the public & participants
- Measure specific sound levels, adopting the achievable, relevant methodology. Evaluate & review on time
- Publish community helpline information in advance & respond to concerns with prompt, effective action
- Promote good public relations with the local community

Environs: Kings Meadow is public realm parkland located between the River Thames & national rail line, 250m from the Winter Wonderland site in Hills Meadow. The site is in the Reading Borough Council catchment area. Please see pages 6 & 32. Sensitive receptors are listed in section 3.2 on page 5, and include Kingfisher PI & Thames Qtr, approximately 80-90m west of the venue. In mitigation, sound sources face away from these dwellings, acoustic panels are installed on the marquee west wall & levels will be checked at key times throughout each evening.

Activities: The themed venue features a magical mix of award-winning dining, fantastic wines & beverages alongside attractions, dancing, games, & spectacular performance. A list of sound sources is outlined on page 7 & detailed in the EMP. Timings are detailed in the EMP. For context, live entertainment operates until around 22:45 with a hard curfew of 23:00 without exception. After 23:00 the party continues with dancing & DJ'. Guests typically depart in small groups between 23:00 till close minimising the egress disturbance to acceptable levels. Doors open with sufficient time to facilitate a gradual build-up. The venue primarily targets adults from a broad socio-economic demographic. Anti-social behaviour is not typical nor tolerated. Daytime activity & site operations are of low observable adverse impact.

Sound sources: Primary contribution from the regulated entertainment is the main temporary structure as shown on the site plan in the EMP. Secondary contributions include food & beverage activities, funfair, plant, waste operations, construction & loading. The arrangement & operation of each source shall be managed to minimise disturbance.

Sound control: Environmental Music Noise Levels shall uphold the licensing objectives & compatible with relevant guidance. Build & break noise control shall observe best practice as outlined in BS5228. The aural effect of music from the site is likely to be audible in the immediate area before 23:00, albeit not at a level to cause an unreasonable disturbance. Between 09:00 & 23:00, the combined specific noise level from regulated entertainment shall not exceed 15dB above background (LA90)², & barely audible³ after 23:00 outside any residential noise-sensitive location. Sound checks are scheduled no earlier than 10:00 on any day, intermittent, & of limited duration to minimise disturbance. After 23:00 & 09:00, the combined specific noise level from plant & general operations shall have no observable adverse impact at any residential receptor⁴. Reference locations are listed in section 5 on page 8. Other locations are dynamically assessed in-situ, focusing attention on areas most at risk. The on-site entertainment levels shall be set during commissioning & monitored while in operation. Confirmatory offsite measurements will be taken by a qualified acoustic consultant during the commissioning period, & at key times by competent person during the tenancy. Appropriate action shall be undertaken to comply with the noise criteria & moderate likelihood of disturbance. A log of measurements, observations, contact & actions shall be logged.

Community Engagement: All practicable steps will be taken to maintain good public relations. Information shall be published locally in advance, including helpline contacts operating for the duration. A reported noise concern will trigger a prompt response to assess & reduce levels as required with follow-up monitoring & communication where appropriate. The aim will be to avoid complaints by engaging with the community & monitoring regulated entertainment sound levels in the first instance. Still, the event team shall handle the matter if a complaint arises.

Conclusion: The licensing objective to prevent public nuisance can be maintained & adverse noise impact mitigated subject to implementing this robust plan & dynamically assessed on-site controls. Relevant guidelines, legislation & best practical means shall be adopted as appropriate. We conclude that the level of disturbance can be minimised to an acceptable level on the basis that these noise control measures are successfully implemented.

² A baseline survey will be conducted the day before the first event over the last four hours of the normal operating times

³ Quantified as 5dB below the residual level LAeq for intermittent sound

⁴ Quantified as 10dB LAeq 5' below the LA90 1hr 22:00 - 23:00

2 Background

2.1 Event

Title	Best Parties Ever
Location	Kings Meadow. Reading, RG1 8DF
Event dates	Th 1 – Sa 17 Dec 2022. See production schedule for confirmed dates.
Build & break	Approximately lasting 10 days before & after the event
Attendance	Please refer to the EMP for working capacity, subject to approval
Demographic	Gender diverse, mixed demographic adults
Format	Regulated entertainment, F&B & concessions
Primary sound sources	Stage in the round, with live performance, recorded music & dancing
Secondary sound sources	Attractions, F&B, plant, build & break

2.1.1 Timings

Regulated Entertainment	Please refer to EMP
Doors open to public	Please refer to EMP
Build / Break	07:00-20:00 (NB. NOAEL ⁵ before <u>08:00</u>)
Site operations / security	24/7 (NOAEL 23:00 – 07:00)

2.2 Stakeholders

Licensing Authority	Reading Borough Council
Venue management	Reading Borough Council
Organisers	Eventist Group Ltd

Organisers

The event will be delivered by the Best Parties Ever in partnership with other organisations in the Eventist Group portfolio (www.eventist.group), including but not limited to Tapendae event catering & iE Live event production.

Since its inception in 1999, Best Parties Ever (www.bestpartiesever.com) has become the UK's leading Christmas party provider & in 2018 entertained over 200,000 guests across twenty-two beautifully styled venues. The stunning parties offer packages for mixed groups and exclusive use bookings and include every possible element imaginable for a truly spectacular Christmas party.

IE Live (ielive.co.uk) is a talented full service live event production company. Specialising in the supply of power, lighting and sound as well as staging, event logistics & first-class technical support team.

Venue

The site has a positive track record of hosting Best Parties Ever (BPE) & similar events. Observed levels measured were acceptable for the duration as far as can be reasonably determined & no known complaints received. BPE have assisted this SMP to ensure the venue specific controls are robust as well as building on the experience of previous events.

Sound control contractor

Electric Star Live Ltd (CRN 08881618) is an independent company specialising in live event sound control. Principle consultants within the firm are associate members of the Institute of Acoustics, Audio Engineering Society, The Production Services Association & are personal licence holders. Projects include Michael Bublé, UK tour (AEG), Nocturne, Blenheim Palace (U-Live) & Festival (Live Nation).

2.3 References

The applicable legislation & guidelines include, but are not limited to:

- Licensing Act 2003. Premises License conditions & Licensing authority policy
- Noise Council Code of Practice on environmental noise at concerts (1995) & normative references
- The Event Safety Guide (HSG195) & The Purple Guide (www.thepurpleguide.co.uk)

⁵ No Observable Adverse Effect Level (NOAEL). Inaudible inside dwelling with windows open for ventilation as far as can best practically determined.

3 Location

3.1 Environs

The public realm site is managed by Reading Borough Council, occupying open parkland, between the River Thames & Napier Rd.

The routine soundscape typically comprises road traffic, rail transport & commercial sources.

Noise map estimates published as part of DEFRA’s Environmental Noise Directive (END) predicts residual contribution above 55 dB LAeq 16hr, see appendix on page 14. The prevailing background (LA90) & residual level (LAeq) shall be assessed prior to the event, & with an anticipated range of 45-50 dB LA90 & 55-60 dB LAeq.

The prevailing direction is typically south-westerly at around 5m/s gusting to 15m/s, albeit highly variable.



Figure 1 - Aerial

3.2 Receptors

Representative Noise Sensitive Receptors (NSR) have been identified from OS Maps as commercial & residential premises that noise emissions could impact.

The Music Noise Level (MNL) in Table 1 (LAd/LAn) is the predicted specific level⁶ from the Primary Sound Sources listed in section 4.1. Initial monitoring during sound checks & opening events will help determine the assessed impact. The predicted levels are a good indication of compliance & disturbance is unlikely.

The environmental noise monitoring procedure is outlined in Section 5 & Appendix E.

Ref.	Name	Dir	Dist m	Use	LAd	LAn	Notes
R1	Lock Keepers	N	90	Mixed	55	44	Nearest residents
R2	Mill Green	NE	500	Residential	40	30	Retail park & road traffic significant. Rail traffic contribution
R3	Luscinia View	E	300	Residential	46	35	Most impacted. Significant road, rail & commercial contribution
R4	Oscar Wilde Rd	SE	550	Mixed	41	30	Road & rail traffic dominant. Retail & commercial contribution
R5	Napier Rd	S	80	Commercial	55	45	Proxy location. Commercial receptor. Excluded from MNL limit
R6	Thames Qtr	SW	190	Residential	49	40	Most impacted. Significant road, rail & commercial contribution
R7	Kingfisher Pl	W	160	Residential	51	41	Most impacted. Significant contribution by Winter Wonderland
R8	Thames Lido	NW	60	Commercial	60	50	Proxy location. Commercial receptor. Excluded from MNL limit

Table 1 – Receptors

⁶ 1m from the façade at 1.5m above ground level using accepted ISO 9613 or NORD2000 methodology.

4 Sources

Sound Sources is the collective term for regulated entertainment, construction & associated sound emission sources.

4.1 Assessment

Primary Sources

Primary Sound Sources (PSS) concern the larger amplified sound systems & regulated entertainment forming the significant contribution to sound impact at the sensitive receptor. PSS are likely to be audible in the immediate area but not disruptive. Please see Prediction & Map on pages 30 & 32. The creative content is diverse with mainstream public appeal & less likely to cause bass-beat & low-frequency annoyance. On-site PSS monitoring shall support sound control at the source, as outlined in section 5. The PA specification is detailed on page 29.

Ref. Name	Aim	System	MNL	Close times*	Notes
S1 Main space	360	Point source	94	Live <23:00. DJ <01:00	Enclosed structure with acoustic panels

Table 2- Primary Sources

Secondary Sources

Secondary Sound Sources (SSS) is auxiliary entertainment & on-site operations such as waste, plant, or construction. Considerate initial planning helps to control at source as outlined in Section 7. SSS are unlikely to significantly increase residual levels or cause disturbance in the immediate area. Any contribution shall be of no observable adverse effect level (NOAEL) between 23:00 and 08:00. See section 7 for control strategy.

Ref.	Location	Activity	Times	Notes
-	Production Gate	Traffic	Continuous	Peak traffic during load-in & load-out
-	Exits	Traffic & public access/egress	Event hours	Peak early evening & steady dispersal after 23:00
-	Static plant	Generators & towerlights	Continuous	Silenced equipment. Inaudible off-site
-	Moving plant	Telehandlers & forklifts	Social hours	Peak during build & break
-	Waste	Collection & compacting	Social hours	

Table 3 - Secondary sources

4.2 Prediction

Sound predictions are a good indicator of expected levels at an NSR but are not conclusive. Predictions using SoundPlan Noise⁷ & accepted methodology are shown on page 30. The ISO 9613-1 calculation is considered worst-case. The Music Noise Levels (MNL) shown in the prediction is the specific sound from regulated entertainment without residual contribution. With the stage operating, the prediction indicates the most impacted locations:

- R1 Lock Keepers ≈ 55 dB LA_d / 44 LA_n
- R6 Thames Qtr ≈ 49 dB LA_d / 40 LA_n
- R7 Kingfisher PI ≈ 51 dB LA_d / 41 LA_n

See map on page 32 for locations. The predictions indicate robust compliance & minimal likelihood of disturbance.

There is good supporting evidence that an upper offsite limit of 65dBA before 23:00 does not generate excessive disturbance providing robust controls are in place⁸. After 23:00 The venue shall be barely audible of no observed impact including plant equipment & general operations at any residential receptor. Beyond 500m from the venue the music is expected to be always indiscernible from the ambient soundscape.

Bass octave levels close to the venue are adequately managed by the A-weight limit⁹. Nonetheless, for robust control of low-frequency noise, the LCeq MNL shall be monitored in parallel with LAeq.

The MNL is likely to be an upper level given the dynamic content & reduced levels during changeovers, i.e., the stage does operating times are limited & the sound level at source reflects audience sizes & content. The source level at Front of House (FOH) has been used as a nominal reference & is considered an upper limit for events of this genre. The sound sources used in the prediction model are based on representative specifications.

Uncertainty has not been calculated; however, a ±5dB uncertainty margin is representative of similar projects¹⁰.

⁷ SoundPlan Noise is a global market leading acoustic modelling software application

⁸ See list of venues & respective limits in the appendix section on the Pop Code.

⁹ J. Griffith et al *A Study of Low Frequency Sound from Pop Concerts* 1993

¹⁰ Owing to source configuration, meteorology, ground effect & boundaries. See ISO9613-1 for influencing factors.

5 Monitoring

Monitoring shall be undertaken for compliance with expected standards & minimise the likelihood of complaint.

Sound levels will be monitored for the duration both on & offsite, using calibrated attended & unattended equipment. See Instrumentation below.

A combination of on-site level monitoring, propagation tests & rotational confirmatory offsite measurements will help maintain acceptable sound levels for the event's duration while open to the public.

Offsite measurements will initially focus on the nearest & most adversely affected premises; however, the monitoring locations may be revised during the advance planning & dynamically reassessed during the event as required. Dwellings immediately adjacent to the site are most likely to be at risk from disturbance. Upper floors will be awarded special consideration where street measurements may not be representative. See procedure in Appendix G.

Where required, the mix position of PSS will be issued with an SLM for easy reference by the sound engineer to help maintain level continuity. Once the FoH level is determined, the noise levels will be monitored & appropriate action is taken when considered necessary, e.g., a loud act, a change in wind direction or receiving a complaint.

Direct contact with Stage Managers & Sound Engineers shall be maintained to make any required adjustments.

Ad-hoc sound measurements may be conducted at residents' properties on request where safe to do so & observing safe Covid-19 protocols.

The sound report log shall record LAeq, LCEq, location, date, time, duration, levels, operator, sound meter & observations at locations shown on the map on page 32.

Instrumentation

The following SLM deployment scheme is proposed & subject to dynamic assessment on-site:

Class 1: Acoustic Consultant

Class 2: Venue noise representative & DJ mix position (aka FOH)

Table 4- SLM deployment

Procedure

The measurement procedure is documented on page 18. Attended measurements will record Leq, location, date, time, duration, levels, operator, sound meter & notable observations. Measurements at residents' premises shall be carried out on request wherever practicable, observing safe working protocols.

The mix position of the main systems listed in shall be issued with a Sound Level Meter for easy reference by the DJ & sound engineer to help maintain level continuity.

Propagation

While the venue operates with representative content & level, the measured sound at the validation monitoring location shall be calculated back to the façade of the offsite receptors. If the calculated façade level exceeds the agreed offsite limit level, the sound at source shall be reduced until the calculated level is within the offsite limit with a reasonable margin for error, nominally circa 3dBA. The level at source will be set as an upper operational limit. Further confirmatory assessment shall be carried out at the primary offsite receptor locations to assess likelihood of disturbance.

This validation procedure will be carried out during commissioning, within 48-hours of being open to the public & 28-days later to safeguard against deviation. The procedure may also be carried out in the event of complaint.

5.1 Reporting

A log containing measurements, actions, complaints & conclusions will be available within 28 days of the request.

Monitoring

- Overseen by competent person
- Robust procedure in place
- Calibrated instrumentation
- Continuous cover during live event
- On & off-site measurements logged
- Rotational attended assessment
- Attend premises as required
- Inform if levels are excessive

6 Community

Good relations shall be facilitated through positive community engagement. The ambition is for the community to be positively engaged with the proposals. This event will be a welcome return following a challenging year & arguably a positive boost to the area. The organisers have an excellent reputation for delivering high-quality events in challenging locations. Following the devastating Covid-19 Pandemic, this event aims to aid cultural, social & economic recovery.

6.1 Engagement

The event management team has extensive experience operating similar events in noise sensitive locations. This understanding of how to minimise disturbance, ameliorate & engage in effective communication supports confidence of the robust controls in place. We shall undertake steps to inform & engage the community in advance via traditional & social media communication. Details shall include an overview, timings & contacts.

Key points

Layout	The stage is positioned to minimise noise at the nearest dwellings.
Timings	The emissions reduce at 23:00. Sound checks will be limited to the shortest possible duration in social hours. Construction & traffic noise is adequately managed by adopting relevant best practice.
Sound system	The design promotes control with highly directional speakers The sound level & bass will be carefully controlled to ensure they are not excessive.
Limits	We aim to operate within the permissible sound levels. The licence conditions & associated guidelines are not a target, but the upper action limit. Staff will be alerted to a lower threshold so action can be taken in advance of approaching the maximum permissible level.
Monitoring	Sound meters shall record the combined sound emissions from the site. Event management & sound engineers shall be alerted to excessive levels & will follow specific instruction for immediate & appropriate action
Review	The community helpline will be in operation for the duration to engage with residents, addressing any specific concerns in a timely & effective fashion

6.2 Helpline

A dedicated helpline shall be made available for the duration of the event. In the event of a complaint, the organisers shall take proactive steps to engage with the resident, minimise disruption & implement measures to minimise the likelihood of repetition. See procedure in Appendix G.

Complaint location shall be monitored to enable early identification of any geographical patterns. Visit where helpful, observing safety protocols to help resolve concerns.

The helpline shall be in operation during live event days.

To facilitate effective response, the venue management shall communicate with the noise monitoring staff by 2-way radio as the primary mechanism. Alternatively mobile phone or instant messaging may be used where practical.



7 Controls

7.1 Organisation

The organisers acknowledge the importance of robust noise control.

Please refer to the EMP for details of the specific roles, procedures, command & control structure.

The organisation framework & communication shall be compatible with the Pop Code and normative references.

An essential selection criterion for the production team is to successfully ensure that each individual holds the experience, respect & authority to command a proficient & responsive sound department.

Drawing on the experience of similar events, there is a clear line of communication between the Production Manager & those in control of the sound, such as engineers & stage management, the silver level team, and the event director.

Collaboration

The sound management contractor aims to meet with the responsible authorities, key stakeholders, production & technical contractors prior to doors on the first concert day. Timing to be confirmed in the production schedule.

Updated situation reports may be disseminated and reviewed by scheduled meetings, instant messages, and email.

7.2 Strategy

This plan adopts SMARTER methodology to deliver effective results:

Specific, Measurable, Achievable, Relevant, Timely, Evaluated, Reviewed

Activities that may potentially cause noise disturbance to neighbours shall be identified. Effective procedures shall be developed to control these potential hazards. The implementation shall be reviewed to circumvent common pitfalls & minimise the likelihood of complaint.

For example, the artists management shall be informed of sound limits in advance as outlined in section 7.4.1.

Factors such as community engagement, programming, locations, timings & systems shall be carefully considered.

The statutory criterion for noise prelude to health or nuisance (e.g., EPA 1990, section 79) have been considered:

Frequency	Control cumulative impact by ensuring the weekly or monthly exposure is minimised, i.e., the repetition of events
Duration	Control cumulative impact by ensuring the daily exposure is minimised, i.e., the duration of each event
Timing	Control likelihood of disturbance by consideration of day of the week & time of day, e.g., social hours, late-night
Intensity	Control sound to acceptable levels for the given frequency, duration & timing, i.e., the intrusiveness potential

7.3 Communication

To promote collaborative working, a sound management representative shall convene with the responsible authorities, key stakeholders, production, and technical contractors as best practical. This may include, but not limited to, meetings or other forms of communication. For example, a meeting in advance of doors on the first concert day may be helpful. Updated situation reports may be disseminated and reviewed by scheduled meetings, instant messages, and email.

External communication with responsible authorities and the public shall use telephone, email & in person contact.

While the event is live, Instant messaging is the primary channel for real-time internal communication between sound management, control, production & technical contractors., e.g., 2-way radio, WhatsApp, Telegram, Teams or SMS. Where practical mobile phone may be used as an alternative.

7.4 Sound Systems

The consultant shall liaise with the sound contractor & technical production in advance regarding system design, noise limits & propagation.

7.4.1 Planning

In general terms, the site layout draws on the experience of similar events & prediction calculations. Please refer to the site plan in the Event Management Plan for the precise position & orientation.

The sound systems shall point away from the nearest sensitive receptors where practicable. The potential for the off-axis bass-spill has been considered during the planning.

The layout, programming & schedule further minimise sound clashes.

Unexpected adverse effects of acoustic reflection, diffraction, resonance & reverberation are problematic to predict in a large area with a complex mix of temporary sources, temporary structures & variable metrological conditions. However, the noise monitoring procedure should identify such issues & mitigating action shall be taken where practicable.

Before arrival, all PA suppliers, managers, artists/sound engineers will be informed of strict noise control requirements.

Systems will be under the supervision of a competent sound person at all times. System controllers may be fitted with limiters that may further help control levels.

Site levels will always reflect the audience size & dynamics. Audience capacities tend to be lower earlier in the day & transient throughout.

The organisers will endeavour to prohibit portable music equipment that is not part of the licensed entertainment or for the sole purpose of background music at an authorised trader's concession area.

There will no amplified sound outside the licensed hours of operation.

7.4.2 Bass

Special consideration will be awarded to the bass frequencies. Low Frequencies (LF) contain the greatest acoustic energy & subject to less geometric & barrier sound attenuation than higher octaves. Specific frequencies may require 'notching' for adequate noise control. Directional sub-array may be deployed to attenuate off-axis radiation by up to -18dB¹¹. Pop code advice¹² shall be observed.

7.4.3 Technical Rider

Any third-party technical equipment shall be assessed by the Production or Technical Manager for any possible adverse effect it may have on overall sound levels. Any such equipment such as backline amplifiers or additional PA speakers would be regarded in the context of this document & members of the technical team would:

- Prevent the use of any equipment that appears inappropriately loud, or significantly out of line with this plan
- Avoid any external sound engineer operating outside the agreed noise level limits at the Front of House

Systems

- Good layout & specification
- Advance information before arrival
- Under the control of an engineer
- Maintain appropriate levels
- Local monitoring
- Strict time keeping

¹¹ SSE / Vanguardia Hatfield test of L'Acoustics K1 and Martin MLA line array

¹² Ref 8. Griffiths, J et al *A study of Low-Frequency Sound from Pop Concerts*, (1993)

7.5 Build & Break

During the Build & Break, some construction noise is to be expected. This noise source shall be minimised and confined to the General hours between 07:00 – 20:00 whenever reasonably practicable. Noisy activities of observable significance shall not be undertaken before 08:00 or after 18:00. Any activity that is likely to be intrusive & discernible offsite will be scheduled during social hours.

Best practicable means will be employed to keep the build & strike noise as low as reasonably possible. Measures to be considered will be consistent with the recommendations of BS5228 & all activities will be carried out with due care to minimise potential disturbance, e.g.:

- Overnight break activities must be inaudible inside any residential Noise Sensitive Receptors with windows open for ventilation as can be practically determined
- Careful selection of plant and construction methods
- Use of site enclosures, where practicable & necessary, to provide acoustic screening at the earliest opportunity
- Choice of transport routes & scheduling shall minimise public disruption

Immediately after the live event, some equipment will be cleaned & secured for the night. Planned activities will avoid noise impact where possible, which is supervised by the venue or site manager. The activities undertaken include repacking equipment into transit cases. Significant effects such as noisy metal on metal operations restricted to general hours between 08:00 – 18:00. Noisy activities such as loading vehicles commences the following morning.

Practical steps to reduce the construction & dismantling noise disturbance will include the following where practicable:

- Louder activities such as metal on metal operations shall be restricted to the hours between 08:00 – 18:00
- Minimise impact noise: metal on metal operations. Refrain from dropping heavy or metal items e.g., tubes & decks
- Temporary use of damping/packing materials when lowering equipment or loading vehicles
- Avoid unnecessary noise: Keep conversations to a minimum. Use 2-way radio & refrain from shouting
- Where practical, reduce idling & switch off ignition. Specify vehicles with pink noise reversing alarm where possible.
- Efficient handling: Optimise the handling operation & time taken to complete the task safely. Use bulk transit cases to minimise handling operations. Locate vehicles as near as possible

7.6 Plant

Plant equipment can be either static or moving noise sources that require attention. Plant will often operate continuously throughout the site & therefore may cause disturbance to nearby NSR. The site management team shall consider the type, location & operating hours of any plant.

Network power or hybrid supplies shall be deployed where practical.

Plant shall be switched off overnight where practicable. Any essential plant equipment operating during unsocial hours such as chillers shall be inaudible within dwellings with windows open for ventilation. Plant fitted with properly lined & sealed acoustic covers shall be closed whenever in use.

7.7 Traffic

All on-site vehicular traffic, including exits onto the public highways, shall be controlled per the EMP &/or Traffic Management Plan (TMP). This plan regulates vehicle movements and minimises disruption. Traffic inherently reduces overnight & likely to be of No Observable Adverse Impact Level (NOAEL). Routes are planned to minimise community impact, unnecessary reversing, hill starts & prolonged periods of vehicle idling. Traffic staff working in residential areas between the hours of 23:00 & 07:00 will be issued with 2-way radio earpieces to minimise radio conversation disturbance.

7.7.1 Unloading & loading

Loading & unloading operations may have a low adverse effect. Between the hours of 20:00 & 08:00 loading operations shall have no observable adverse effect. The site layout considers proximity to residential dwellings where practicable to optimise geospatial & barrier attenuation. Routine activities such as toilet cleaning, consumable restocking & portable items of equipment such as backline & instruments are unlikely to cause a disturbance. Bulky items such as production deliveries will be carried out as per the production schedule & have been planned to avoid the likelihood of disturbance.

Construction

- Overseen by management
- Observe BS5228 recommendations
- General hours 07:00 – 20:00
- No noisy work before 08:00
- Overnight work inaudible inside

Plant

- Overseen by management
- Consider proximity to NSR
- Observe BS5228 recommendations
- Use maintained / silenced equipment
- Minimise operating times

7.8 Bars & vendors

Management shall subjectively assess noise emission within the acceptable framework for impact, timing & controls. Operational noise such as deliveries & waste handling/collection shall adhere to the EMP & associated documents. Plant such as chillers shall be suitably located & maintained to minimise noise disturbance overnight. All amplified music shall operate under the same controls, e.g., background music, kitchen radio/bluetooth speakers

7.9 Noise at Work

The Control of Noise at Work Regulations 2005 (the Noise Regulations) intends to prevent or reduce risks to health and safety from exposure to noise at work, so far as is reasonably practicable. The high noise levels over long periods are essential elements of a live entertainment event.

Multiple contractors, self-employed visiting performers & sound engineers is a complex environment. An overall employer is problematic to determine in this context. Everyone in the production chain has a role in managing the risks.

In general, everyone employed at a live event is exposed to the upper noise exposure level levels. All event staff need to be aware of this and take personal responsibility to think about their noise exposure & take reasonable care not to damage their own hearing or other people.

Everyone working in this industry should be responsible for understanding the personal risks/control of Noise-Induced Hearing Loss (NIHL). As 'tools-of-the-trade', individuals should ensure they have access to hearing protection of at around 10-15dB (SNR15/SNR20) for general ad-hoc use & 20-30+ (SNR25/SNR35) for high exposure areas.

Occupational

- People who control sound should recognise their role in a safe workplace
- All on-site contractors should acquire & use appropriate hearing protection
- Avoid prolonged periods in loud areas
- Staff should rotate between quieter areas during shifts when practicable
- Find a quiet space to take breaks

7.10 Public

There is no precedent and no locus of law for controlling human activity or crowd noise. However, the gradual build-up, peak & slow-down nature will help to identify environmental noise hotspots & the practicability of managing crowd to minimise disturbance.

All reasonable steps will ensure that customers leave and disperse from the event without causing public nuisance or disorder; staff & notices at exits will remind customers to leave quietly to not disturb residents. The management team will implement a customer behaviour policy. Anti-social behaviour is unlikely given the public demographic; however, rowdy, anti-social or disorderly conduct shall not be tolerated & proportionate action will be taken by security staff.

Unlike workers, there is no specific legislation setting noise levels for the audience exposure to noise. However, the guidance strongly recommends that the sound pressure level should not exceed 140 dB LC peak & 107 dB LAeq throughout the event (LAeq Event).

Compliance with the LAeq Event guideline is likely given an operational limit on each FoH, dynamic nature of the programming, quieter periods during changeovers & relatively short concert duration compared to an all-day event.

In general, compliance with LC Peak is likely given the physical separation between loudspeaker & audience.

Where practicable, the audience will not be permitted within 3m of a loudspeaker & no less than 1m under any circumstance. Warnings are typically published in the Terms & Conditions.

8 Conclusion

This document has shown that the event organiser will implement robust management controls to ensure that good practice is maintained throughout the event, thus minimising the likelihood of disturbance to the local community. It is concluded that the level of disturbance can be minimised to an acceptable level on the basis that noise control measures are fully implemented. These measures include:

- Uphold the planning & licensing objectives
- Safe & managed operating levels for public, staff & performers as best practicable
- The provision of a helpline & information to the local community & the close working relationship with the community
- Careful site layout keeping the highest noise sources furthest away. Appropriate design & orientation of the PA
- Pre-event inspection of the sound systems in use & sound propagation tests to help set initial levels
- Appropriate monitoring & control throughout the event
- P.A. systems under the control of responsible persons throughout

9 Appendix

A. Conditions

2. There shall be a maximum of 12 events per calendar year. Dates & times shall be notified in writing to the licensing authority no later than 28-days before the first event.
3. The event manager shall work closely with Reading Borough Council (RBC) and other responsible authorities to ensure that work required to achieve the licensing objectives is detailed, site specific and rigorously enforced.
4. The event shall be run in accordance with the event management plan (EMP). This EMP shall be submitted to the licensing authority at least 28-days prior to the start of any event;
 - 4.1 - The EMP shall reference a coordinated Sound Management Plan (SMP),
 - 4.2 - The SMP shall be subject to review & approval by the licensing authority.
- 5- The specific Music Noise impact from any amplified regulated entertainment shall be controlled,
 - 5.1- Between 09:00-23:00, when assessed at 1m from the façade of any domestic Noise-Sensitive Premises (NSP), the Music Noise Level (MNL LAeq) shall not exceed the Background Level (LA90) by more than 15dB over any 15' period,
 - 5.2- Outside these hours, MNL shall be Barely Audible outdoors on the boundary of the NSP, quantified as 5dB below the Residual Level LAeq over any 15' period,
 - 5.3- The prevailing sound level shall be defined as Background level (LA90 1hr) & Residual level (LAeq 1hr), measured without Music Noise present over the last four hours of the scheduled event, or entire period if less than four hours.
 - 5.4- Amplified regulated entertainment outside the main venue shall cease no later than 23:00 including but not limited to concessions, activations, funfair, or similar activities.
6. The noise monitoring manager (NMM) shall undertake noise monitoring whilst members of the public are on the licensed premises. This monitoring shall be conducted at the boundary of the closest domestic premises to include Kingfisher Place, The Lock House and Luscinia View: a. Every hour during the first three functions held each year at the premises and b. Regular monitoring at 19:00, 21:00, 23:00 and 00:30 during every successive function.
7. Monitoring on the first three nights shall be conducted by a qualified acoustic consultant and NMM. The NMM must be competent in carrying out the noise monitoring on subsequent nights if they are to act without the support of a qualified acoustic consultant. Where the NMM has held this role in the previous year the qualified acoustic consultant shall conduct monitoring with the NMM for the first two events instead of the first three.
8. A record detailing the location and time of all monitoring shall be entered into a logbook. A copy of the logbook shall be submitted to the Environmental Protection and Nuisance (EP&N) team each Monday during the event period.
9. The NMM shall be provided with and keep charged and in good working order a mobile phone capable of receiving calls at all times when members of the public are on the premises, so that they are able to respond instantly to any complaints or queries relating to noise breakout from the venue.
10. A written record of any complaints received arising from activities at the premises shall be kept in a logbook. The logbook shall be kept available at all times for the inspection by authorised officers. The logs shall be submitted to the EP&N team each Monday during the event period. A record shall include: a) Name and address of the complainant b. Complaint details and time and date of complaint c) Details of persons who undertook investigation and the nature of the investigation d). Any action taken as a result of the complaint; and e). Details of feedback to the complainant
11. Noise from the generators shall be inaudible at the boundary of the nearest and all other residential premises. Inaudible for these purposes is defined as 10 dB (5-minute LAeq) below the background noise level (LA90 measured over a 15 minute period between 22:00 and 23:00 hours when the premises are not operating).
12. No handling of goods or materials, which is audible from beyond the site boundary, shall be carried out at the premises between the hours of 20:00 and 08:00. This shall particularly include operations such as putting materials or bottles into waste/recycling.
- 13- The premises licence holder shall install a suitable sound system with adequate controls.
 - 13.1 The configuration, location & orientation of the system shall be documented in the SMP before commencement of licensable activities.
 - 13.2 Sound system processing shall automatically regulate the intensity & tonal characteristics of the sound system emissions. Access to these system controls shall be restricted to the Local Authority, system engineer, venue manger & acoustic consultant.
 - 13.3 Dynamic controls shall regulate levels on all microphones to mitigate specific disturbance.
 - 13.4 After 23:00 announcements, other than for safety purposes, shall not be the dominant noise source at any Noise Sensitive Premises. Dominant is quantified as a specific level 5dB LAeq 5' above the prevailing Music Noise Level LAeq 15'
14. No later than seven days before the first event held each year a letter detailing the following: a) The dates and times of the proposed events b). The mobile telephone number that will be used during the event and an email address so that residents can contact the noise monitoring manager nominated in writing by the premises licence holder c. Details of the licensing conditions relating to noise control, d). The email address of the EP&N team shall be delivered to all domestic properties in the following roads: Luscinia View, Kingfisher Place, Kings Meadow Road, Thames side and Heron Island. A copy of the letter shall also be delivered to the EP&N team at RBC no later than seven days before the first event held each year.

B. General policy

- Be a good neighbour
- Stick to license hours. No music outside these times. No exceptions
- Immediately & gradually lower music volume &/or specific frequencies if asked by management
- Construction or similar between 07:00 – 20:00 Mon - Sat & 09:00-18:00 Sun
- No noisy build/break work before 08:00 or after 18:00
- Plan routine operations around social hours
- Do not empty waste outside after 22:00 where possible else bag & gently lower waste into bins
- Deliveries, collections & waste handling must not be audible off-site between 20:00 – 08:00
- Be attentive to noise build up. E.g., music volumes creeping up in volume to excessive levels
- Tell your supervisor if you think an activity is the source of problem noise
- Keep doors & windows closed wherever possible
- Ask patrons to leave quietly at the end of the night
- If working long hours, give your hearing a rest during your breaks
- Avoid excessive use of the shout microphone at the end of the night
- Routinely take a stroll around the block checking noise levels. Follow your ears
- Respond promptly & effectively to any concerns or complaints

C. Operational timings

TIME	REGULATED	CONSTRUCTION	ROUTINE SERVICE	INAUDIBLE
00:00				23:00 - 07:00 .NIGHT TIME VENUE MUST BE INAUDIBLE INSIDE NEIGHBOUR'S HOMES
00:30				
01:00				
01:30				
02:00				
02:30				
03:00				
03:30				
04:00				
04:30				
05:00				
05:30				
06:00			06:00 - 00:00 MIDNIGHT	
06:30				
07:00		BETWEEN 07:00 - 08:00 JOBS UNLIKELY TO DISTURB	ACTIVITIES UNLIKELY TO CAUSE DISTURBANCE TO RESIDENTS	
07:30				
08:00		BETWEEN 08:00-18:00 NO NOISY WORKS BEFORE 08:00	LIGHT DELIVERIES, CLEANING & CLEARING WASTE INSIDE & OUTDOOR AREAS. LIGHT MAINTENANCE	
08:30				
09:00	FROM 09:00	POTENTIALLY NOISY ACTIVITIES.		
09:30	SOUND CHECK & REHEARSAL	LARGE, HEAVY OR NOISY DELIVERIES (E.G. DRAY'S)	CONDUCT OUTDOOR ACTIVITIES WITH CARE E.G. GLASS COLLECTION, EMPTYING BINS & W.C. SERVICE	
10:00	10AM DOORS SAT / SUN	BULK WASTE COLLECTION		
10:30		GLASS COLLECTION		
11:00	11AM DOORS MON - FRI	CONSTRUCTION, BUILD & BREAK. METAL ON METAL ACTIVITIES		
11:30				
12:00	LIVE & RECORDED MUSIC, FILMS, PLAYS, DANCE, SIMILAR	SEE PRODUCTION SCHEDULE FOR SITE BUILD & BREAK DATES		
12:30	ENTERTAINMENT, SALE OF	PLEASE REFER TO NMP SECTION ON BUILD & BREAK FOR NOISE MITIGATION GUIDANCE		
13:00	ALCOHOL			
13:30	REFER TO PREMISES LICENSE FOR EXCEPTIONS			
14:00				
14:30	PLEASE REFER TO NMP SECTION ON ENTERTAINMENT NOISE			
15:00				
15:30	PRODUCTION & BACKLINE			
16:00	LOAD-IN FROM 08:00			
16:30	LOAD-OUT BEFORE 0:00			
17:00				
17:30				
18:00		BETWEEN 18:00 - 20:00* GENERAL BUILD & BREAK ACTIVITIES MAY CONTINUE TILL 20:00		
18:30				
19:00				
19:30				
20:00				
20:30				
21:00				
21:30				
22:00			*AFTER 22:00*	
22:30			*DO NOT BOTTLE-OUT*	
23:00				
23:30				

- **Extended hours limited to build/break weekdays*
- *Deliveries, collections & waste handling must not be audible off-site between 20:00 – 08:00*

D. Operational limits

General: The proposed specific noise limits consider four key factors associated with disturbance:

Frequency	The venue operates Thursday, Friday & Saturday, plus Wednesday 7 th December
Duration	Entertainment operates for up to a maximum of 6 hours a day
Timing	Live performance ends before 23:00 & DJ's till 01:00 with appropriate sound levels for the time of night
Intensity	The programming is varied. A wide dynamic range is typical of the diverse music profile where extended periods of high-intensity music is unlikely. The controls shall be in place to minimise environmental noise impact to an acceptable level. Appropriate programming & breaks help to regulate Temporary Threshold Shift.

The intended aural effect shall be the event shall be of little or no impact, perceived as not intrusive.

The proposed noise limit is generally derived from the Noise Council Code of Practice on Outdoor Events (1995), where the upper level permitted at any noise sensitive properties are relative to the typical background level over 15-minutes.

Static plant such refrigeration may operate overnight; however, the intention is for this to be inaudible inside. While there is no universally agreed definition of inaudibility, the night-time residual level is estimated as 50dB LAeq night (Defra END 2017) and a specific level of under 40dB LAeq 5' free-field outside any dwelling is unlikely to have an adverse observable impact.

Before 23:00 the entertainment noise is likely to be louder, of marginal significance & discernible above the residual noise, albeit not at a level that causes an unacceptable disturbance. After 23:00 the level drops such that it is unlikely to be audible inside dwellings. Outside the normal opening hours, the venue & any plant equipment shall be near inaudible of no observed impact.

The noise limits are relative to the prevailing conditions without the venue operating. A background survey shall be conducted on Th 31 Nov 2022. We anticipate:

- Background values of circa 47dB LA90 4hr
- Residual circa 55dB LAeq 4hr

Outdoor limits: Based on estimated values, between 09:00 & 23:00,¹³ the combined specific free-field level from regulated entertainment outside any dwelling when measured &/or calculated shall not exceed:

- Before 23:00, the specific level shall not exceed 62dB LAeq 15' (15dB LAeq 15' above background LA90)
- After 23:00 the specific level shall not exceed 50dB LAeq 15' (5dB below the residual level LAeq)
- Plant noise should be inaudible at any dwelling, circa 37dB LAeq 15' (10dB below the background LA90)
- Deliveries, collections & waste handling must not be audible off-site between 20:00 – 08:00

No amplified sound outside the licence hours – No exception

Indoor limits: There are no limits applicable inside, however the external levels must not exceed the values above.

- Before 23:00 the indoor level may cover the entire venue at around 100dBC / 92dBA
- After 23:00 the indoor level must be restricted to the dance floor. A level drop is likely.

After 23:00:

- The DJ mix should be assigned to the speakers over the dance floor only
- The DJ mic & any other vocals must be heavily compressed to less than 5dB above the music level
- When subjectively assessed at any dwelling, the venue must not be the most dominant contribution

Routine: The noise monitoring manager (NMM) shall undertake noise monitoring whilst members of the public are on the licensed premises. This should be every hour during the first three function nights, followed checks during every successive function at; 19:00, 21:00, 23:00 & 00:30.

Monitoring shall be conducted at the boundary of the closest domestic premises to include:

- Thames Quarter
- Kingfisher Place
- The Lock House
- Luscinia View

¹³ Excluding specifically permitted dates or times through the licensing schedule

E. Measurement procedure

Attended measurements shall be conducted procedurally & compliant with guidance in BS7445-1. Measurements should be representative of normal operations under typical conditions. i.e., unless conducting a baseline survey, measurement is not necessarily representative during changeovers while the stage will be quiet.

The advice given in BS7445 regarding meteorological conditions should be complied with where possible, primarily the weather should be dry & wind speed should be less than 5m/s. Applicable Covid-19 safety protocols shall be maintained throughout working in & around venues or with residents or local authority.

A competent operator should take the measurement using a calibrated BS61672-1 compliant sound level meter fitted with a windshield & mounted on a tripod. The measurement procedure should generally comply with the guidance in BS7445-1. Class 1 meters shall be field calibrated before & after events. All class 1 instruments are subject to an ISO BS61672-3 calibration scheme.

The Sound Level Meter (SLM) should be placed on the tripod at the height of approximately 1.5m &, where practicable, not within 3.5 meters of any sound-reflecting surface other than the ground. Measurements within 3m of any surface other than ground shall be annotated as having a façade contribution. Where possible, maintain a direct line of sight to the noise source.

The operator should log the LAeq & LCeq and any relevant notes about where the measurement was taken, the time, the predominant noise observed & conditions such as traffic & weather. Measurement should be paused in the event of interfering noise sources such as non-event related traffic or plant equipment. The meter should be periodically field calibrated with any deviation noted in the measurement log.

Measurements should be logged & kept on file for review purposes. A reasonable margin of error is expected to allow for meteorological conditions & the accuracy of measurements such as practicable access to locations.

The SLM operator should communicate with the sound engineer or stage manager by messaging app/radio &/or phone, relaying any level adjustments needed. In addition to controlling the overall sound level, frequency adjustments can also be made to reduce the sound at specific frequencies, often characterised as a bass beat. Where noise reductions are required, address predominant noise. A reasonable margin for uncertainty is to be expected, nominally between $\pm 3\text{dBA}$.

Checklist

1. Check all equipment is ready & in working order:
 - SLM & field calibrator charged & calibrated¹⁴
 - Radio &/or mobile phone charged
 - Tripod or pole & windshield
 - PPE & logbook
2. Mount SLM on a tripod at 1.2-1.5m height, or a pole if appropriate, e.g., upper floors
3. Position SLM no less than 3m distance from any sound-reflecting surface, except the ground¹⁵
4. Measure criterion levels over determined periods dB L_{eq,T}, e.g., L_{Aeq15'}, L_{Ceq15'}
5. Log all relevant observations including:
 - Sound Pressure Level using appropriate metrics for the given assessment
 - Predominant & secondary sound contribution
 - Weather conditions¹⁶
 - Boundary / façade contribution
6. Record each measurement for inclusion in a final report
7. Take appropriate action where levels exceed an acceptable range & disturbance is likely

Music Noise Level (MNL) is a CALCULATED value

MNL = MEASURED level at residential receptor - RESIDUAL level

Alternatively, MNL = MEASURED level at venue façade – ATTENUATION over distance to residential receptor

¹⁴ SLM should be BS61672-1 compliant & calibrated with the guidance given in ISO17025. It is recommended that sound calibrators are traceably calibrated at intervals not exceeding 1 year, and SLM at intervals not exceeding 2 years.

¹⁵ Note any façade contribution where a free-field is not practicable

¹⁶ BS7445-1 stipulates dry weather conditions with wind speed below 5 m/s

Acoustic consultant duties

Establish prevailing background (LA90) & residual (LAeq) sound levels

Measure emissions within the venue, directly outside the venue & at the boundary of the nearest dwellings

Set suitable sound levels pre & post 23:00 inside the venue for compliance with the noise impact conditions

Estimate the differential between these three positions & correlate to an acceptable range of measurement values

Instruct the venue noise team on how to use the Sound Level Meter & noise control procedures

Nominated Noise Manager (NNM)

Follow these steps at the following times: 19:00, 21:00, 23:00 and 00:30

1. Measure LAeq 1' < 3m from the venue on the four sides, north, east, south & west
2. Measure LAeq 5' at the boundary of the following receptors
 - R1 The Lock House
 - R3 Luscinia View
 - R6 Thames Quarter
 - R7 Kingfisher Place
3. Pause the measurement if influenced by road traffic noise, trains, or other extraneous noises
4. If the sound level is highly variable during the measurement, repeat or measure over a longer period up to 15'
5. Note the measurement & observations in the log provided
6. If the measurement approaches or exceeds the acceptable range set by the acoustic consultant you must act immediately. This may include, but not limited to:
 - Stopping activity, e.g., bottling out or ask patrons to leave quietly
 - Controlling the dominant source, e.g, reducing the DJ mic
 - Adjusting the tonality to be less intrusive, e.g., reducing the bass
7. Any complaints & actions must be recorded. Please refer to procedure & log sheets

Locations



https://www.google.com/maps/d/edit?mid=1pMxrhDNaTu_nU-bQKgk6xU87NoHwVQw-&usp=sharing

EVENT: BPE
VENUE: READING, RG1 8FJ

SLM:

Location	Date	Time	Δt	LAeq	LCeq	LA90	OP:	Observations
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RESIDUAL MEASUREMENTS

[illegible]

ATTENDED MEASUREMENTS

[illegible]

Notes:

Average	0	0
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Weather:

Drift:

Timings:

F. RAMS

ID. Source	Potential	Mitigation
1. Indoor entertainment: Live & recorded music Plays & films Sporting events Dance & similar Locations: All indoor spaces (Temporary Demountable Structures)	Timings: Routine disturbance, especially late nights.	The hours are also restricted by license conditions. Entertainment noise from the venue must be kept at a level such that residents are unaffected by the routine or timings.
	Volume: The volume causes annoyance &/or the bass beats aggravate.	Any amplified sound, including music & speech, should be inaudible inside neighbour's property with a window open. Routine listening checks at the perimeter of the site will help to assess the likelihood of disturbance. Consider if the weather conditions might cause the sound to travel further or your hearing may be less sensitive having adjusted to the louder environment of the venue (aka threshold shift). The in-house background sound systems should be clearly marked with a "maximum volume" setting – a level found to be acceptable & unlikely to cause complaint. Do not exceed this level without permission from the DPS or venue management. For live music, agree on an adequate level with the musicians prior to the performance. This acceptable level may be determined subjectively or with a sound level meter & listening checks at the perimeter if there is any uncertainty. Nominally internal sound level with background music would be around 75 – 85dB L_{AS} & for live music, recorded music, or film 90-98dB L_{AS}. The duty manager is responsible for the overall volume of the venue. The music systems must be under the control of a competent engineer or nominated person. Bass & bass beats may cause annoyance event at lower levels, so turn the bass down if it is perceivably loud at the perimeter.
	Sources & layout: The type of speakers or their placement may have an adverse impact	The PA systems in use are typically good quality and should operate without distortion to maintain reasonable control. Take any necessary steps to avoid vibration, especially in the bass which may cause problems. The loudspeakers & any instruments should be located to face away from walls, openings & doors to reduce the opportunity for sound leaking out of the structures (aka break-out), leaks indirectly via voids (flanking paths) or causing part of the exterior structure to vibrate or rattle (structural transmission).
	Structure design: Construction & layout:	The sound insulation properties of the venue construction are limited. The structures comprise a mixture of materials, but the walls & roofs unlikely to attenuate sound significantly. i.e., Interior & exterior panels mounted on a frame with decorative cladding or weather protecting outer layers. Windows & doors a single-layered / glazed with basic seals such that sound will breakout. Cabins & storage yards on the apron provide limited break-up barrier. The perimeter tall shield fence will provide some containment. There are no adjoining properties & structural transmission is unlikely.
	Break-out: Openings, Vents, Doors & Windows.	Openings, windows & doors should ideally be closed from dusk where appropriate. To minimise noise leaks, Vents & Air Conditioning (HVAC) are fitted with acoustic baffles as required. Doors, windows & vents should be adequately sealed when closed to provide effective acoustic insulation. Do not place speakers or other sources point at or next to these openings to minimise direct-path-to-air break-out. If the programmed entertainment is unusually loud, check the perimeter for unexpected break-outs.

I.D. Source	Potential	Mitigation
2. Outdoor entertainment: Live & recorded music Plays & films Sporting events Dance & similar Locations: All outdoor spaces	Timings: Routine disturbance, especially late nights.	Outdoor events pose a higher likelihood of causing annoyance. Compared to indoor entertainment, outdoor activities are likely to occur over a shorter duration & with less regularity. The hours are restricted by the license conditions. Noise levels will be kept such that residents are unaffected. If there is any specific or additional concern, such as the programmed entertainment is known to be louder than usual, inform the nearest residents in advance of potential disturbance & ask they get in touch if there are any problems. Consider the time of day, where the background levels may be lower in the night & while the levels from the venue are no louder than usual, they may be perceived as more disturbing. Weather conditions, e.g., cold & clear nights the sound may be directed towards the ground, potentially causing unexpected problems.
	Volume: Volume causes annoyance &/or the bass beats aggravate.	Regular subjective listening checks at the boundary of the nearest noise sensitive properties will help to assess the likelihood of disturbance. Consider weather conditions & threshold shift when assessing potential disturbance. An acceptable level can be checked with a sound level meter at source & listening checks at the nearest receptors if there is any uncertainty. Nominally sound level at the source with background music would be around 70 – 80dB L _{AS} & for live music, recorded music, or film 85-100dB L _{AS} . The volume must be under the control of the duty manager or nominated person. Carefully consider the bass &/or beats turning down the bass as required.
	Sources & layout: Type of speakers or their placement may have an adverse impact.	The PA system should be of good quality, operating without distortion & deliver sound energy where the speakers are pointing (good directivity & off-axis rejection). Loudspeakers & any acoustic instruments should be located to face away from the nearest dwellings where possible.
3. HVAC, catering refrigeration & extraction Locations: All structures	Noise level & tonal rating: Routine annoyance owing to mechanical rattle, hum, or whine.	If you notice the sound level, tone or vibration has changed, report to the duty manager for maintenance to check. The equipment should be located away from residents & will be good quality, quiet operating design with acoustic baffles & insulation. Regular maintenance will ensure quiet operation (specific rated level will be ≤ 10dB below background L _{A90}).
4. Outdoor areas & exits: Locations: Site-wide	Public noise: Customer egress, anti- social or disorderly behaviour & loitering causing annoyance to local residents.	It is unlikely that general public activity will cause an unacceptable disturbance. The gradual build-up, peak & slow-down nature of the venue will help to mitigate noise & identify crowd-related disturbance before a problem arises. Anti-social behaviour will not be tolerated & proportionate action taken by security staff. Traffic noise is unlikely to cause problems for routine operations given gradual build-up & egress. Many visitors will arrive on foot & public transport minimising event vehicle movements. Groups loitering outside may be asked to move on by security staff if creating a disturbance. Kindly ask customers to leave the premises in a quiet & orderly fashion to show respect to local neighbours, especially after dusk. Signage & door staff will reinforce the message.

(..continued) Outdoor areas & exits: Locations: Site-wide	Concessions. Outdoor concessions or temporary “pop-up” activities may increase overall noise or introduce an unexpected problem.	Deliveries & waste collections will be subject to the same procedures as the in-house operators. Any external equipment will be suitably located & maintained to ensure quiet operation. Concessions are not permitted to use their own music system unless as a planned attraction. The DPS or duty manager will keep music within agreed limits & operating hours.
5. Daily operations Locations: Sitewide	Deliveries: Routine disturbance, especially early morning & late at night.	All loading operations & associated traffic must be carried out with due care to minimise disturbance. When taking deliveries, some noise is inevitable, but avoid unnecessary noise such as slamming doors & dropping goods. Use bulk trolleys to reduce the number of trips from vehicle to stores. Vehicle loading & unloading operations should be confined to the Back-of-House areas where practicable to minimise the potential area affected. Low impact routine activities such as toilet cleaning, consumable restocking & portable items of equipment such as backline & instruments are unlikely to cause a disturbance. Drivers should be asked to avoid revving engines & switch off their engines when not manoeuvring, providing this does not require multiple restarts. Refrigeration units should be switched off providing the food safety procedures allow. Avoid slamming doors & tail-lifts. Heavy items such as dray deliveries should generally be carried out between 08:00 – 18:00.
	Waste: Routine disturbance, especially early morning & late at night.	Similar to deliveries above. Restrict heavy activities to 08:00-18:00 and to the service compound where practicable. Use bulk containers for minimising the number of operations. After 22:00 do not empty bottle bins or remove empty kegs outdoors. Unless the waste is causing more severe hazard such as obstructing exits, wait until the following day to take glass & kegs outside. If waste becomes a hazard after dusk, bag all waste & gently lower into bins outdoors. Give special consideration to the residents on Belvedere Rd directly adjacent to the service compound.
6. Communication Locations: Sitewide	Helpline: Residents must be able to contact the venue easily if they are experiencing disturbance.	A helpline will be in operation & the procedure is outlined in the appendix. In summary, remain calm when dealing with a complaint, even if the customer becomes irate or confrontational. Complaints should always be resolved as quickly & effectively as possible. Keep comprehensive records of all contact, from the initial problem to the eventual solution. Prompt, effective action & good record keeping is key to good relations & any dealings with the authorities.
	Music: Bass & beats are likely to generate a complaint.	Drafting a music policy is recommended to help manage artist expectations & provide staff with a framework for determining the type of music that appeals to the customers whilst minimising the likelihood of complaint.
	Monitoring: Noise levels must be routinely checked to ensure license compliance.	Routine monitoring should observe the procedures set out in this document to ensure disturbance is unlikely & the Planning & Licensing objectives are upheld. Any breach or near miss should be reported immediately to identify the source & take mitigating action. Equally, any external contributions should be logged. The surrounding roads form part of the main arterial routes in the area which may mask venue noise at street level & special consideration should be awarded to upper floors with a direct line of site. Equally, the area is lively & residents may mistake noise from other community sources as originating from the site.

G. Helpline procedure

Contacts will be published locally in advance.

The objective is to resolve any issues to the satisfaction of all parties. The time scale from the first contact to resolution depends on the nature of the complaint; however, all steps will be taken in a timely fashion for any given action.

The event management team will deal with any complaints in the first instance. In the event of a complaint, the operator will immediately respond to the complainant to acknowledge contact. This will be followed by further investigation & response by the appointed noise representative¹⁷.

The helpline shall adopt a General Data Protection Regulation (GDPR) complaint procedure. The complaints log will be shared with responsible authorities, including personal contact details subject to GDPR compliance.

Calls will be directed to a helpline operator:

- The following information shall be logged:
 - Name, Address & Telephone / email¹⁸.
 - Date & time received.
 - Date & times the noise is occurring
 - The location of the noise.
 - Type of noise, e.g., music, plant, etc.
 - Other relevant notes
- A recurring complaint shall be linked to the initial incident for context & continuity.
- The operator will attempt to discuss the matter with the complainant to understand the issues better, reassure the complainant that the event will conduct business responsibly, & advise of what steps are being taken.
- The operator will immediately contact the noise representative.
- The noise representative will take steps to identify the source of the noise. Measurements may also be taken to quantify the disturbance.
- The noise representative may conclude that the venue is not responsible for the noise and ask the complainant to refer to the council.
- Once the noise-producing activity has been identified, the noise representative will discuss the issue with the appropriate manager or engineer for that area.
- Where simple measures can be implemented to reduce, or eliminate the disturbance, i.e., turn the bass down, the appropriate person will carry out the changes without delay. The issue or resolution is more complex, the noise representative will refer the matter to the production manager.
- Once controls have been put in place, all relevant managers will be advised of the change.
- The noise representative will contact the complainant to advise that action has been taken.

The noise representative will monitor for recurrence to ensure that the control has been effective.

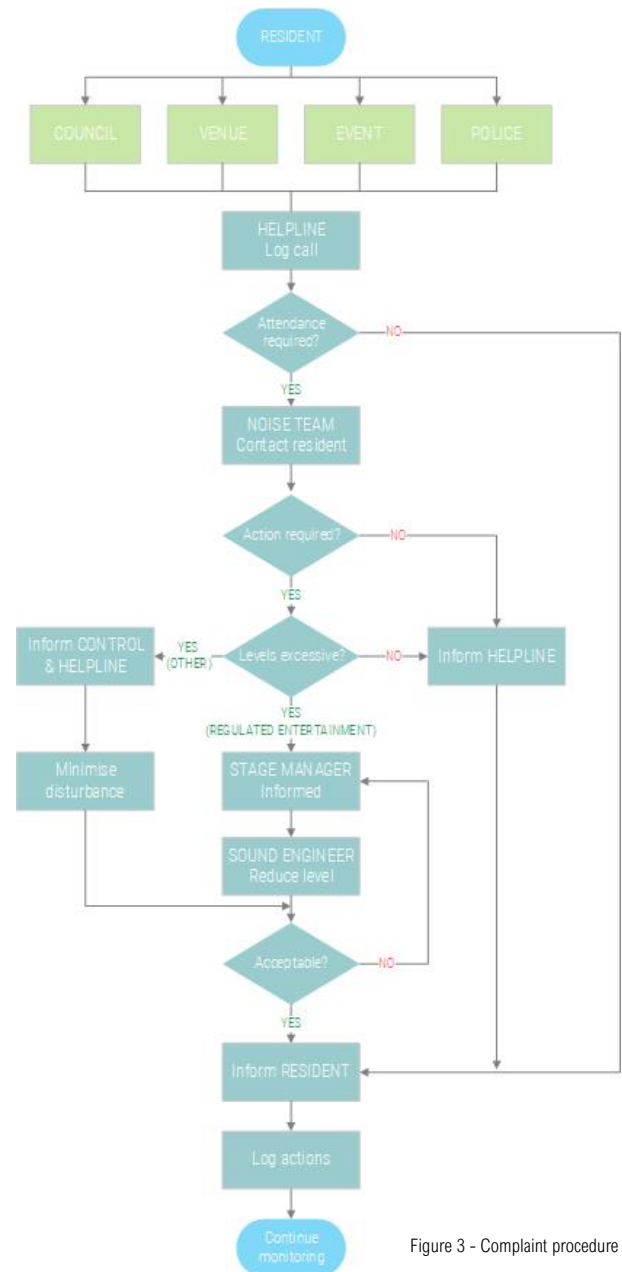


Figure 3 - Complaint procedure

¹⁷ The Noise Representative may be the Sound Consultant, a member of management team, or a Community Liaison representative.

¹⁸ For GDPR compliance callers will be asked if their personal information may be retained for the purposes of assessing disturbance and shared with the responsible authorities. In absence of clear and recordable authorisation any personal information shall not be shared or retained.

Helpline contact log

ID #		LOG #	
VIA:		TIME:	DATE:
OPERATOR:		SUBJECT:	
CONTACT		ADDRESS:	
NAME:			
TEL:			
EMAIL:			
NOTES			
ACTION:		CURRENT STATUS:	

ID #		LOG #	
VIA:		TIME:	DATE:
OPERATOR:		SUBJECT:	
CONTACT		ADDRESS:	
NAME:			
TEL:			
EMAIL:			
NOTES			
ACTION:		CURRENT STATUS:	

H. Terminology

Noise is generally defined as unwanted sound, typically loud, annoying, or disturbing neighbours. Often music noise is particularly disturbing as bass and repetitive beats will disrupt local homes and businesses. Consequently, the character and tone of the noise may be of more considerable significance than the relative loudness. Most of the jargon used relates to Decibels (dB) and the different methods sound level is assessed:

- dB is a relative unit of sound level measurement
- A change of 3dB is typically considered a “just noticeable” difference in sound level
- An increase or decrease of 10dB is perceived as a doubling or halving of the sound level
- A typical conversation is around 60dBA, a moderately busy bar around 80dBA and 100dBA for a concert or club

The ear is naturally less sensitive to low bass and high treble sounds compared to mid-range. To approximate how the ear responds, sound levels are often measured with adjustments or ‘weightings’ to represent the human ear. A-weighting is the most common adjustment when measuring environmental noise and reduces the level of bass and treble measured to mimic our ears frequency response. Consequently, it is common for sound levels to be expressed as dBA. i.e., dB with A-weighting adjustment. Other weightings include C-weighting used to approximate how the ear responds in a loud environment like a concert. An LCeq criterion is more effective at controlling Low-Frequency Noise (LFN) compared to A-weighted plus the octave bands centred on 63Hz & 125Hz. Z-weighting, which means unweighted or linear response where no adjustment is applied.

Entertainment sound levels typically fluctuate over time. A Sound Level Meter (SLM) will measure over time and calculate the Equivalent Level (Leq), an overall level similar to an average, representing the sound level while moderating transitory noises such as a door slamming or passing vehicle. The Leq measurement may also be A-weighted and expressed as $L_{Aeq T}$, where T is the minutes. E.g., $L_{Aeq 15'}$. These noise limits aim to protect neighbours from disturbance, so noise limits often refer to a sound level measured 1m from the façade of a neighbour’s property. E.g., the MNL should not exceed 65dB $L_{Aeq 15'}$ at 1m from the receptor façade.

MNL is the specific noise level of the music from the venue, excluding the residual noise which is the combination of routine noises in the environment such as traffic but excluding any specific noise from an event or venue. The true MNL must be calculated as the measured level less the residual. In practice, this is difficult as it is unlikely to turn the event music on and off to compare the relative residual levels only with combined residual and music noise. Consequently, it is necessary to take measurements when the music is inaudible to determine a representative residual level. The residual level is logarithmically subtracted from the measured level to determine the music level. Decibels are logarithmic so they cannot be subtracted as you would two normal numbers.

Background levels have a specific meaning describing a statistical assessment of the level that was exceeded for 90% of the time and is expressed as L_{90} . The L_{90} approximates the background or ambient sound level when 90% of the loudest sounds are omitted. Licence conditions are often derived from the Noise Council Code of Practice summarised which defines the background as the L_{A90} over the last 4 hours of a proposed event or the entire event if shorter.

A reasonable rule of thumb is the background L_{A90} will be 5 – 10dB lower than the residual L_{Aeq} during the day. The difference will be 3 – 5 dB or less at night-time when there is less general activity.

I. Guidelines

There are a number of relevant legislation & guidelines including, but not limited to:

- Licensing Act 2003, Local Authority Policy & conditions
- The Event Safety Guide (HSG195) & The Purple Guide www.thepurpleguide.co.uk
- Noise Council Code of Practice on environmental noise at concerts (1995)
- Sound advice: Control of noise at work in music and entertainment. HSG 260
- Noise from Pubs & Clubs (Final). DEFRA NANR163 (2006) & Control of Noise from Pubs and Clubs. IOA (2003)
- Research into Attitudes to Environmental Noise from Concerts. DEFRA NANR292 (2011)
- W.H.O. Environmental Noise Guidelines (2018)
- BS 5228-1:2009+A2014 - Code of practice for noise and vibration control on construction and open sites
- BS 7445-1: 2003 - Description and measurement of environmental noise. Guide to quantities and procedures

Good Practice Guide for Control of Noise from Pubs & Clubs

The guide published by The Institute of Acoustics in March 2003 provides guidance for the assessment & control of pub & club noise affecting noise sensitive premises. The primary sources considered are P.A. systems, music, games, children’s play areas, outside spaces, patrons’ behaviour, vehicles, plant, machinery & general activities such as waste & deliveries. The original intention was to provide objective noise criteria; however, it was not possible to satisfactorily validate the proposals and the guide recommends that local policies are devised using the guide & existing licensing & planning policies. The guide recommends:

- For premises where entertainment takes place on a regular basis, music & associated sources should not be audible inside noise-sensitive premises at any time.
- For premises where entertainment takes place less frequently, music & associated sources should not be audible inside noise-sensitive properties between 23:00 – 07:00. For other times, appropriate criteria need to be developed which balance the rights of those seeking & providing entertainment, with those who may be disturbed by noise.
- In the absence of objective criteria, what is ‘regular’ should be determined on a local basis to reflect the local expectation. The guide suggests that noise may be considered as inaudible when at a low enough level that it is not recognisable as emanating from the source in question and does not alter the perception of the ambient noise environment.

BS5228:2009+A2014 Code of practice for noise & vibration control on construction & open sites

As the code of practice for noise and vibration control on construction and open sites, BS 5228 refers to the need to protect against noise and vibration of persons living and working in the vicinity of and those working on construction and open sites. This Standard provides effective practical procedures for the control of noise & vibration.

BS7445-1:2003

BS7445 part 1 specifies the descriptions and measurements of environmental noise. This standard serves as a guideline for the necessary procedures and methodologies to be followed. Accurate, repeatable & traceable assessment is supported by application.

Code of Practice on Environmental Noise Control at Concerts

Note: This guidance is included to provide background context for the noise control of concerts & outdoor events.

The Code of Practice on Environmental Noise Control at concerts (1995) also known as the Pop Code (Pop) provides guidelines for managing music noise disturbance. When assessed, the Music Noise Level (MNL) must not exceed the guidelines shown below at 1 metre from the façade of any noise-sensitive premises between 09:00 and 23:00. For events running between 23:00 and 09:00, music should not be audible inside noise-sensitive premises with the window open (PPG approximates 15-20dB attenuation). The Pop accepts there is no universally accepted guideline for inaudibility but assumes that music just audible outside the noise-sensitive premises is not audible inside.

Concert days per calendar year	Venue Category	Guideline
1-3	Urban Stadia or Arenas	The MNL should not exceed 75dB LAeq 15'
1-3	Other Urban and Rural Venues	The MNL should not exceed 65dB LAeq 15'
4-12	All Venues	The MNL should not exceed the background noise level by more than 15dB
Up to 30	Indoors	The MNL should not exceed the residual level by more than 5dB

Table 5 - Pop code criteria

As a note to the table above, the Pop states; For those venues with more than three events per calendar year are expected, the frequency and scheduling of the events will affect the level of disturbance. In particular, additional disturbance can arise if events occur on more than three consecutive days without reducing the permitted MNL. The Pop states that where arrangements are satisfactory with higher or lower noise levels than the proposed guidelines, these limits should continue.

The MNL in an audience close to the mixer position is typically 100dBA and anything below 95dBA would prove unsatisfactory to an audience. The Pop includes a footnote regarding bass; 'Although no precise guidance is available the following may be found helpful (ref 8) a level up to 70dB in either the 63Hz or 125 Hz Octave Band is satisfactory; a level of 80dB or more in either of these octave frequency bands causes significant disturbance'. This is often misused as Ref 8 relates to 'A study of Low-Frequency Sound from Pop Concerts, J.E.T. Griffiths, J. Staunton and S Kamath (Proc IOA, Vol 15, Part 7, 1993)' which assessed disturbance beyond 2km and therefore should not be applied to receptors closer than 2km. From experience, the low-frequency sound is adequately controlled by the LAeq limit. Note to Guideline 3.4 states it is the frequency imbalance that causes a disturbance. Consequently, there is less of a problem from low-frequency content near an open-air venue. The Pop code authors maintain that the LFN notes in Ref 8 are not intended as LF criterion for licence conditions.

Edinburgh Napier University researched attitudes to environmental noise from concerts (Defra NANR 292). It suggests the perceived level of entertainment noise is significant in the context of the environs, not a venue category. The report states that 'annoyance' rates for urban venues appear to be linked to MNL rather than a category or concert days. The report also suggests that resident's disturbance is linked to a subjective perception of how loud the noise must be at the source and concludes a significant percentage of the population will form an opinion of the noise's subjective annoyance irrespective of the actual level. Because of this research, events adopt similar noise criteria to Stadia or Arenas as provided Pop criteria table above. There is good evidence of licensing authorities applying comparatively high levels of 75dB 15' to temporary venues with more than 3 and as many as 40 concert days per year that are successfully operating with minimal levels of a complaint.

Venue	Concert days per annum	Licence condition	Notes
Alexandra Palace Pk, Tower Hamlets	30 (3x type A, 4x B, 23 x C)	A: 75dB, B: 65dB, C: 55dB LAeq 15'	No low-frequency limit
Victoria Park, Tower Hamlets	Unknown	75dB LAeq 15' at 1m from façade	
Trafalgar Sq., Westminster	40 amplified events	75 dB LAeq 15' at 1m from façade	No low-frequency limit
Central Park, East Ham, London	Unknown	75dB LAeq 15' at 1m from façade	
Lambeth parks: (Clapham Common, Brockwell Park, Kennington Park, Streatham Cmn, Norwood Park)	Up to 8 major events per venue (Total maximum of 40 major events in Lambeth Parks)	75dBA and 90dBC Leq 15' free-field	Non-major on a case-by-case basis. Typically, 65dB LAeq 15'

Table 6 - Venue noise limit

Since the publication of the Pop in 1995, several modifications have been made following changes in the events industry, increase demand for outdoor events and changes to associated guidelines and legislation. Thus, it has been under review for some time, particularly in relation to the number of concerts and corresponding levels. A central criticism is that 10dB difference between Stadia or Arenas compared to Other venues is too large. Consequently, the Pop is being reviewed to address the gap in the LAeq criterion between venue types and concert days.

J. Traffic noise

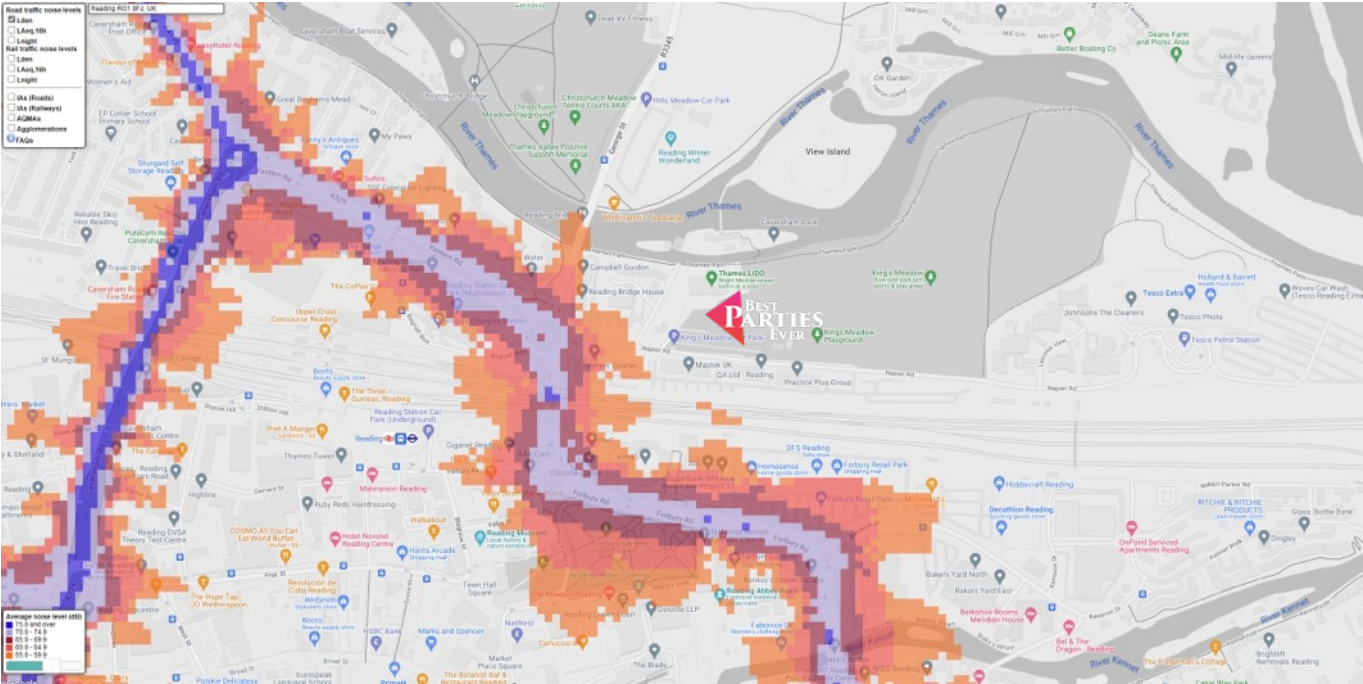


Figure 4 – Road Lden

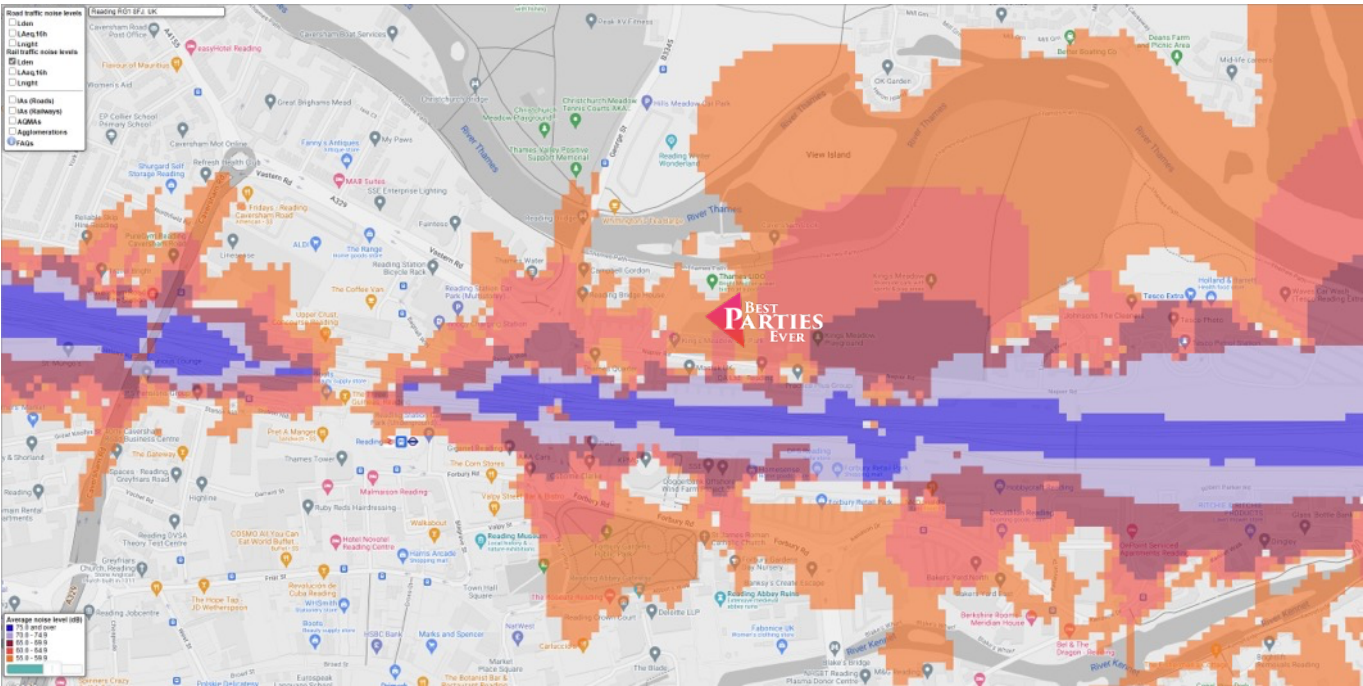


Figure 5 – Rail Lden

K. Sound system specification

Control: Yamaha TF1 Rack mixer

Dance floor: 4x Martin Audio F15 speakers flown at 5m

Dining: 8 x Martin audio X12 speakers flown at 5m

- Zoned speaker groups: separate control/limiter over dining area & dance floor (and any ancillary areas)
- Individual input compressor/limiters across all live mics, DJ L/R & DJ booth
- DJ booth to go through the mixer. i.e., not directly from DJ mixer into a powered wedge.
- DJ mic to go direct into the mixer for dynamic processing & looped back into the DJ mixer
- The mixer must have password protection. Access to be restricted to the sound engineer, venue manager, acoustic consultant & RDC representative.
- Integrating Sound Level Meter at the DJ position.

Floorplan

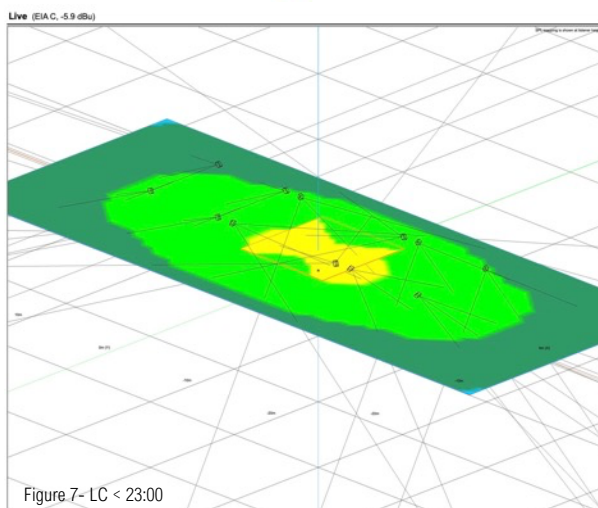
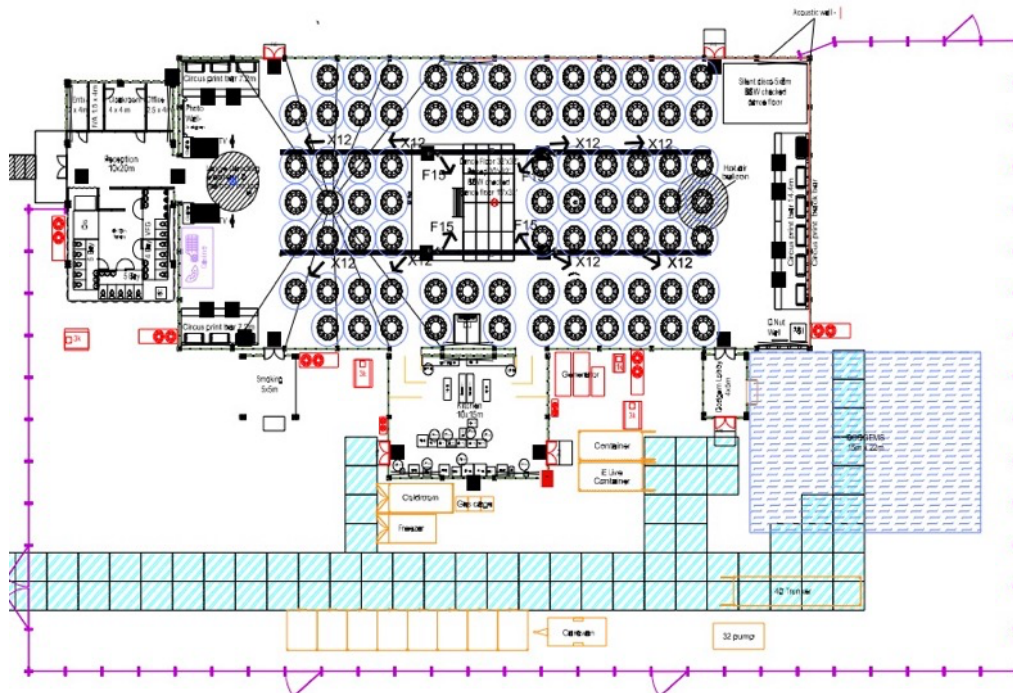


Figure 7- LC < 23:00

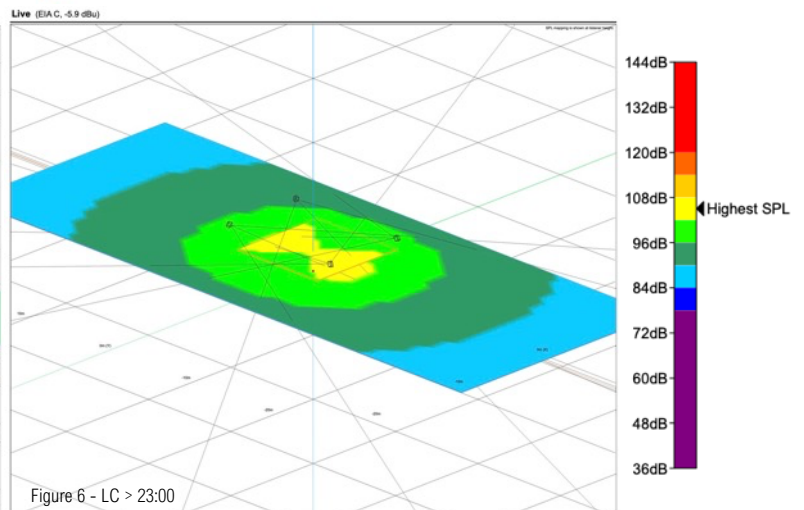
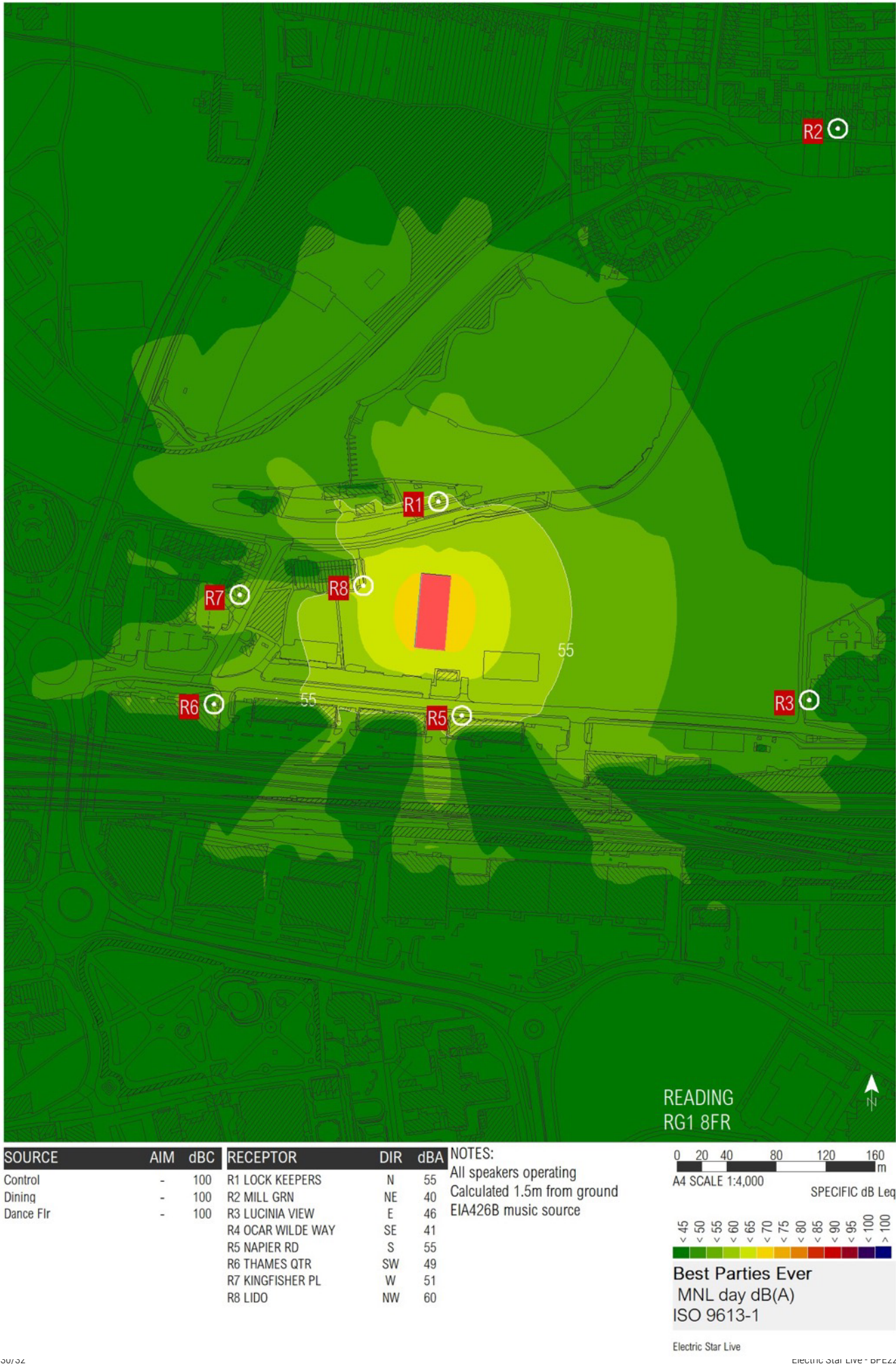


Figure 6 - LC > 23:00

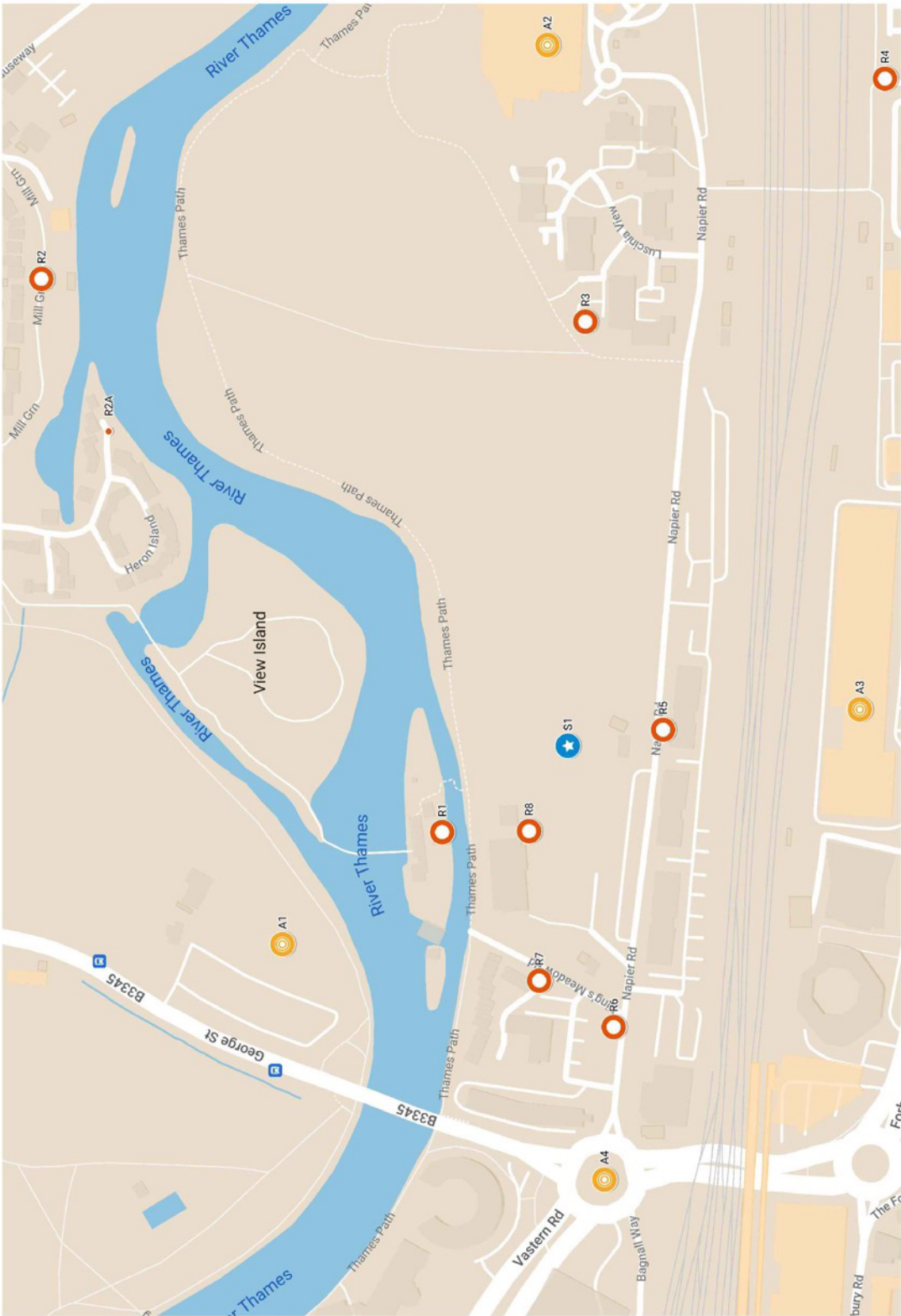
L. Predictions





M. Map

BPE: READING



SOURCE
★ S1 VENUE

- RECEPTOR
- R1 LOCK KEEPERS
 - R2 MILL GRN
 - R2A HERON ISLAND
 - R3 LUSCINIA VIEW
 - R4 OSCAR WILDE RD
 - R5 NAPIER RD
 - R6 THAMES QTR
 - R7 KINGFISHER PL
 - R8 LIDO

- AMBIENT
- A1 WINTER WONDERLAND
 - A4 VASTERN RD
 - A3 FORBURY RETAIL PARK
 - A2 TESCO EXTRA

KINGS MEADOW RG1 8DF