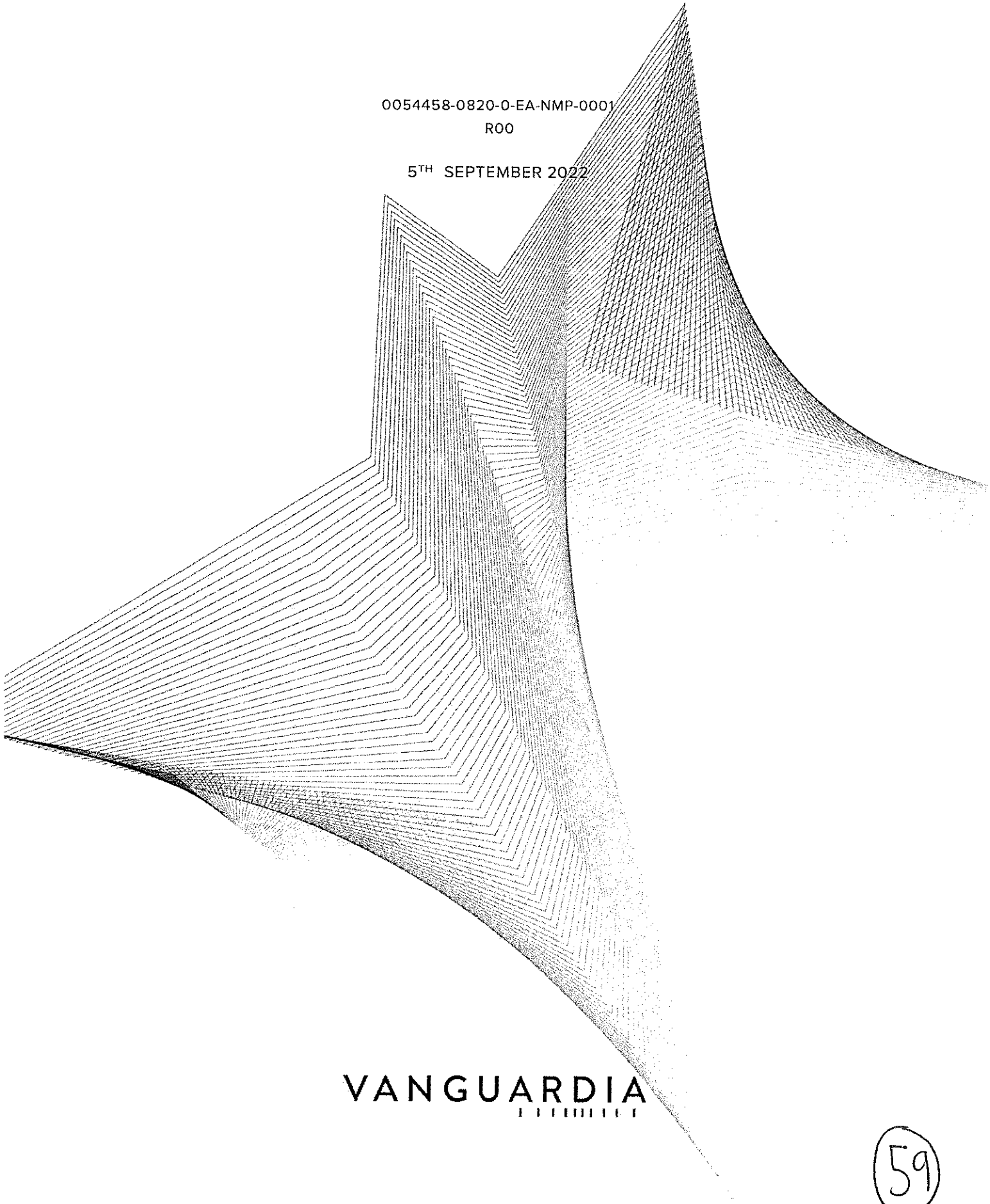


**EAST VILLAGE
WEMBLEY STADIUM**

NOISE MANAGEMENT PLAN

0054458-0820-0-EA-NMP-0001
R00

5TH SEPTEMBER 2022



VANGUARDIA
LIMITED

DOCUMENT CONTROL

DOCUMENT TITLE	NOISE MANAGEMENT PLAN	REVISION	R00
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1. INTRODUCTION

- 1.1. Vanguardia Ltd. has been appointed by Wembley National Stadium Ltd (WNSL) to prepare a Noise Management Plan (the "NMP") which establishes the noise management procedures to be adopted with respect to proposed uses of the site to be known as East Village, which in its current consented use is a part of the Stadium Concourse.
- 1.2. The proposed licensed 'Premises' comprises an open-air area, defined section of the external concourse at Wembley Stadium. It is proposed that it is used for a variety of purposes on both Event Days and non-Event days. There will not be Regulated Entertainment on every occasion.
- 1.3. It is understood that the principal use of this area will be to provide a fan zone for use prior to major sporting events. WNSL currently have a fan zone which will be lost following redevelopment of the area. Following the events which took place at Wembley Stadium on Sunday 11 July 2021 (Euro Sunday), the report by Baroness Casey identified that the absence of a fan zone or fan zones denied the police and other agencies a key crowd management tool and was potentially a very significant factor in the disruption which occurred. It is therefore essential that a suitable location is found for a fan zone near to the stadium which can act as "a much-needed pressure valve" before a high-profile sporting event.
- 1.4. This Noise Management Plan is supporting documentation for a Licensing Application (by WNSL) to be submitted to the Regulatory Authority, London Borough of Brent (LBB).
- 1.5. As such, the purpose of this NMP is to describe the management of, and (where applicable) the application of mitigation measures for, the environmental noise protection strategy that will be enacted by the Operator, to control noise generated at the proposed site to within stipulated limits, when measured at the nearest affected Noise-Sensitive Receptors (NSRs).
- 1.6. This should be considered a working document and consequently will be amended/updated once new information pertinent to the noise management requirements of the proposed site becomes available.

PROPOSED SITE OPERATION

- 1.7. The operators WNSL have presented their expectations for the potential uses of the proposed site. These can be summarised as follows (1100hrs to 2100hrs):
 - Fan zone with screens showing previous matches/ relevant entertainment
 - Plays
 - Films
 - Dance

- Ice Skating, Comedy Night, Corporate Activities
- Live Music
- Recorded Music

- 1.8. It should be noted that these activities will not take place daily. However authorisation is sought for every day of the week to ensure flexibility of operation.
- 1.9. Entry to the fan zone on a match day will be restricted to those persons holding tickets for the main event. The East Village is not intended to be an area for fans without tickets. Entry will be part of the 'package' and will not be a pay on entry facility.
- 1.10. A glossary of acoustic terminology is provided in Appendix A.
- 1.11. Appendix B presents a site layout drawing indicating the operational extent of the proposed application site.

2. LICENCE CONDITIONS

GENERAL REQUIREMENTS

2.1. A set of draft licence conditions has been submitted by the applicant relating to Village Events when the Village is in operation for licensable activities.

2.2. There are two scenarios to consider:

- It is understood that where the activities **do not include regulated entertainment** any music noise will be limited to a level accepted as 'incidental or background' music. This level can be set and agreed by all interested parties. It is recommended that this is done prior to the first event with the East Village set up in a way that would be typical of the type of events proposed.
- It should however be noted that the proposed East Village is within the red line boundary of the existing premises licence for the stadium. **Where there is regulated entertainment** within the East Village on a Concert Event day, to avoid confusion the current noise condition should apply, namely:
 - a. The Noise Council Code is to be used for target levels at existing community sites; and
 - b. Guideline levels for the proposed 15 events at the stadium will be that the Music Noise Level shall not exceed the background noise level by more than 15 dB(A) over a 15-minute period at any position 1 metre from the facade of any existing noise sensitive premises. The offsite noise limit has been established as 64dB(A) Leq, 15mins at Sherrins Farm.

2.3. It is important to note that these conditions relate to existing noise sensitive premises and are not applicable to the new residential development for the land adjacent to Wembley Stadium and Empire Way. These buildings are designed to have adequate sound insulation to minimise the noise impact from concert events. This was agreed during the planning application and confirmed in the correspondence (letter dated 19 August 2004) from Brent Council's Director of Planning stating that:

'The code of practice would not be directly applicable to the new dwellings contained within the Quintain development, but would, however, still be applicable for all existing residential properties within the wider area that have not been designed with the same safeguards against possible noise nuisance from the stadium operation. The Noise Council Code of Practice for Environmental Noise Monitoring at Concerts is to be used for target levels at existing community sites.'

2.4. Condition 12 of the Stage 1 Planning Permission states that:

“Residential development shall be constructed so as to provide sound insulation against externally generated noise, such that resultant internal noise levels between the hours of 7.00 am and 11.00 pm shall not exceed 38 dB LAeq 15 min (based on a worst-case external noise environment of 84 dB LAeq 15 min, 1 metre from the façade of Block W10 at a height of 124 metres AOD) unless otherwise agreed in writing by the Local Planning Authority. This limit applies with windows shut and with an appropriate ventilation system that does not give rise to noise level greater than 38dB(A) or a sound level in any 1/3 octave band in the range 50 Hz to 8 kHz that is more than 5 dB above immediate adjacent 1/3 octave bands.

2.5. In order to set a level for regulated entertainment in the East Village area it will be necessary to consider the location within the Village of any sound sources and it is recommended that initially a bespoke sound management plan be produced for this type of event with calculations confirming that the noise levels specified in para 2.4 can be achieved.

2.6. It is suggested that an appropriate form of condition to be appended to the licence application in this instance could be:

In the case of Regulated Entertainment in the form of amplified live and/or recorded music on any temporary staging or otherwise, a specific NMP shall be submitted to the LBB Environmental Health/Noise Pollution team (unless otherwise agreed) at least 28 days before the planned Entertainment detailing:

- *The position and size of the proposed stage;*
- *The music source and orientation of any PA*
- *The hours/duration of the proposed Regulated Entertainment*
- *The position of any rigging/lights*
- *Any proposed measures to mitigate any undue noise disturbance for local residents demonstrating compliance with the agreed noise limits*

2.7. All plant noise associated with the event (generators, chillers, etc.) will be located as far away from noise sensitive properties as possible. Where required, appropriate mitigation measures will be considered.

3. ACCEPTABLE ENTERTAINMENT NOISE LEVELS AT THE CLOSEST RECEPTORS

3.1. To quantify levels which would indicate compliance with the proposed Regulated Licensing Condition, an assessment has been undertaken of likely noise levels, as measured at the closest receptors, emitting from the site where entertainment may be provided.

ASSESSMENT OF THE ACOUSTIC ENVIRONMENT

3.2. The location of the East Village is shown in the site plan in Appendix B. The closest noise-sensitive residences lie directly to the south of the site on Park View, on the opposite side of a section of railway line comprising three through-tracks and two sidings.

3.3. There is also a new-build Quintain block to the East of the site.

3.4. The acoustic environment at the residences on Park View is dominated by road traffic but regularly affected by noise from trains, which have sometimes been observed to sit stationary in the sidings with diesel engines running, as well as passing by on the way to or from Wembley Stadium Station to the west.

LIMITING MUSIC NOISE LEVEL

3.5. To establish the on-site limiting music noise level, a computer model of the site has been produced with a nominal on-site noise level of 85 dB(A). Figure 1 below shows the predicted offsite levels at the nearest noise sensitive receptors.

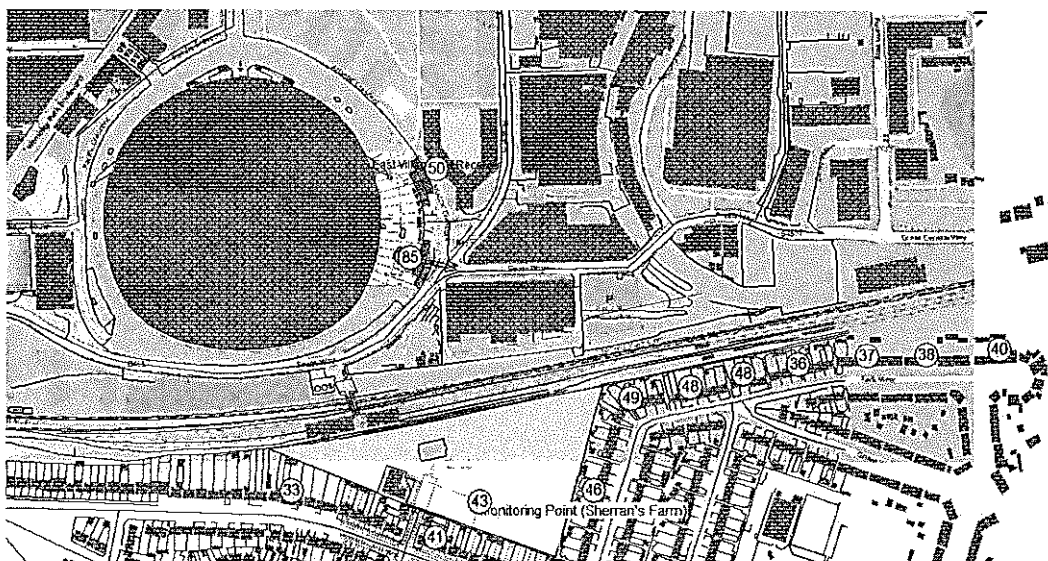


Figure 1 Results of IMMI modelling based on onsite level of 85 dB(A)

3.6. The results are also shown in tabular form below in Table 1

Table 1 Results of IMMI modelling

Location / height	dB(A)
134 Park View 1.5m	49
134 Park View 4.5m	49
118D Park View 1.5m	46
104 Park View 1.5m	49
84 Park View 1.5m	35
62 Park View 1.5m	37
38 Park View 1.5m	38
14 Park View 1.5m	40
113 Victoria Ave 1.5m	46
167 Oakington Manor Dr 1.5m	37
129 Oakington Manor Dr 1.5m	31
129 Oakington Manor Dr 4.5m	33
167 Oakington Manor Dr 4.5m	41
113 Victoria Ave 4.5m	46
118D Park View 4.5m	48
104 Park View 4.5m	48
84 Park View 4.5m	36
62 Park View 4.5m	37
38 Park View 4.5m	38
14 Park View 4.5m	40
New Development (E) AOD 124m	50
Monitoring Point (Sherrins Farm)	43

3.7. The predictions demonstrate that with a noise level of 85 dB(A) within the licensed area, the offsite noise levels are well within the likely limits summarised in Section 2 of this report and are unlikely to generate noise complaints.

4. SOUND MANAGEMENT PLAN FOR EVENTS INCLUDING REGULATED ENTERTAINMENT

- 4.1. Careful consideration will be given to implementing and exercising an effective sound management programme during sound checks and events to manage entertainment noise from the venue.
- 4.2. The sound management programme fundamentally follows the procedures that have been successfully adopted at outdoor concerts and festivals over the past 30 years throughout the UK and are detailed below.

PRE-EVENT INFORMATION

- 4.3. WNSL will identify one or more nominated noise marshalls who will be responsible for sound levels during each event.
- 4.4. A telephone complaints line will be made available for the duration of each event. Should any noise complaint be received, it will be investigated by the duty noise marshall and if noise levels are above those agreed, immediate action should be taken to reduce the levels at the noise source. A complaints log will be maintained throughout the event, detailing addresses of complaints, times and actions.
- 4.5. The noise management communication protocol will be agreed and reviewed regularly to ensure effective and responsive communication channels are established and maintained between all relevant parties throughout the duration of the event.

SOUND SYSTEMS

- 4.6. The appointed sound system supplier will be informed of the requirements of strict noise management. Their contract of hire will specify that the overall control of sound levels will be set by the venue and/or their appointed agent (noise marshall). This requirement will also apply to third-party system suppliers booked by hirers of the venue.
- 4.7. The sound system will be set up in such a way as to minimise the noise impact at noise sensitive properties. Where possible, the sound system should be flown rather than ground stacked in order to focus the speakers downwards into the audience area. The speakers should have as narrow horizontal dispersion as possible and be directed inwards to reduce overspill from the intended coverage area. In addition, it is recommended that the sound

system is hung as low as possible in order to take advantage of any barriers provided around the event arena and minimise the distances between sound sources and audience areas.

- 4.8. The sound system should be set up in a configuration which is as distributed as possible. The advantage of this type of setup effectively means that the sound system does not have to operate at such high levels to provide even sound coverage to intended areas.
- 4.9. Other mitigation which will form part of the management plan for events including regulated entertainment will include advice on minimising rig/derig noise, restrictions on sound testing and rehearsals and the use of cardioid sub arrays where appropriate.

SOUND MANAGEMENT PROCEDURES

Sound Propagation Tests

- 4.10. Prior to the event, the production team should carry out short sound checks and as part of this process, a venue representative or appointed marshall will undertake sound propagation tests to correlate the music noise levels at the mixing desk with those observed at the most sensitive sound control positions. The results of these tests will be used to 'fine tune' the sound system in order to maximise the containment of music and set an appropriate sound limit at the mixer position.

Noise Management Inside the Venue

- 4.11. Comperes, DJs and other performers will be informed of the noise limits prior to the start of their set and introduced to the noise marshall(s) who will explain the procedure in the event of an exceedance offsite.
- 4.12. In the event that any DJ fails to respond to the instructions of a noise marshall, the sound system supplier will be instructed to reduce the system level such that licence conditions can be met.
- 4.13. DJs and other performers will be encouraged to keep monitoring levels as low as possible and to use headphones as a preference.

Sound Monitoring Outside of the Venue

- 4.14. Noise measurements outside of the site will be taken on a rotational basis at agreed monitoring locations and in response to any complaints that may be received. The most noise sensitive location should be established for each event and used as the primary location to manage noise sources onsite. Action necessary to reduce music noise levels will be relayed to

the mixer position and immediate instructions issued to the sound engineer to resolve any potential problems.

TELEPHONE COMPLAINTS LINE

- 4.15. The telephone complaints line will be confirmed prior to the event.

5 . S U M M A R Y

- 5.1. Vanguardia has been appointed to assess the likely sound levels from the use of an area on the concourse as a fan zone.
- 5.2. This report provides information on noise guidelines, noise predictions and noise management procedures that have been successful at managing noise at many other venues. This document will be updated as the pre-event work progresses.
- 5.3. Recommended levels not to be exceeded for regulated and non-regulated entertainment are summarised in Section 2 of the report on concert and non-concert days.
- 5.4. The predictions show that with appropriate management of the source levels, these recommended limits can be met at all community locations.
- 5.5. A generic sound management plan has been included to manage noise from events that include regulated entertainment.
- 5.6. A noise condition intended to manage any noise breakout from Regulated entertainment in the East Village has been included recommending that a bespoke sound management plan be produced in advance of any such event with calculations confirming that the noise levels specified in para 2.4 can be achieved.
- 5.7. It is recommended that all plant noise associated with the event (generators, chillers, etc.) shall be located as far away from noise sensitive properties as possible. Where required, appropriate mitigation measures will be considered.

APPENDIX A – ACOUSTIC GLOSSARY

A-WEIGHTING

The human ear is not equally sensitive to all frequencies of sound. It is relatively much less sensitive to very low frequencies such as 'mains hum', and to very high frequencies such as the call of a bat, than to the 'mid-frequencies' important for human voice communication. In order to make sound level meters, which would otherwise be indiscriminate in registering sound pressures, respond in a way which reflects human perception of sound, they usually are fitted with a set of filters to progressively filter out the high and low frequency energy. The filters are made to an internationally standardised specification and the filtered noise level is said to be 'A-weighted'. Sometimes A-weighted decibel levels are denoted 'dB(A)', but the correct, internationally standardised format for reporting requires the 'A' to be appended to the noise descriptor, e.g. $L_{Aeq,T}$, L_{Amax} , etc.

AMBIENT NOISE

This is the totally encompassing sound at the measurement position over a specified time interval and usually comprises sound from many different sources both near and far.

ATTENUATION

A general term used to indicate the reduction of noise, or the amount (in decibels) by which it is reduced.

AVERAGING

In the absence of a dominant steady source, the sound level at a point, indoors or outdoors, varies continuously. For example, the variation may be over a few dB about an average value in a quiet room, or over 10 dB or more in a noisy outdoor environment. In order to define a level to represent the relative level of noise in the space it is necessary to define that average value. The most common averaging methods are energy averaging (L_{Aeq}) and statistical averaging (L_{AN} where N is a percentage between 1 and 100). The $L_{A10,T}$, the noise level exceeded for 10% of the measurement time interval T, is commonly used in the UK for the assessment of road traffic noise.

BACKGROUND NOISE LEVEL, $L_{A90,T}$

Background noise level is a term used to describe that level to which the noise falls during quiet spells, when there is lull in passing traffic for example. It is quantified by the $L_{A90,T}$ which is the noise level that is exceeded for 90% of the measurement time interval, T.

DECIBELS

Noise conventionally is measured in decibels (dB). The decibel is a logarithmic unit and decibel levels do not add and subtract arithmetically. An increase or decrease of 3 dB in the level of a steady noise is about the smallest that is noticeable. It represents a doubling or halving of noise energy. An increase or decrease of 10 dB represents a ten-fold change in noise energy, and is perceived as a doubling or halving of loudness. The threshold of hearing for a typical young, healthy adult is 0 dB A-weighted sound pressure level. A noise level of 140 dB(A) can cause physical pain. Most people listen to their televisions at about 60 to 65 dB(A). Alongside a busy main road the ambient noise level may be in the 70 to 80 dB(A) range; on a quiet day in the country it might be as low as 30 dB, in town 40 to 50 dB(A).

DECIBEL ADDITION

If two similar noise sources operate together their combined noise level at an observer's position some distance away is 3 dB higher than the noise level generated by just one of them. If two further machines are switched on the noise level generated by all four at the observer's position is 3 dB higher than the level generated by the two. If the number of machines is again doubled, to eight, the noise level increases by another 3 dB, and so on.

EQUIVALENT CONTINUOUS A-WEIGHTED SOUND PRESSURE LEVEL, $L_{Aeq,T}$

The 'equivalent continuous A-weighted sound pressure level' is an average of the fluctuating sound energy in a space. It is the value of the A-weighted sound pressure level of a continuous, steady sound that, over the specified time period, T seconds, has the same root mean square sound pressure as the varying sound. It can be likened to the mean petrol consumption of a car over a specific journey during which the instantaneous consumption peaked during periods of acceleration and fell during periods of coasting or braking.

FAÇADE SOUND LEVELS

Road and railway traffic noise levels often are specified in terms of the sound level at a position 1 m in front of the most exposed façade of potentially noise sensitive premises. Such levels are assumed to be 3 dB(A) higher than sound levels measured at an equivalent position away from the noise reflected off the building façade and any other surfaces (excluding the ground).

MUSIC NOISE LEVEL (MNL)

The L_{Aeq} of the music noise measured at a particular location without interference from extraneous ambient noise.

APPENDIX B - PROPOSED SITE LOCATION

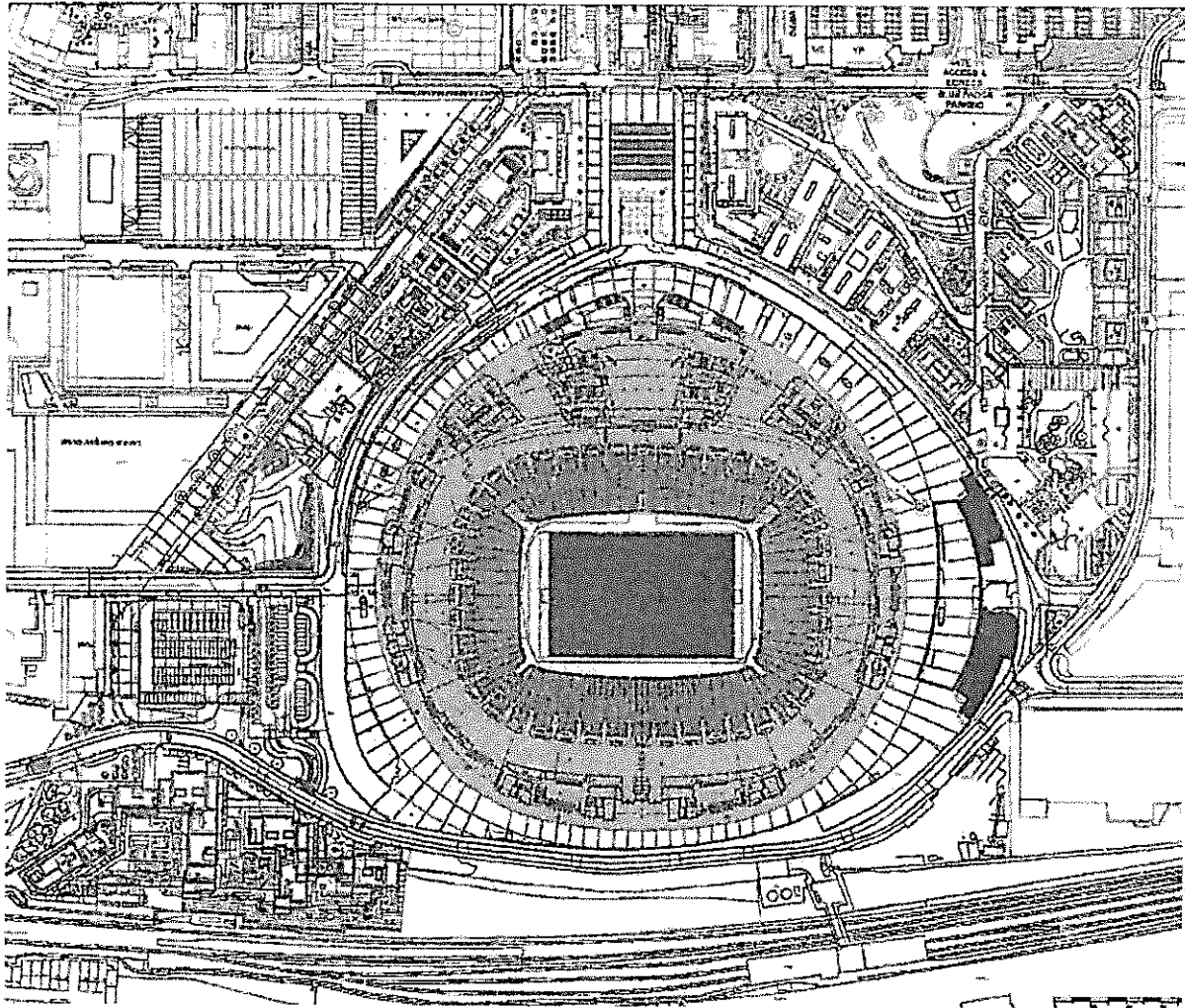


Figure 2 Proposed Site Location Indicating operational extent of proposed application site

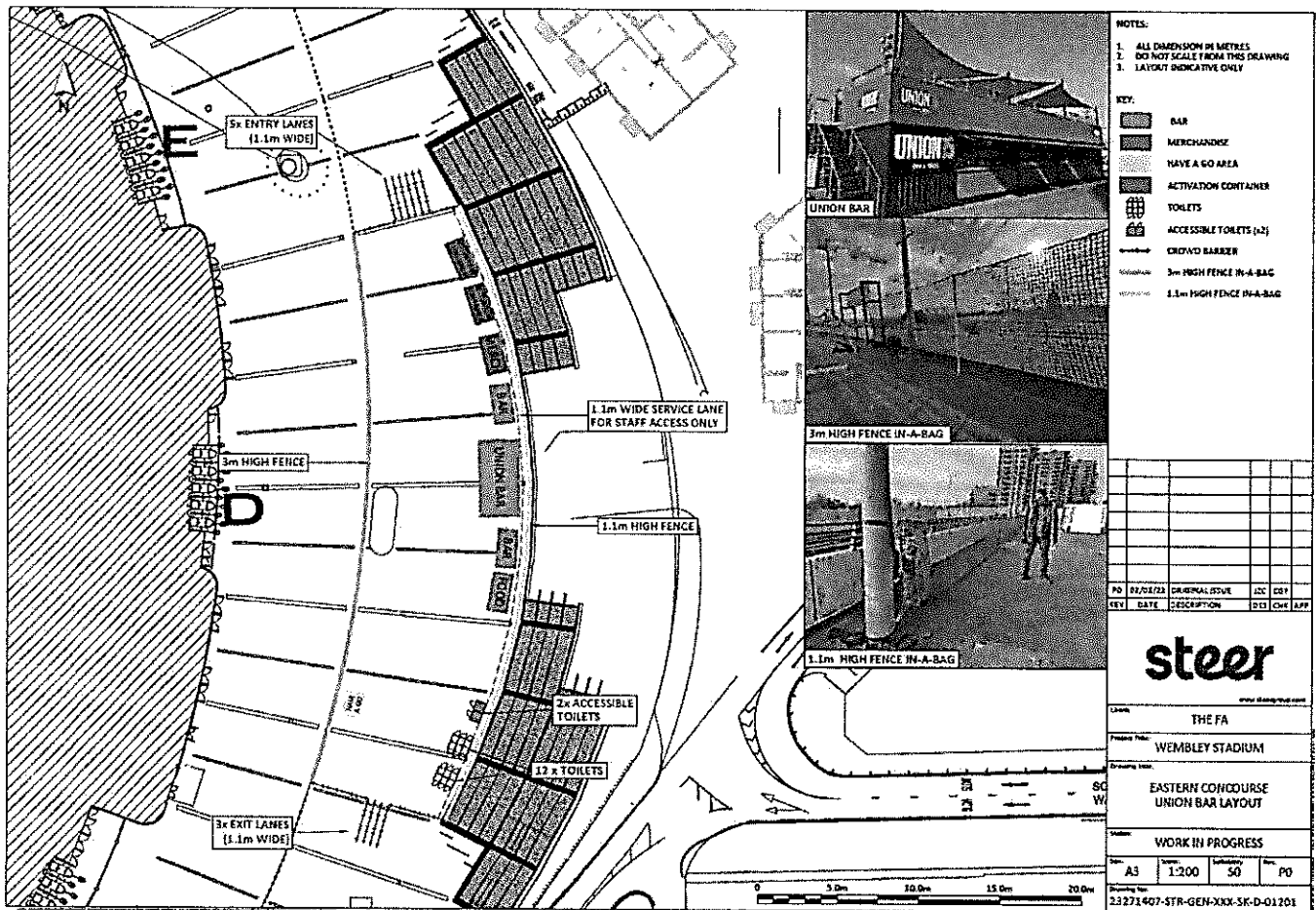


Figure 3 Indicative event site plan

- Note. It is likely that any stage erected for regulated entertainment will be in the yellow area identified as 'Have a go' area.

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