

Live Nation

Kasabian – Summer Solstice

21st June 2014

Victoria Park, London

Acoustic Summary Report

VC-101416-PCR01

Rev 00

July 2014

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Vanguardia Consulting

London Office: Southbank Technopark, 90 London Road, London, SE1 6LN
Head Office: 21 Station Road West, Oxted, Surrey, RH8 9EE
Tel: + 44 (0) 1883 718 690
Fax: + 44 (0) 8700 516 196



1 Introduction

- 1.1 Vanguardia Consulting were appointed by Live Nation to assist in the monitoring and management of sound and noise at the Kasabian concert on Saturday 21st June 2014 at Victoria Park, Leicester.
- 1.2 The purpose of this document is to describe the results of the sound management and monitoring scheme that was put in place to minimise the music noise levels at residential properties. Sound limits set by the local authority and concert information relative to sound are reproduced in Section 2 and a summary of the results of the monitoring are set out in Section 3.
- 1.3 A pre-event Sound Control scheme report (ref VC-101416-NMP01) was issued in May 2014 that set out the sound control procedures that were to be adopted during the concert.

2 Summary of Concert Data and Conditions

Production Company/Event Manager	Live Nation / Paul Cook
Sound Rental Company	Britannia Row
Sound system	L-Acoustic K1 main hangs and K2 delays
Stage location	At the East of the park orientated towards the West.
Noise condition	The Licence holder will ensure a residential facade level not to exceed 73dB(A) for the headline act, and a residential facade level of 70dB(A) for all support acts.
Low frequency condition	N/A
Time for rehearsal/sound tests	1500-1900hrs Friday 20 th June
Rehearsal/sound checks (Event Day)	From 1000hrs Saturday 21 st June
Start and end times for concert	1200-2300hrs Saturday 21 st June
Licensing Authority	Leicester City Council
Council Officers	Robin Marston / Chris White
Meteorological conditions	Warm and Sunny

- 2.1 Liaison with the Promoter and the Environmental Health Officers took place prior to the concert, during sound-checks and throughout the concert itself.
- 2.2 A sound action plan (doc ref VC-101416-NMP01) dated May 2014 was issued and agreed with the local authority prior to the event.

3 Summary Results

Sound propagation tests

- 3.1 A sound propagation test was carried out on the afternoon of Friday 20th June. Pre-recorded music was played through the sound system and off-site noise measurements recorded at the agreed noise monitoring locations in order to correlate the front of house mixer levels with those at the most sensitive off-site locations. Additional measurements were taken at offsite locations during the band rehearsals and sound-checks. The results of the sound propagation tests are shown below in table 1:

Table 1: Sound Propagation Test Results

Time	Location	Mixing Desk	Offsite
16:56	Victoria Gardens	97.8	73.1
16:57		101.9	75.6
16:58		99.5	73.8
16:59		100.6	74.5
17:00		99	72.1
17:48	158 London Road	102.7	74.8
17:49		102.4	74.5
17:50		103.8	75.5
17:51		102.6	73.6
17:59	Granville Road	104.2	75.3
18:00		103.2	72.9
18:01		101.9	73.2
18:02		98	72.7
18:03		99.9	73.4
18:14	Victoria Gardens (sidehangs off)	101.7	71.4
18:15		103.7	74.2
18:16		101	71.3

- 3.2 Noise levels were monitored continuously at the main stage during the event on Saturday 21st June.
- 3.3 The mixing desk results from the event are shown in the following table 2:

Table 2: Mixing Desk Results

Date	Start Time	Duration	LAeq, dB
21/06/2014	16:00	00:15:00	70.4
21/06/2014	16:15	00:15:00	71.3
21/06/2014	16:30	00:15:00	83.5
21/06/2014	16:45	00:15:00	89.2
21/06/2014	17:00	00:15:00	86
21/06/2014	17:15	00:15:00	88.1
21/06/2014	17:30	00:15:00	91.9

21/06/2014	17:45	00:15:00	93.1
21/06/2014	18:00	00:15:00	89.1
21/06/2014	18:15	00:15:00	84
21/06/2014	18:30	00:15:00	95.8
21/06/2014	18:45	00:15:00	96.7
21/06/2014	19:00	00:15:00	92.2
21/06/2014	19:15	00:15:00	78.6
21/06/2014	19:30	00:15:00	91.1
21/06/2014	19:45	00:15:00	93.8
21/06/2014	20:00	00:15:00	94.6
21/06/2014	20:15	00:15:00	90
21/06/2014	20:30	00:15:00	85
21/06/2014	20:45	00:15:00	83.7
21/06/2014	21:00	00:15:00	96.5
21/06/2014	21:15	00:15:00	100.9
21/06/2014	21:30	00:15:00	100
21/06/2014	21:45	00:15:00	99.5
21/06/2014	22:00	00:15:00	99.5
21/06/2014	22:15	00:15:00	99.8
21/06/2014	22:30	00:15:00	100.9

3.4 The measured offsite noise levels are shown in the following table 3:

Table 3: Offsite Noise Measurements

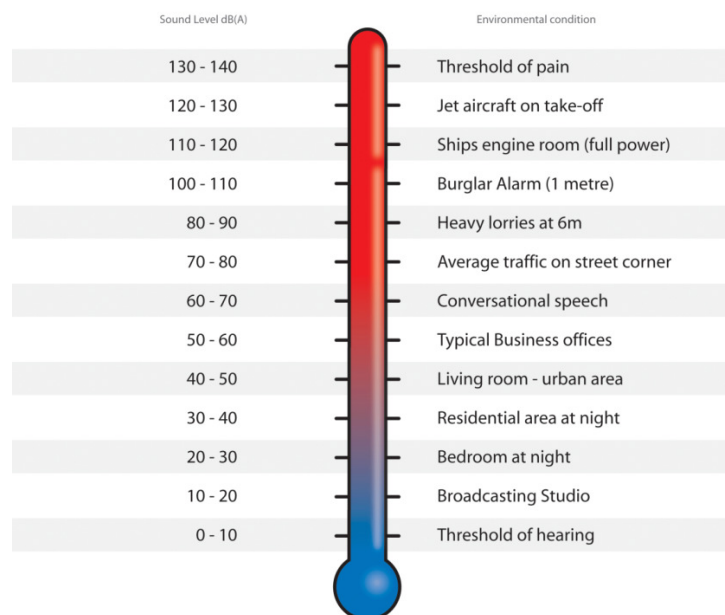
Location	Start Time	Duration	L _{Aeq} dB	Notes
Victoria Gardens	16:41	5 mins	66.7	50Hz Peaking at 90dB
Granville Road	17:39	5 mins	62.7	40Hz Peaking at 89dB
Victoria Gardens	17:55	5 mins	68.9	People shouting
158 London Road	18:10	N/A	N/A	Unmeasureable due to background noise
Victoria Gardens	18:35	15 mins	72.8	A bit of people noise, peaks up to 80dB
Victoria Gardens	19:45	15 mins	67.8	People shouting into the mic
Victoria Gardens	21:15	15 mins	74.1	Helicopter, police and people noise
Victoria Gardens	21:30	15 mins	74.7	Helicopter influencing, request to go to Granville location
Victoria Gardens	21:45	15 mins	74.1	Helicopter influencing noise measurement, peaking at 70dB with no music
Victoria Gardens	22:00	15 mins	74.3	Helicopter influencing noise measurement
Victoria Gardens	22:15	15 mins	73.6	Helicopter influencing noise measurement
Victoria Gardens	22:30	15 mins	74.7	Helicopter influencing noise measurement

3.5 It is understood that no noise complaints were received during the sound propagation tests. A total of 7 noise complaints were received via the event telephone line and a further 3 complaints relating to music noise were received directly by Leicester City Council.

3.6 Further details of the noise complaints received are not available at the time of writing.

Appendix A / Glossary of Terms

- A.1 Noise is defined as unwanted sound. The range of audible sound is from 0dB to 140dB, which is taken to be the threshold of pain. The sound pressure detected by the human ear covers an extremely wide range. The decibel (dB) is used to condense this range into a manageable scale by taking the logarithm of the ratio of the sound pressure and a reference sound pressure.
- A.2 The frequency response of the ear is usually taken to be about 18Hz (number of oscillations per second) to 18,000Hz. The ear does not respond equally to different frequencies at the same level. It is more sensitive in the mid-frequency range than at the lower and higher frequencies, and because of this, the low and high frequency component of a sound are reduced in importance by applying a weighting (filtering) circuit to the noise measuring instrument. The weighting which is most used and which correlates best with the subjective response to noise is the dB(A) weighting. This is an internationally accepted standard for noise measurements.
- A.3 The ear can just distinguish a difference in loudness between two noise sources when there is a 3dB(A) difference between them. Also when two sound sources of the same noise level are combined the resultant level is 3dB(A) higher than the single source. When two sounds differ by 10dB(A) one is said to be twice as loud as the other.
- A.4 The subjective response to a noise is dependent not only upon the sound pressure level and its frequency, but also its intermittency. Various indices have been developed to try and correlate annoyances with the noise level and its fluctuations. The parameter used for this measure is Equivalent Continuous Sound Pressure Level (L_{Aeq}). The A-weighted sound pressure level of a steady sound that has, over a given period, the same energy as the fluctuating sound under investigation. It is in effect the energy average level over the specified measurement period (T) and is the most widely used indicator for environmental noise. A few examples of noise of various levels are given right.





Vanguardia Limited, 21 Station Road West, Oxted, Surrey, RH8 9EL

Tel +44 (0) 1883 718690 Fax +44 (0) 8700 516196 www.vanguardiaconsulting.co.uk

registered in England: 0566 6276