# The Hope & Anchor London

NOISE IMPACT ASSESSMENT REPORT 20433/NIA1

For :

Vida Craft Ltd 22 Elms Avenue London NW4 2PG

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### REPORT 20433/NIA1

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### APPENDIX A

This report has been prepared by Hann Tucker Associates Limited (HTA) with all reasonable skill, care and diligence in accordance with generally accepted acoustic consultancy principles and the purposes and terms agreed between HTA and our Client. Any information provided by third parties and referred to herein may not have been checked or verified by HTA unless expressly stated otherwise. This document contains confidential and commercially sensitive information and shall not be disclosed to third parties. Any third party relies upon this document at their own risk.

### 1.0 INTRODUCTION

The Hope & Anchor Pub in London is proposed to undergo development as a residential premises.

Hann Tucker Associates have been appointed to undertake an environmental noise survey to measure internal noise to undertake a preliminary assessment of possible noise intrusion from neighbouring commercial premises.

This report presents the survey methodology and findings. The survey data has been used as the basis for various acoustic assessment purposes.

## 2.0 OBJECTIVES

To establish, by means of detailed 48 hour daytime and night-time fully automated noise monitoring, the existing A-weighted (dBA)  $L_{10}$ ,  $L_{90}$ ,  $L_{eq}$  and  $L_{max}$  environmental noise levels at selected accessible indoor positions.

To measure  $L_{eq}$ ,  $L_{90}$  and  $L_{max}$  octave band spectra noise levels for typical daytime and night-time periods at each measurement position in order to obtain a more detailed description of the noise climate.

Based on the results of the noise survey, and with reference to the requirements of the Local Authority, to undertake an assessment of intrusion from adjacent commercial properties and give preliminary recommendations for likely mitigation measures required.

### 3.0 SITE DESCRIPTION

### 3.1 Location

The site is located at The Hope & Anchor, 74 Crowndale Road, London NW1 1TP and falls within Camden Borough Council's jurisdiction. See Location Map below.



Location Map (maps.google.co.uk)

### 3.2 Description

The site is currently a disused pub on the corner of Crowndale Road and Bayham Street. It is bound by Bayham Street to the east, Crowndale Road to the south, residential premises to the north and the Koko music venue to the west. The existing structure is ground plus two stories high and is structurally joined to Koko. See Site Plan below.



Site Plan (maps.google.co.uk)

# 4.0 ACOUSTIC TERMINOLOGY

For an explanation of the acoustic terminology used in this report please refer to Appendix A enclosed.

### 5.0 METHODOLOGY

The survey was undertaken by Tony Trup BMus(Hons), PgDip, AMIOA.

### 5.1 Procedure

Fully automated environmental noise monitoring was undertaken from approximately 17:45 hours on 20 June 2014 to 17:45 hours on 22 June 2014.

Due to the nature of the survey, i.e. unmanned, it is not possible to accurately comment on the weather conditions throughout the entire survey period. However at the beginning and end of the survey period the wind conditions were calm. The sky was generally cloudy. We understand that generally throughout the survey period the weather conditions were similar to this. These conditions are considered suitable for obtaining representative measurement results.

Measurements were taken continuously of the A-weighted (dBA) and spectral  $L_{10}$ ,  $L_{90}$ ,  $L_{eq}$  and  $L_{max}$  sound pressure levels over 5 minute periods.

### 5.2 Measurement Positions

The noise level measurements were undertaken at 2No. positions at the development site. The measurement positions are described in the table below.

| Position No | Description   |  |  |  |
|-------------|---|--|--|--|
| 1           | The sound level meter was positioned in an existing bedroom at second floor level. The bedroom shares a party wall with Koko and has a window overlooking a courtyard to the rear of the venue. Windows were shut for the duration of the survey. |  |  |  |
| 2           | The sound level meter was positioned in an existing bedroom at the front of the premises, with windows overlooking Crowndale Road. Windows were shut for the duration of the survey.  |  |  |  |

The positions were selected in order to assess typical worst case noise intrusion from the music venue. The positions are shown on the plan below.



Plan Showing Unmanned Measurement Positions (Madigan Browne Architects)

### 5.3 Instrumentation

| Description   | Manufacturer | Туре   | Serial Number | Latest Verification          |
|---|--------------|--------|---------------|------------------------------|
| Position 1<br>Type 1<br>Data Logging<br>Sound Level Meter | Larson Davis | 824    | 3824          | LD calibration on 16/10/2012 |
| Position 1<br>Type 1<br>½" Condenser<br>Microphone        | PCB          | 377B02 | 107843        | LD calibration on 16/10/2012 |
| Position 2<br>Type 1<br>½" Condenser<br>Microphone        | PCB          | 377B02 | 106047        | LD calibration on 14/03/2013 |
| Position 2<br>Type 1<br>Data Logging<br>Sound Level Meter | Larson Davis | 824    | 3701          | LD calibration on 14/03/2013 |
| Type 1 Calibrator   | Larson Davis | CAL200 | 3082          | LD calibration on 18/03/2014 |

The instrumentation used during the survey is presented in the table below:

Each sound level meter, including the extension cable, was calibrated prior to and on completion of the surveys. No significant changes were found to have occurred (no more than 0.1dB).

Each sound level meter was located in an environmental case with the microphone connected to the sound level meter via an extension cable. Each microphone was fitted with a Larson Davis windshield.

### 6.0 **RESULTS**

The results have been plotted on Time History Graphs 20433/TH1.1 to 20433/TH1.4 enclosed presenting the 5 minute A-weighted (dBA)  $L_{90}$ ,  $L_{eq}$  and  $L_{max}$  levels and the 5 minute  $L_{eq}$  noise levels in the 63Hz octave band at each measurement position throughout the duration of the survey.

### 7.0 CRITERIA

Camden borough Council's policies regarding the acceptability of sites adjoining places of entertainment is contained in their Unitary Development Plan.

Table D in Appendix 1 of Camden's Unitary Development Plan presents noise levels at residential sites adjoining places of entertainment at which planning permission will not be granted. See below.

| Noise levels from places of entertainment on adjoining residential sites at which planning permission will <u>not</u> be granted. |                 |               |  |  |  |  |  |  |
|---|-----------------|---------------|--|--|--|--|--|--|
| Noise<br>description and<br>location of<br>measurement  | Period          | Time          | Sites adjoining places of entertainment  |  |  |  |  |  |
| Noise at 1 metre<br>external to a<br>sensitive façade   | Day and evening | 07:00 – 23:00 | L <sub>Aeq.</sub> 5m shall not increase by more than 5dB*  |  |  |  |  |  |
| Noise at 1 metre<br>external to a<br>sensitive façade   | Night           | 23:00 - 07:00 | L <sub>Aeq</sub> ,5m shall not increase by more than 3dB*  |  |  |  |  |  |
| Noise inside any<br>living room of any<br>noise sensitive<br>premises, with<br>the windows open<br>or closed                      | Night           | 23:00 – 07:00 | L <sub>Aeq</sub> ,5m (in the 63Hz Octave band<br>measured using the "fast" time<br>constant) should show no increase in<br>dB* |  |  |  |  |  |
| * As compared to the same measure, from the same position, and over a comparable period, with no entertainment taking place.      |                 |               |  |  |  |  |  |  |

# 8.0 DISCUSSION OF RESULTS

We understand Koko's operating hours over the weekend were approximately 21:00 to 04:00 hours. We visited site on Friday night at approximately 23:00 hours to gain a subjective understanding of the noise impact of the venue.

While on site, it was noted that noise levels close to Position 1 were dominated by structure-borne venue noise, primarily being transferred through the party wall. Some airborne noise break-in was also noted to be coming through the window overlooking Koko's rear courtyard.

Venue noise at the front of the premises, close to Position 2, was noted to be lower, and overall noise levels were subjectively judged to be dominated by airborne street noise from road traffic and pedestrians.

The results of our survey indicate that on the Friday and Saturday night, the  $L_{Aeq(5min)}$  noise levels measured at Position 1 increased by approximately 15dB in the 63Hz octave band during venue operating hours. The noise levels measured therefore do not comply with Camden's requirements.

The noise levels measured at Position 2 showed no apparent sustained substantial increase in noise levels at 63Hz during venue operating hours and as such could be considered to meet Camden's requirements, based solely on the events at Koko during the weekend we surveyed.

### 9.0 MITIGATION MEASURES

Noise transfer on site was noted to be primarily through the party wall to Koko. In order to bring the noise levels into compliance with the Local Authority's requirements, it would be necessary to fully structurally isolate the proposed residential premises from the Koko building structure.

Given that we understand only the outer walls are being retained and that there is proposed to be a new-build construction within, complete isolation of this new build element from the structure of Koko through the use of structural bearings is likely to be the most effective and realistic measure for compliance with Camden's requirements as detailed within Section 7.0.

In the absence of full structural isolation, noise through the structure may be reduced with the addition of isolated wall linings, ceilings, and floating floor to living rooms and bedrooms (please see our letter dated 23 June 2014).

### 10.0 CONCLUSIONS

A detailed 48 hour daytime and night-time fully automated noise survey has been undertaken in order to establish the currently prevailing internal noise climate around the site, during worst case operation of the neighbouring music venue.

Noise intrusion criteria have been recommended based on the results of the noise survey and with reference to the requirements of the Local Authority.

Music venue noise break-in is in excess of Camden's requirements, and potential mitigation measures have been discussed.

Prepared by Tony Trup Assistant Consultant HANN TUCKER ASSOCIATES

Checked by Andrew Fermer Senior Associate HANN TUCKER ASSOCIATES

# Appendix A

The acoustic terms used in this report are as follows:

- dB : Decibel Used as a measurement of sound pressure level. It is the logarithmic ratio of the noise being assessed to a standard reference level.
- dBA : The human ear is more susceptible to mid-frequency noise than the high and low frequencies. To take account of this when measuring noise, the 'A' weighting scale is used so that the measured noise corresponds roughly to the overall level of noise that is discerned by the average human. It is also possible to calculate the 'A' weighted noise level by applying certain corrections to an un-weighted spectrum. The measured or calculated 'A' weighted noise level is known as the dBA level.

Because of being a logarithmic scale noise levels in dBA do not have a linear relationship to each other. For similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.

L<sub>10</sub> & L<sub>90</sub>: If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The Ln indices are used for this purpose, and the term refers to the level exceeded for n% of the time, hence L<sub>10</sub> is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly, L<sub>90</sub> is the average minimum level and is often used to describe the background noise.

It is common practice to use the  $L_{10}$  index to describe traffic noise, as being a high average, it takes into account the increased annoyance that results from the non-steady nature of traffic noise.

L<sub>eq</sub> : The concept of L<sub>eq</sub> (equivalent continuous sound level) has up to recently been primarily used in assessing noise in industry but seems now to be finding use in defining many other types of noise, such as aircraft noise, environmental noise and construction noise.

 $L_{eq}$  is defined as a notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the actual, fluctuating sound measured over that period (e.g. 1 hour).

The use of digital technology in sound level meters now makes the measurement of  $L_{eq}$  very straightforward.

 $L_{max} : L_{max} \text{ is the maximum sound pressure level recorded over the period stated. } L_{max} \text{ is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the L_{eq} noise level.}$ 

# Hope & AnchorLAmaxPosition 1LAeqLamax, Laeq and Lago Noise LevelsLAeqFriday 20/06/2014 - Sunday 22/06/2014LA90



Interval Start Time/Day

Time History Graph 20433/NTH1.1





Interval Start Time/Day

Hann Tucker Associates

Time History Graph 20433/TH1.2

# Hope & Anchor Position 1 L<sub>eq</sub> Noise Levels (63Hz Octave Band) Friday 20/06/2014 - Sunday 22/06/2014



Interval Start Time/Day

# Hope & Anchor Position 2 L<sub>eq</sub> Noise Levels (63Hz Octave Band) Friday 20/06/2014 - Sunday 22/06/2014



Interval Start Time/Day