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REPORT No. 200950/1

106/109 SAFFRON HILL
LONDON
EC1N 8QS

ENVIRONMENTAL NOISE
SURVEY REPORT

PREPARED: 4TH JANUARY 2011

Presented By: Geoff Davison MIOA

CONTENTS

1.0 Introduction

1.1 CIWEM has commissioned Noico Ltd to conduct a noise survey at 106/109 Saffron Hill, London EC1N 8QS.

1.2 The purpose of the survey is to obtain statistical noise data and to determine the background noise levels at the site. Based on the noise survey data, noise criteria are to be established for limiting noise emission from the mechanical plant installations serving the premises. The noise criteria are to be set in accordance with the requirements of the local planning authority (London Borough of Camden Council).

2.0 Instrumentation

2.1 A precision grade Norsonic 118 'Type 1' Integrating Sound Level Meter was used for the survey. This was equipped with an environmental microphone and extension cable. The instrument was powered by an external battery and stored in a weatherproof case.

2.2 The instrument was calibrated prior and subsequent to use with no calibration drift recorded.

3.0 Survey Details

3.1 Location: The environmental noise analyser microphone was located externally on the roof of the premises largely away from existing plant. This position was chosen as it was considered to be representative of the background noise environment that exists at the nearest noise affected properties. Note, from the observations made on site, the nearest noise affected properties are considered to be on the opposite side of the road on Saffron Hill itself. Note, the exact position of the nearest noise-affected properties is to be confirmed by the local planning authority, prior to final design of any necessary mechanical plant noise control measures.

3.2 Period: Monitoring was carried out continuously from approximately 13:40 hrs on the 8th December 2010 through to 13:40 hrs on the 9th December 2010. The instrument was set up to monitor noise levels continuously and store data in fifteen minute intervals.

3.3 Weather: The prevailing weather condition throughout the majority of the survey period was satisfactory for noise monitoring, being dry, cold and with little to a moderate breeze. Windspeed, although not recorded, was considered to be less than 5 m/s throughout the survey period.

3.4 Site Noise Characteristics: The ambient noise level was characterised by road traffic noise in the local area and in particular along Clerkenwell Road and Farringdon Road. Additionally, noise from mechanical plant serving adjacent buildings was also audible, and is likely to be contributing to the ambient noise level in the area. It is thought that no unusual events occurred during the survey period and the data are considered to be a true representation of ambient noise levels.

4.0 Survey Results

4.1 The results of the environmental survey are presented in graphical and numerical format in the attached appendices, showing the recorded values of L_{Aeq} and L_{A90}.

4.2 See Appendix 1 for a glossary of terms.

4.3 With reference to the measured data, the minimum background noise level measured during the survey period was:

Daytime (07:00 to 23:00hrs)	- 48.6 L_{A90}
Night time (23:00 to 07:00hrs)	- 46.5 L_{A90}

5.0 Environmental Noise Level Criteria

5.1 Criteria for mechanical services noise emission are normally based upon the prevailing level of background noise in the period of concern and may be set against this to a level as normally defined by the local planning authority.

5.2 London Borough of Camden Council has advised that noise arising from fixed plant installations should not cause an increase in the existing minimum background noise level (as expressed as a L_{A90}) at the nearest noise affected property. In practical terms, this means that the noise arising from the plant should be at least 5 dB(A) below the minimum background noise level. The local authority also confirmed that tonal contributions from plant should be kept to a minimum wherever possible.

5.3 To conform to the above criteria, and in accordance with the minimum background noise levels measured during the survey (detailed summarised in 4.3 above), noise from the proposed plant installations should not exceed the following value.

Daytime plant operation (07:00 to 23:00hrs)	- 43.6 dB L_{Aeq}
Night time plant operation (23:00 to 07:00hrs)	- 41.5 dB L_{Aeq}

Note: These levels must be achieved cumulatively with all plant operating, and as measured at 1 metre from the window of the nearest affected property.

6.0 Conclusion

6.1 A background noise level survey has been carried out at 106/109 Saffron Hill, London EC1N 8QS.

6.2 Based upon the survey results and discussions with the local planning authority, criteria applicable to noise from the mechanical services plant have been established.

Appendix 1 - Glossary of Terms

Decibel, dB	A unit of level derived from the logarithm of the ratio between the value of a quantity and a reference value. For sound pressure level (Lp) the reference quantity is $2x10^{-5}$ N/m^2. The sound pressure level existing when microphone measured pressure is $2x10^{-5}$ N/m^2 is 0 dB, the threshold of hearing.
L	Instantaneous value of Sound Pressure Level (Lp).
Frequency	Is related to sound pitch; frequency equals the ratio between velocity of sound and wavelength.
A weighting	Arithmetic corrections applied to values of Lp according to frequency. When logarithmically summed for all frequencies, the resulting single "A weighted value" becomes comparable with other such values from which a comparative loudness judgement can be made, then, without knowledge of frequency content of the source.
$L_{eq,T}$	Equivalent continuous level of sound pressure which, if it actually existed for the integration time period T of the measurement, would possess the same energy as the constantly varying values of Lp actually measured.
$L_{Aeq,T}$	Equivalent continuous level of A weighted sound pressure which, if it actually existed for the integration time period, T, of the measurement would possess the same energy as the constantly varying values of Lp actually measured.
$L_{n,T}$	Lp which was exceeded for n% of time, T.
$L_{An,T}$	Level in dBA which was exceeded for n% of time, T.
$L_{max,T}$	The instantaneous maximum sound pressure level which occurred during time, T.
$L_{Amax,T}$	The instantaneous maximum A weighted sound pressure level which occurred during time, T.
Background Noise Level	The value of $L_{A90,T}$, ref. BS4142:1997.
Traffic Noise Level	The value of $L_{A10,T}$.
Specific Noise Level	The value of $L_{Aeq,T}$ at the assessment position produced by the specific noise source, ref. BS4142:1997.
Rating Level	The specific noise level, corrected to account for any characteristic features of the noise, by adding a 5 dBA penalty for any tonal, impulsive or irregular qualities, ref. BS4142:1997.
Specific Noise Source	The noise source under consideration when assessing the likelihood of complaint.
Assessment Position	Unless otherwise noted, is a point at 1 m from the façade of the nearest affected sensitive property.

Appendix 2 - Environmental Noise Monitoring Data

Date	LAeq	LA90
(2010/12/08 13:37:26.00)	60.6	54.1
(2010/12/08 13:52:29.00)	59.2	53.6
(2010/12/08 14:07:31.00)	58.1	53.5
(2010/12/08 14:22:34.00)	57	53
(2010/12/08 14:37:37.00)	59.9	52.8
(2010/12/08 14:52:40.00)	57.1	53.2
(2010/12/08 15:07:43.00)	58.4	53.8
(2010/12/08 15:22:46.00)	56.9	53.3
(2010/12/08 15:37:49.00)	57.1	53.6
(2010/12/08 15:52:53.00)	58.5	53.8
(2010/12/08 16:07:56.00)	65	53.3
(2010/12/08 16:22:59.00)	57.8	53.2
(2010/12/08 16:38:02.00)	57.8	53.3
(2010/12/08 16:53:05.00)	55.9	53.3
(2010/12/08 17:08:08.00)	55.9	53
(2010/12/08 17:23:11.00)	57.9	53.2
(2010/12/08 17:38:14.00)	57.8	53
(2010/12/08 17:53:17.00)	56.4	52.8
(2010/12/08 18:08:20.00)	59.8	53
(2010/12/08 18:23:23.00)	61.6	53
(2010/12/08 18:38:26.00)	58.2	52.9
(2010/12/08 18:53:29.00)	57.8	52.9
(2010/12/08 19:08:32.00)	54.6	52
(2010/12/08 19:23:35.00)	55	52.1
(2010/12/08 19:38:38.00)	56.3	52.4
(2010/12/08 19:53:41.00)	55.9	52.2
(2010/12/08 20:08:44.00)	57	52
(2010/12/08 20:23:47.00)	53.9	51.2
(2010/12/08 20:38:50.00)	53.4	51
(2010/12/08 20:53:53.00)	53.9	51.3
(2010/12/08 21:08:56.00)	52.8	51
(2010/12/08 21:23:59.00)	53.2	51.2
(2010/12/08 21:39:02.00)	54.3	51.3
(2010/12/08 21:54:05.00)	54.1	51.5
(2010/12/08 22:09:08.00)	53.2	51.3
(2010/12/08 22:24:11.00)	52.9	50.9
(2010/12/08 22:39:14.00)	53.1	50.8
(2010/12/08 22:54:17.00)	51.3	48.6
(2010/12/08 23:09:20.00)	52	48.7
(2010/12/08 23:24:23.00)	49.9	48.4
(2010/12/08 23:39:26.00)	51.5	48.8
(2010/12/08 23:54:29.00)	51	48.2
(2010/12/09 00:09:32.00)	50.5	48.3

(2010/12/09 00:24:35.00)	49.7	47.9
Date	**LAeq**	**LA90**
(2010/12/09 00:39:38.00)	49.8	47.8
(2010/12/09 00:54:41.00)	51.4	47.7
(2010/12/09 01:09:44.00)	49.2	47.5
(2010/12/09 01:24:47.00)	50.8	47.3
(2010/12/09 01:39:50.00)	49.2	47.2
(2010/12/09 01:54:53.00)	49.6	47.2
(2010/12/09 02:09:56.00)	49.4	47.1
(2010/12/09 02:24:59.00)	49.9	47.1
(2010/12/09 02:40:02.00)	49.2	46.9
(2010/12/09 02:55:05.00)	49.4	46.6
(2010/12/09 03:10:08.00)	49.2	46.5
(2010/12/09 03:25:11.00)	48.6	46.8
(2010/12/09 03:40:14.00)	49	46.8
(2010/12/09 03:55:17.00)	49.2	47.2
(2010/12/09 04:10:20.00)	48.7	46.8
(2010/12/09 04:25:23.00)	49.9	47.1
(2010/12/09 04:40:26.00)	49.7	47
(2010/12/09 04:55:29.00)	51.3	47.7
(2010/12/09 05:10:32.00)	50.5	47.8
(2010/12/09 05:25:35.00)	51.4	47.8
(2010/12/09 05:40:38.00)	51	48.3
(2010/12/09 05:55:41.00)	55.4	48.9
(2010/12/09 06:10:44.00)	54.2	49.3
(2010/12/09 06:25:47.00)	53.3	49.9
(2010/12/09 06:40:50.00)	54.1	50.2
(2010/12/09 06:55:53.00)	56.1	49.7
(2010/12/09 07:10:56.00)	56.4	51.2
(2010/12/09 07:25:59.00)	56.3	51.7
(2010/12/09 07:41:02.00)	55.4	52.2
(2010/12/09 07:56:05.00)	56.5	52.7
(2010/12/09 08:11:08.00)	56.7	52.7
(2010/12/09 08:26:11.00)	60.8	53.4
(2010/12/09 08:41:14.00)	64.9	53
(2010/12/09 08:56:17.00)	55.8	53
(2010/12/09 09:11:20.00)	58.9	53.9
(2010/12/09 09:26:23.00)	56.3	53.4
(2010/12/09 09:41:26.00)	56.9	52.9
(2010/12/09 09:56:29.00)	56.2	52.5
(2010/12/09 10:11:32.00)	55.9	52.3
(2010/12/09 10:26:35.00)	57.4	52.5
(2010/12/09 10:41:38.00)	57.5	52.9
(2010/12/09 10:56:41.00)	59.4	53.9
(2010/12/09 11:11:44.00)	58.2	53
(2010/12/09 11:26:47.00)	59.2	53.5

(2010/12/09 11:41:50.00)	57.5	53
Date	**LAeq**	**LA90**
(2010/12/09 11:56:53.00)	56.7	53.1
(2010/12/09 12:11:56.00)	58.3	54
(2010/12/09 12:26:59.00)	61.4	56.3
(2010/12/09 12:42:02.00)	58.9	55.4
(2010/12/09 12:57:05.00)	63.1	59.2
(2010/12/09 13:12:08.00)	65.5	58
(2010/12/09 13:27:11.00)	58.6	54.9
(2010/12/09 13:42:14.00)	63.5	56

Figure 1

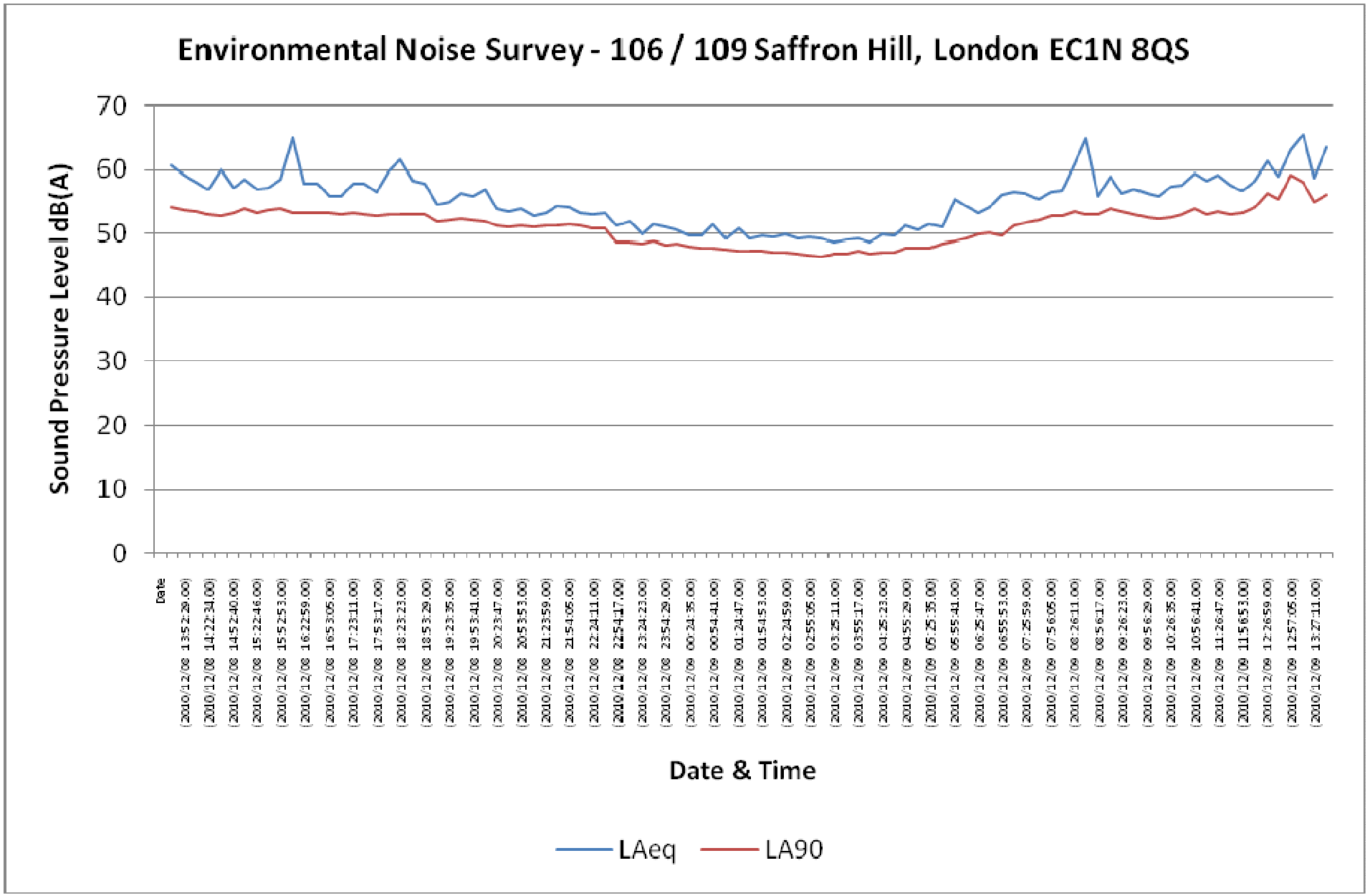
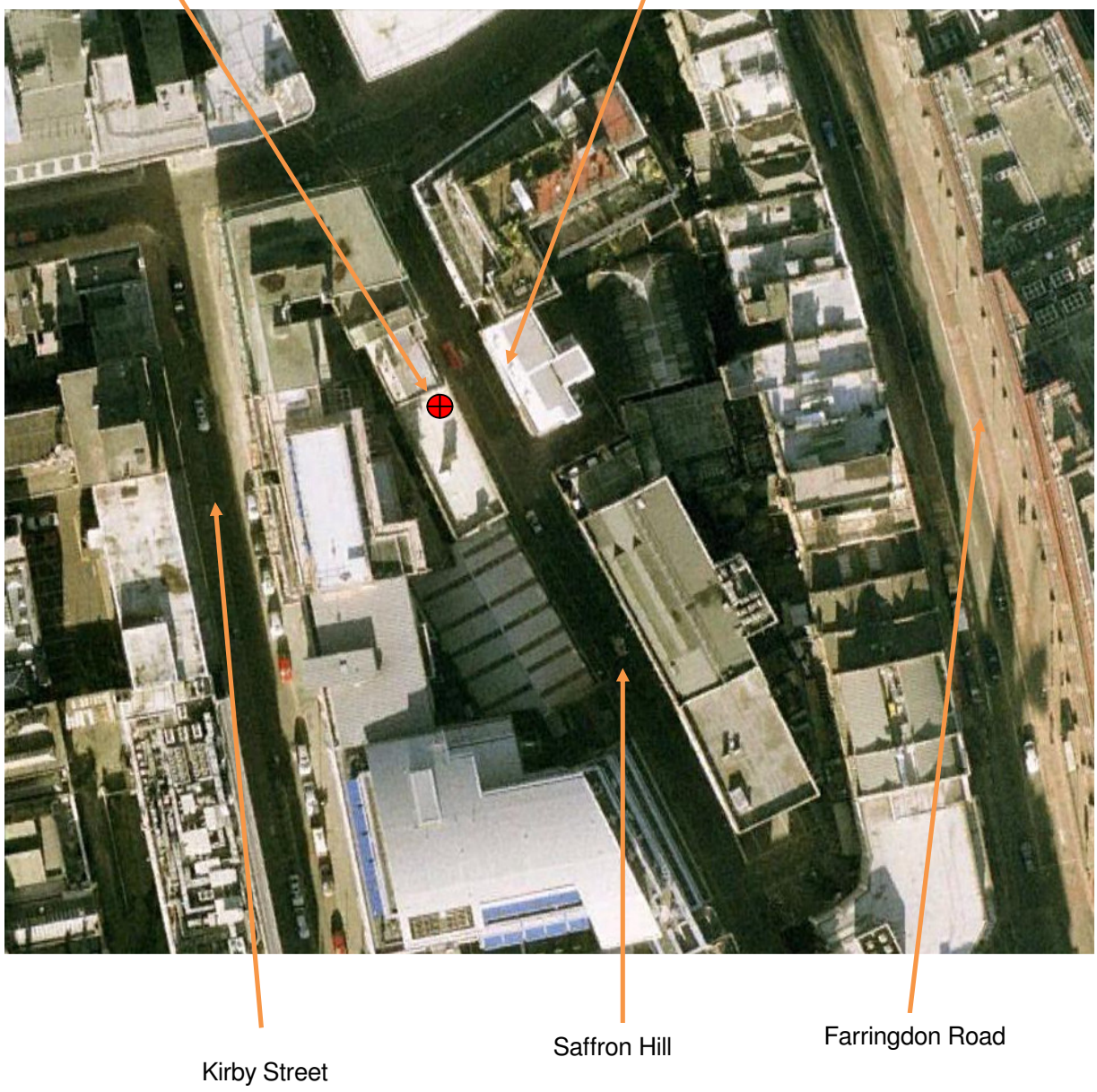

Environmental Noise Survey - 106 / 109 Saffron Hill, London EC1N 8QS
Sound Pressure Level dB(A)
70
60
50
40
30
20
10
0
Date & Time
LAeq
LA90

Figure 2



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