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24 HOUR NOISE LEVEL SURVEY CARRIED OUT ON THE

REAR ROOF OF THE PREMISES AT NO. 22 HANWAY STREET, LONDON W1

AND A REPORT ON THE NOISE CONTROL MEASURES

REQUIRED TO MINIMISE THE NOISE IMPACT

OF ANY PROPOSED NEW AIR CONDITIONING UNITS

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Client : Ingleton Wood LLP/Mr Justin Harish Patel
Project : 22 Hanway Street, London W1
Emtec Ref. : QF5059/PF2922
Date : 23rd June 2006

QF5059/PF2922

EMTEC PRODUCTS LTD.

24 HOUR NOISE LEVEL SURVEY CARRIED OUT ON THE REAR ROOF OF THE PREMISES AT NO. 22 HANWAY STREET, LONDON W1 AND A REPORT ON THE NOISE CONTROL MEASURES REQUIRED TO MINIMISE THE NOISE IMPACT OF ANY PROPOSED NEW AIR CONDITIONING UNITS

1.0. INTRODUCTION

This report details the results of a 24 hour noise survey carried out on the second floor rear roof area at the back of the premises at No. 22 Hanway Street, London W1.

The objectives of this survey were as follows:

- To establish the existing background noise level at the rear of the site.
- To assess the proposed new Air Conditioning Plant that is to be mounted in the rear lightwell and to recommend areas that may require particular treatment to ensure that the operation of the new plant does not disturb the occupants of the neighbouring residential properties.

This report has been divided into the following sections for ease of analysis:

1.0. INTRODUCTION
2.0. TEST INSTRUMENTATION
3.0. TEST PROCEDURE
4.0. RESULTS
5.0. DISCUSSION OF RESULTS

2.0. TEST INSTRUMENTATION

All measurement equipment used during the survey complied with the requirements of BS4142:1990 "Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas". Details of the equipment are as follows:

Integrating Sound Level Meters	: Bruel & Kjaer type 2231 fitted with a Bruel & Kjaer type 4155 ½ inch condenser microphone.
Statistical Analysis Modules	: Bruel & Kjaer type BZ 7115 capable of computing the percentile levels L1, L10, L50, L90 and L99 and also the Leq level.
Acoustic Calibrator	: Bruel & Kjaer type 4231 electronic calibrator.

Calibration was performed before and after the surveys and found to be, in all cases, +/- 0.1 dB from the reference source.

3.0. TEST PROCEDURE

The survey was conducted during a continuous 24 hour period from 13.32pm on Thursday the 22nd of June 2006 to 13.12pm on Fr5iday the 23rd of June 2006.

Data was continuously acquired throughout the measurement period with the individual averaging time for statistical noise data set to 20 minutes. The following statistical measurements were recorded concurrently:

LA1 - The Sound Pressure Level exceeded for 1% of the measurement period.

LA10 - The Sound Pressure Level exceeded for 10% of the measurement period.

LA50 - The Sound Pressure Level exceeded for 50% of the measurement period.

LA90 - The Sound Pressure Level exceeded for 90% of the measurement period. LA90 is considered to represent the "background noise level" during the measurement period and is used for the assessment of noise to determine the likelihood of complaints (See BS 4142).

LA99 - The Sound Pressure Level exceeded for 99% of the measurement period.

LAeq - The continuous steady state Sound Pressure Level that has the same acoustic energy as the real fluctuating level.

All noise levels recorded were filtered using a standard 'A' Weighting filter.

3.1. Measurement Position

The noise levels were measured at a position on the left hand end of the second floor roof at the rear of the property. The microphone was placed on a tripod that was positioned on the elevated section of the roof next to the large glass roof light.

The microphone was positioned so that it was pointing away from the front section of the building and towards the buildings on the other side of Hanway Place.

The microphone was approximately 1.2 metres above the roof level. The rest of the measurement equipment was located in a weatherproof enclosure with a low impedance cable running from the microphone to the instrumentation.

3.2. Weather Conditions

The weather conditions prevailing during the measurement period were in line with those recommended in BS 4142:1990 with no precipitation and no wind. The weather was bright and clear throughout the daytime and nightime period.

The microphone was protected throughout the tests by an acoustically transparent wind balloon.

4.0. RESULTS

The raw test data, gathered during the 24 hour noise survey, is given in Appendix 'A 'of this report.

The 'A' Weighted Leq levels measured over each 20 minute interval throughout the 24 hour periods (denoted by LAeq, (20 mins)) are displayed as bar graphs on the attached Sketch No. QF/5059/T1 at the back of this report.

The 'A' Weighted percentile levels measured over each 20 minute interval denoted by LA10 (20 mins), LA50 (20 mins) and LA90 (20 mins) are displayed as line graphs on the attached Sketch No. QF/5059/T2 at the back of this report.

4.1. Summary of Results

The table QF/5059/D1 below summarises the noise levels taken over the 24 hour period in terms of the maximum and minimum Sound Pressure Levels recorded.

Table QF/5059/D1 – Summary of Maximum and Minimum Noise Levels

	LA1	LA10	LA50	LA90	LA99	Laeq
Min.	51.1 dBA	48.1 dBA	45.1 dBA	44.1 dBA	43.6 dBA	46.3 dBA
Max.	72.6 dBA	69.6 dBA	67.1 dBA	65.1 dBA	61.1 dBA	67.5 dBA

5.0. DISCUSSION OF RESULTS

The lowest recorded LA_{90} background noise level measured during the survey was 44.1 dBA which occurred in two time periods finishing at 3.32am and 4.52am.

If the mechanical plant associated with the new building is to be run on a 24 hour basis then the noise generated by this plant should not exceed a level 10 dB below this lowest LA_{90} level. The plant should therefore not exceed a noise level of 34 dBA at 1 metre from the nearest residential façade.

If the building is to be used in office hours only (ie: 8.00am to 22.00pm) then the lowest LA_{90} noise level measured was 49.6 dBA which was registered during the two time periods finishing at 8.12am and 8.32am.

If the plant is to be operated only during these hours then all the plant will need to have a combined noise level that does not exceed 40 dBA at 1 metre from the nearest residential façade.

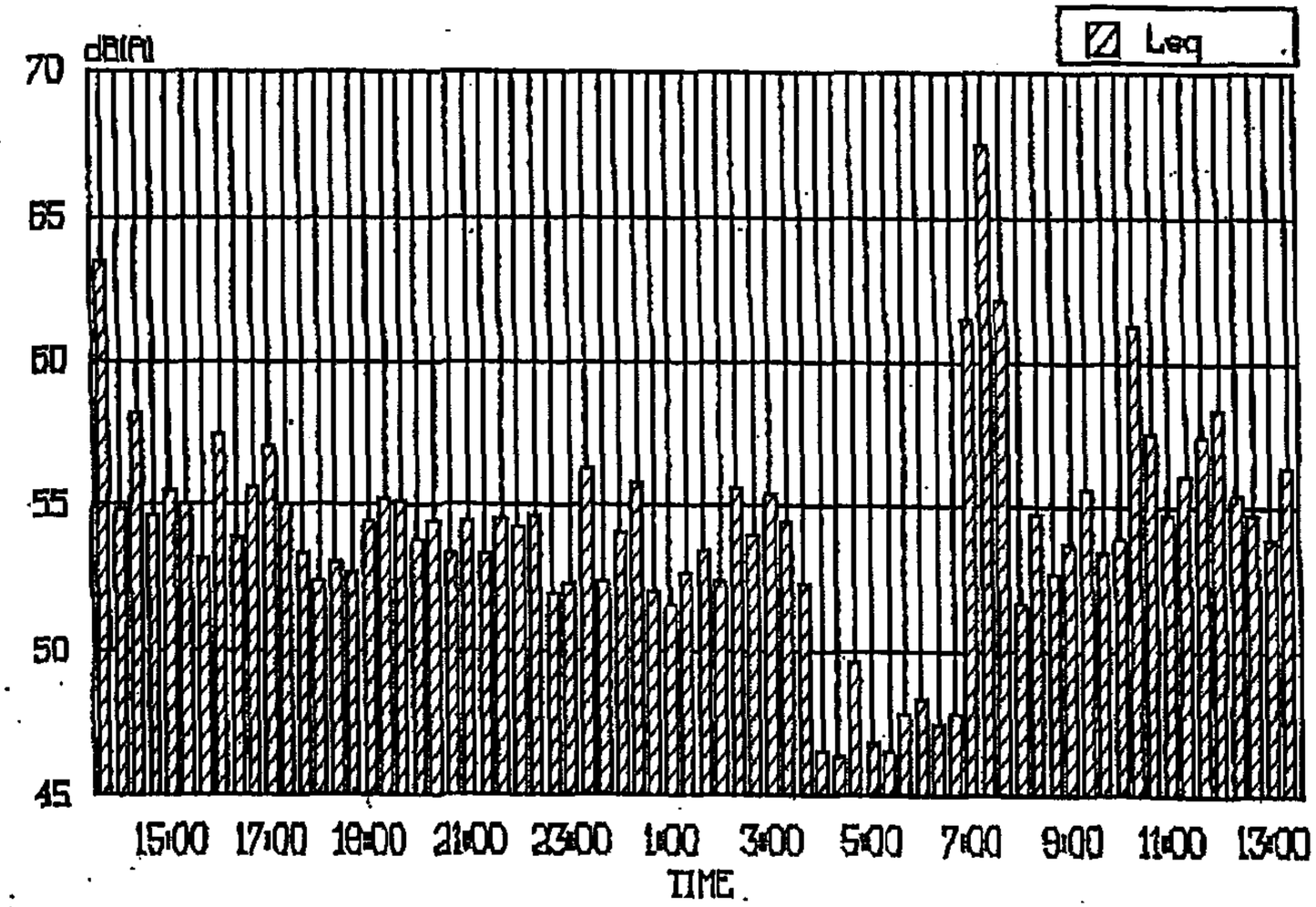
We believe that residential flats exist at No. 24 Hanway Street on both the second and third floor. The noise criteria of either 34 dBA (for 24 hour operation) or 40 dBA (for extended office hours operation) will need to be adhered to with all of any proposed ventilation or air conditioning plant in operation.

If you could forward details of the proposed redevelopment together with particulars of any mechanical plant we would be able to advise further on any acoustic treatment that may be necessary.

EMTEC PRODUCTS LTD

All dimensions in mm unless stated

22 HANWAY STREET, LONDON W1.
22nd to 23rd June 2006



TITLE LAeq Levels	ISSUE DATE: 26/6/06	DRAWN BY: MGR	A B C D E F G H	
CLIENT Ingleton Wood LLP	PF No. 2922	APPROVED BY: MGR	REVISION	
PROJECT 22 Hanway Street, London W1	STATUS Q A M I	DESIGN AUTH: MGR	SK No. QF/5059/T1	

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22 HANWAY STREET, LONDON W1.
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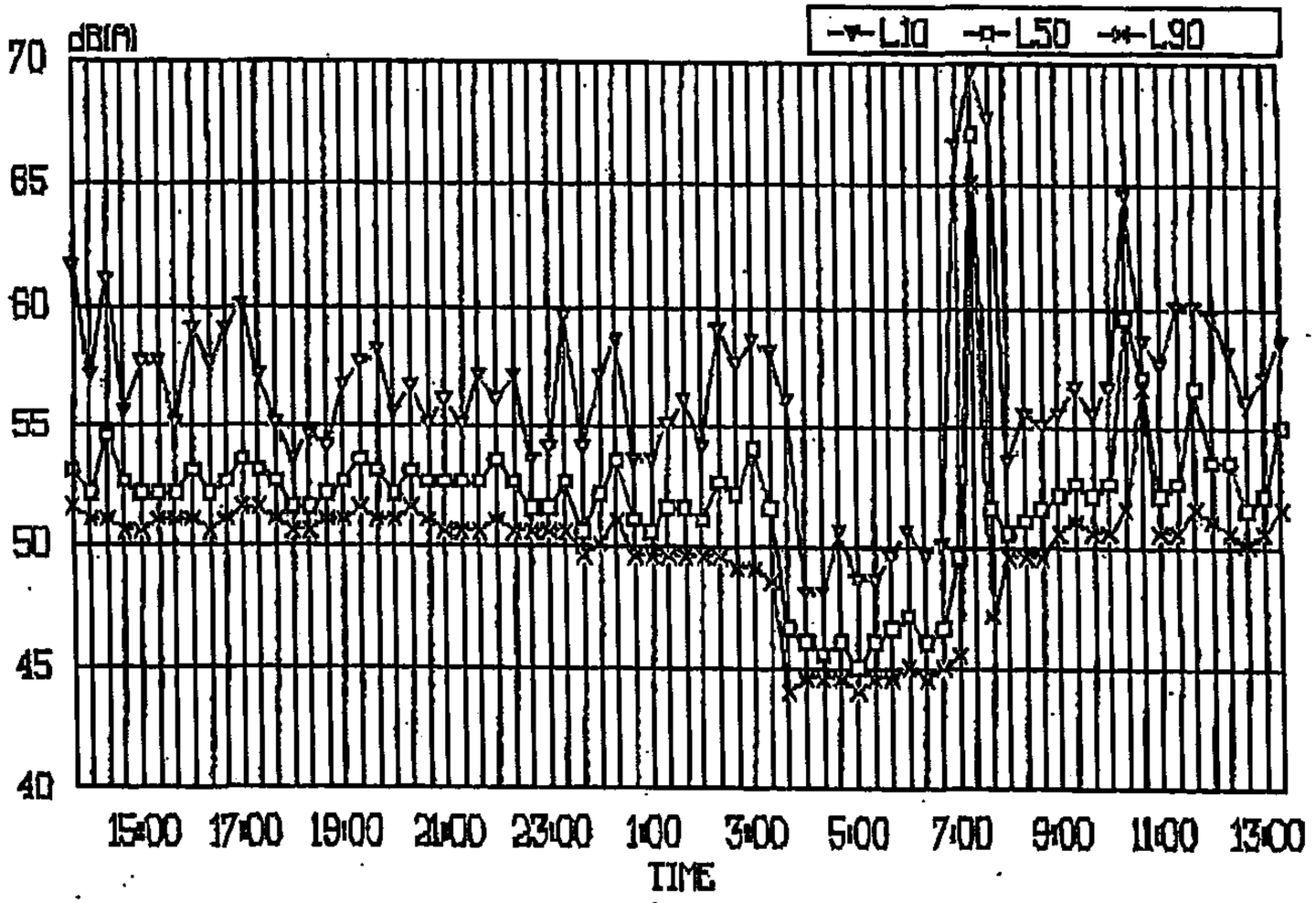

TITLE LA10, LA50 & LA90 Levels	ISSUE DATE: 26/6/06	DRAWN BY: MGR	A B C D E F G H	
CLIENT Ingleton Wood LLP	PF No. 2922	APPROVED BY: MGR	REVISION	
PROJECT 22 Hanway Street, London W1	STATUS Q A M I	DESIGN AUTH: MGR	BK No. QF/5059/T2	

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APPENDIX A

Raw Data – Noise Survey

22nd to 23rd June 2006

NOISE SURVEY DATA FROM BACKGROUND NOISE LEVEL SURVEY CARRIED OUT AT THE REAR OF NO.22 HANWAY STREET, LONDON W1.

Project :	22 Hanway Street, London W1.
Client :	Ingleton Wood
Ref :	QF5058
Date :	23rd June 2009

Measure No.	Start Time	MaxP (dBA)	L1 (dBA)	L10 (dBA)	L50 (dBA)	L90 (dBA)	L99 (dBA)	Leq (dBA)
1	13:32	104.5	72.6	61.6	53.1	51.6	50.6	63.4
2	13:52	92.7	64.6	57.1	52.1	51.1	50.1	54.9
3	14:12	100.4	65.6	61.1	54.6	51.1	50.6	58.2
4	14:32	96.6	69.6	55.6	52.6	50.6	50.1	54.7
5	14:52	89.1	62.1	57.6	52.1	50.6	50.1	55.6
6	15:12	83.4	64.6	57.6	52.1	51.1	50.1	55
7	15:32	80.7	61.1	55.1	52.1	51.1	50.6	53.2
8	15:52	91.4	66.1	59.1	53.1	51.1	50.1	57.4
9	16:12	80.3	61.1	57.6	52.1	50.6	49.6	54
10	16:32	86.1	65.1	59.1	52.6	51.1	50.1	55.7
11	16:52	87.4	66.1	60.1	53.6	51.6	50.6	57.1
12	17:12	83.9	64.1	57.1	53.1	51.6	50.6	55
13	17:32	89.6	59.1	55.1	52.6	51.1	50.6	53.4
14	17:52	82.1	59.1	59.6	51.6	50.6	50.1	52.5
15	18:12	81	61.1	54.6	51.6	50.6	50.1	53.1
16	18:32	78.6	59.6	54.1	52.1	51.1	50.6	52.6
17	18:52	84	62.1	56.6	52.6	51.1	50.6	54.5
18	19:12	78.9	63.1	57.6	53.6	51.6	50.6	55.2
19	19:32	86.9	63.1	58.1	53.1	51.1	50.6	55.1
20	19:52	83.1	62.1	55.6	52.1	51.1	50.6	53.6
21	20:12	88.5	61.6	56.6	53.1	51.6	50.6	54.6
22	20:32	86.3	59.6	55.1	52.6	51.1	50.1	53.4
23	20:52	86.1	63.1	56.1	52.6	50.6	50.1	54.5
24	21:12	81.6	60.1	55.1	52.6	50.6	50.1	53.4
25	21:32	84.2	62.6	57.1	52.6	50.6	49.6	54.6
26	21:52	76.7	60.6	58.1	53.6	51.1	49.6	54.3
27	22:12	82.5	63.1	57.1	52.6	50.6	49.6	54.7
28	22:32	84.1	57.6	53.6	51.6	50.6	49.6	52
29	22:52	78.4	57.6	54.1	51.6	50.6	49.6	52.4
30	23:12	86.6	66.1	59.6	52.6	50.6	50.1	56.3
31	23:32	83.4	61.1	54.1	50.6	49.6	49.1	52.5
32	23:52	81.6	62.1	57.1	52.1	50.1	49.1	54.2
33	00:12	82.6	64.1	55.6	53.6	51.1	49.1	55.6
34	00:32	89.1	58.1	59.6	51.1	49.6	49.1	52.1
35	00:52	79.3	57.1	53.6	50.6	49.6	48.6	51.6
36	01:12	77.6	59.6	55.1	51.6	49.6	49.1	52.6
37	01:32	76.6	62.1	59.1	51.6	49.6	48.6	53.5
38	01:52	80.7	60.1	54.1	51.1	49.6	49.1	52.5
39	02:12	82.4	65.1	59.1	52.6	49.6	48.6	55.7
40	02:32	79.4	61.6	57.6	52.1	49.1	48.6	54.1
41	02:52	83.6	63.6	58.6	54.1	49.1	47.1	55.5
42	03:12	79.1	63.1	58.1	51.6	48.6	48.6	54.5
43	03:32	81.2	62.6	56.1	48.6	44.1	43.6	52.3
44	03:52	72.6	51.6	48.1	46.1	44.6	44.1	48.6
45	04:12	75.9	51.1	48.1	46.6	44.6	43.6	48.3
46	04:32	88.6	58.6	50.6	48.1	44.6	43.6	49.7
47	04:52	77.6	54.6	48.6	45.1	44.1	43.6	48.9
48	05:12	87.5	51.6	48.6	46.1	44.6	43.6	48.6
49	05:32	79.6	55.6	49.6	46.6	44.6	44.1	47.6
50	05:52	80.9	54.1	50.6	47.1	45.1	44.6	48.4
51	06:12	86.3	55.6	49.6	46.1	44.6	44.1	47.5
52	06:32	91	54.1	50.1	46.6	45.1	44.1	47.6
53	06:52	88.7	69.1	66.6	49.6	45.6	45.1	61.5
54	07:12	96.3	70.6	69.6	67.1	65.1	61.1	67.5
55	07:32	92.4	69.1	67.6	51.6	47.1	46.1	62.1
56	07:52	84.6	57.1	53.6	50.6	49.6	48.6	51.7
57	08:12	96.2	65.6	55.6	51.1	49.6	49.1	54.6
58	08:32	76.3	58.6	55.1	51.6	49.6	49.1	52.6
59	08:52	83.1	59.6	55.6	52.1	50.6	49.6	53.7
60	09:12	94.4	64.1	59.6	52.6	51.1	50.1	55.7
61	09:32	83.7	60.1	55.6	52.1	50.6	49.6	53.5
62	09:52	84.9	60.6	56.6	52.6	50.6	50.1	54
63	10:12	100.2	70.6	64.6	59.6	51.6	51.1	61.9
64	10:32	85.9	60.6	58.6	57.1	56.6	55.6	57.5
65	10:52	76.9	62.6	57.6	52.1	50.6	49.6	54.6
66	11:12	81.2	64.6	60.1	52.6	50.6	50.1	56.1
67	11:32	80.1	64.6	60.1	56.6	51.6	50.6	57.4
68	11:52	102.9	69.1	59.6	53.6	51.1	50.1	56.4
69	12:12	81.9	69.1	56.1	53.6	50.6	50.1	55.5
70	12:32	85.3	64.6	56.1	51.6	50.1	49.6	54.6
71	12:52	76.2	60.1	57.1	52.1	50.6	49.6	54
72	13:12	90.2	63.6	58.6	55.1	51.6	50.6	58.4