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Project:

Foxtons Kentish Town

Title:

Noise Impact Assessment Report

quietly moving forward

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Client	Icewit Design Partnership
Author	Will Wright BSc(Hons) Acoustic Engineer
Checked	Jon Mudd BEng(Hons) MIOA Director

Revision	Date	Author	Checked
0			

CONTENTS:

1 INTRODUCTION

1.01 Environmental Equipment Corporation Limited has been commissioned by Icewit Design Partnership to undertake a noise assessment of four condenser units to the proposed Foxtons commercial offices at 242 Kentish Town Road.

1.02 This noise assessment has been conducted in accordance with the policies and requirements of Camden Council and is based on a noise survey carried out at the site over a typical weekday period.

1.03 This assessment includes:

- the setting of plant noise limits in accordance with the requirements of Camden Council and national planning policy, standards and guidance; and
- the prediction of noise impacts at the worst affected noise sensitive receptors based on the proposed items of plant and their location.

1.04 This report is prepared solely for Icewit Design Partnership. Environmental Equipment Corporation Limited accepts no responsibility for its use by any third party.

1.05 Whilst every effort has been made to ensure that this report is easy to understand, it is necessarily technical in nature. To assist the reader, an explanation of the terminology used in this report is contained in Appendix A.

2 SITE

2.01 242 Kentish Town Road is a four storey terrace property located in a mixed commercial and residential area of Kentish Town.

2.02 The property is bound by the following:

- North – Adjoining four storey terrace property 244 Kentish Town Road with a commercial ground floor currently serving as a Renoir café, with residential dwellings on the floors above ;
- East – Wolsey Mews roadway, and beyond that is two storey residential property at 25 Wolsey Mews.
- South – Adjoining four storey terrace property 240 Kentish Town Road with a commercial ground floor currently serving as an Oddbins store, with residential dwellings on the floors above; and
- West – Kentish Town Road highway, and beyond that is a four storey corner terrace property with ground and first floors serving as a commercial restaurant McDonald's with commercial offices above.

2.03 This application is for 4 No. Daikin condenser units consisting of 3 No. RZQS100L8V1 units and 1 No. RXS35K unit which are to be located on the first floor flat roof at the rear of the property, as presented in Appendix B.

2.04 The closest noise sensitive receptor to the proposed plant items is the two storey residential property at 25 Wolsey Mews by approximately 8m to the east.

2.05 All other noise sensitive receptors are at a greater distance from the proposed location of the units, or are protected by more screening by the intervening structures, and as such will be subject to lower levels of noise.

3 GUIDANCE

3.01 Local and National Planning Policy for the Camden Council is presented in Appendix C of this document.

3.02 A summary of the pertinent points relating to this application are presented below;

Camden Council's Development Plan Policy 28 (DP28) sets noise level limits for the noise from plant and machinery in Table E and states that plant noise at 1m from the sensitive facade must be 5dB(A) less than the lowest measured background noise level. It goes on to state that tonal noise sources or those with distinct bangs, clicks, clatters and thumps must be 10dB(A) less than the lowest measured background noise level.

4 MEASUREMENTS

4.01 Environmental noise measurements were carried out over a weekday period, between 1515 hours on Thursday 7th May 2015 and concluded 1310 hours the following day, to establish the existing noise levels at the site. The survey methodology and results are set out below.

4.02 Noise measurements have been carried out at the following location, as shown in Appendix B and described as:

- Position 1: located on the rear first floor flat roof at a height of approximately 1.5 metres above the mounting surface. The measurement was not located within 3.5 metres of any reflecting surfaces, other than the mounting surface.

4.03 This location is considered to be representative of the west facing facade of the residential property at 25 Wolsey Mews, the nearest noise sensitive receptor to the proposed plant location.

5 EQUIPMENT

5.01 Equipment for the survey was as follows:-

- Brüel & Kjær type 2238 Integrating Sound Level Meter conforming to Class 1 BS EN 61672, Type 1 BS EN 60804 & BS EN 60651: 1994.
- Brüel & Kjær Condenser Microphone and Connecting Leads.
- Brüel & Kjær Outdoor Microphone Kit, type UA1404.
- Tripod.

5.02 The equipment holds current UKAS or equivalent accreditation and serial numbers as follows:

Sound Level Meter B&K2238	Serial No.	2736836
	Calibration Date	20th June 2013
	Cal Certificate No.	01356/2
½" Condenser Mic. B&K4188	Serial No.	2760436
	Calibration Date	20th June 2013
	Cal Certificate No.	01356/2
Calibrator B&K4231	Serial No.	2389051
	Calibration Date	27th August 2014
	Cal. Certificate No.	01968/1

N.B. Copies of calibration certificates are available upon request.

5.03 The equipment was calibrated both before and after the survey with no difference noted in the levels.

6 RESULTS

6.01 The weather during the survey was suitable for noise measurement, it being dry with little wind for the duration of the survey with partial cloud cover.

6.02 Noise sources at the site include local and distant road traffic. There was occasional distant construction noise during the daytime hours. There were no other significant sources of noise during the survey.

6.03 A list of the levels measured is included in Appendix D and represented graphically in Appendix E.

6.04 A summary of the time averaged ambient levels and lowest measured background levels over the measurement periods are shown in Table 6.1. The minimum L_{A90} is the lowest five minute measurement in the specified period.

Location	Period	Average $L_{Aeq,T}$ – dB	Minimum L_{A90} – dB
Position 1	Day time (0700-1900 hrs)	54	42
	Evening (1900-2300 hrs)	50	41
	Night-time (2300-0700 hrs)	49	36

Table 6.1: Free-Field Measured Ambient and Lowest Background Noise Levels

7 PLANT ASSESSMENT

7.01 This application is for the installation of 4 No. Daikin condenser units consisting of 3 No. RZQS100L8V1 units and 1 No. RXS35K unit which are to be located on the first floor flat roof at the rear of the property. Units are proposed to operate within day and evening times only and will not operate between 2300hrs and 0700hrs.

7.02 Based on the standard requirements of Camden Council and the lowest measured background noise level in each time period, Table 7.1 sets out the recommended noise limits that the proposed items of plant should meet.

7.03 Please note that in accordance with the requirements of Camden Council, the proposed noise limit are based on being 5 dB below the measured background noise level.

Position	Period	Measured Existing $L_{A90,T}$	Proposed Noise Limit L_{Ar}
1	Day	42 dB	37 dB
	Evening	41 dB	36 dB

Table 7.1: Suggested Plant Noise Emission Limits Based on Lowest Measured L_{A90}, Free-field dB

7.04 Note that the limits suggested above are rating levels and as such any design should take into account the acoustic characteristics of the plant. In this instance the proposed units display none of the characteristics whereby the acoustic correction should be applied.

7.05 Assuming the proposed items meet the noise limits set out in Table 7.1 noise will be between the NOEL and the LOAEL with respect to the NPPF.

7.06 The proposed units have the following stated manufacturers sound pressure levels:

- Daikin RZQS100L8V1: 53 dB(A) measured at a distance of 1m
- Daikin RXS35K: 48 dB(A) measured at a distance of 1m

7.07 Predicted noise levels have been calculated at the closest noise sensitive window, the window on the western facade of the residential property at 25 Wolsey Mews. In order to achieve noise limits an acoustic enclosure providing 8dB noise reduction is required to house the units. The enclosure will consist of acoustic panelling and acoustic louvre faces for inlet and outlet air paths.

7.08 Other residential receptors located further from the site will be subject to lower noise levels than those predicted at the above locations.

7.09 Tables 7.2 and 7.3 present the results of worst-case plant noise predictions at the worst-case locations.

Item	Noise Level	Notes
4 No. Daikin Condenser Units	58 dB(A)	Cumulative sound pressure level at 1m
Noise Control Scheme	- 8 dB	Acoustic louvered enclosure
Conformal area Losses over 8 metres	- 14 dB	Distance to closest window
Reflections	+ 0 dB	No additional reflections
Total Noise Level	36 dB(A)	25 Wolsey Mews Residential Window

Table 7.2: 25 Wolsey Mews Residential Window Plant Noise Calculation

Property	Period	Proposed Noise Limit L_{Ar}	Predicted $L_{Aeq,T}$	Exceedance of noise limit
25 Wolsey Mews Residential Window	Daytime	37 dB	36 dB	-1 dB
	Evening	36 dB	36 dB	0 dB

Table 7.3: Assessment of Predicted Noise Levels Based on Proposed Noise Limit, Free-field dB(A)

7.10 It can be seen from the above tables that the noise limits are achieved during the condenser units' proposed operating period of 0700hrs to 2300hrs assuming an acoustic louvered enclosure providing 8dB noise reduction is included in the installation of the units.

7.11 Assuming the above is included in the installation, predicted noise levels will meet the requirements of the Local Authority during all periods of operation and at the closest noise sensitive receptors.

7.12 With respect to the NPPF, achieving the noise limits would be classified as being between the NOEL and the LOAEL.

8 CONCLUSIONS

8.01 Icewit Design Partnership has appointed Environmental Equipment Corporation Limited to undertake a noise assessment for 4 No. proposed Daikin condenser units to serve the offices at the proposed Foxtons at 242 Kentish Town Road.

8.02 The assessment has been carried out in accordance with national planning guidance and the requirements of the Camden Council and is based on an environmental noise survey conducted at the site over a mid-week period.

8.03 A noise assessment has been undertaken to evaluate the potential noise impact of the proposed condensers at the residential property at 25 Wolsey Mews.

8.04 Plant noise limits have been set based on the methodology contained in BS4142, the results of a background noise survey and the requirements of Camden Council to control the noise from the proposed condenser units. In accordance with Camden Council, the noise limit has been set 5 dB below the lowest measured background noise level.

8.05 Predictions have shown that the noise criterion is met at all assessment locations during all periods of the condenser's proposed day and evening time operation, assuming the noise control scheme providing 8dB noise reduction specified in section 7.07 is included in the installation of the units.

8.06 Assessing the site in accordance with the principles of the National Planning Policy Framework has shown that predicted noise levels would be between the level at which no effects are observed to occur, the NOEL, and the lowest observed adverse effect level, the LOAEL.

8.07 On the basis of this assessment it is considered that noise does not pose a material constraint to the operation of the condenser units.

APPENDIX A

GLOSSARY OF TECHNICAL TERMS

TECHNICAL TERMS AND UNITS

Decibel (dB) - This is the unit used to measure sound. The human ear has an approximately logarithmic response to sound over a very large dynamic range (typically 20 micro-Pascals to 100 Pascals). We therefore use a logarithmic scale to describe sound pressure levels, intensities and power levels. The logarithms used are to base 10; hence, an increase of 10 dB in sound pressure level corresponds to a doubling in perceived loudness of the sound.

Sound Power Level (SWL) - This is a function of the noise source alone and is independent of its surroundings. It is a measure of the amount of sound power output measured in decibels.

Sound Pressure Level (SPL) - This is a function of the source and its surroundings and is a measure of the sound pressure at a point in space. For example, a sound pressure level measured at 1 metre from a sound source of certain sound power in reverberant room will not be the same as the sound pressure level a 1 metre from the sound source measured in open space.

Octave and One-Third Octave Bands - The human ear is sensitive to sound over a range of approximately 20 Hz to 20 KHz and is generally more sensitive to medium and high frequencies than to low frequencies. In order to define the frequency content of a noise, the spectrum is divided into frequency bands and the sound pressure level is measured in each band. The most commonly used frequency bands are octave bands, in which the mid frequency of each band is twice that of the band below it. For finer analysis, each octave band may be split into one-third octave bands.

"A" Weighting - A number of frequency weightings have been developed to imitate the ear's varying sensitivity to sound of different frequencies. The most commonly used weighting is the "A" weighting. The "A" weighted SPL can be measured directly or derived from octave or one-third octave band SPLs. The result is a single figure index which gives some idea of the subjective loudness of the sound, but which contains no information as to its frequency content.

Noise Rating (NR) Curves - The "A" weighted sound pressure level cannot be used to define a spectrum or to compare sounds of different frequencies. NR curves convey frequency information in a single-figure index. This is done by defining the maximum permissible sound pressure level at each frequency for each curve. To measure the noise rating of a given environment, the SPL is measured in octave or one-third octave bands and the noise rating is then the highest NR curve touched by the measured levels.

Intermittency and Time-Weighting - The degree of annoyance caused by a noise also depends on its duration and intermittency of a noise. Intermittent, impulsive or repetitive noises tend to be more annoying than continuous noises. Various time-weightings have been derived to measure sounds of differing intermittences and these can be measured directly on modern equipment. The most common time-weightings in use are as follows:-

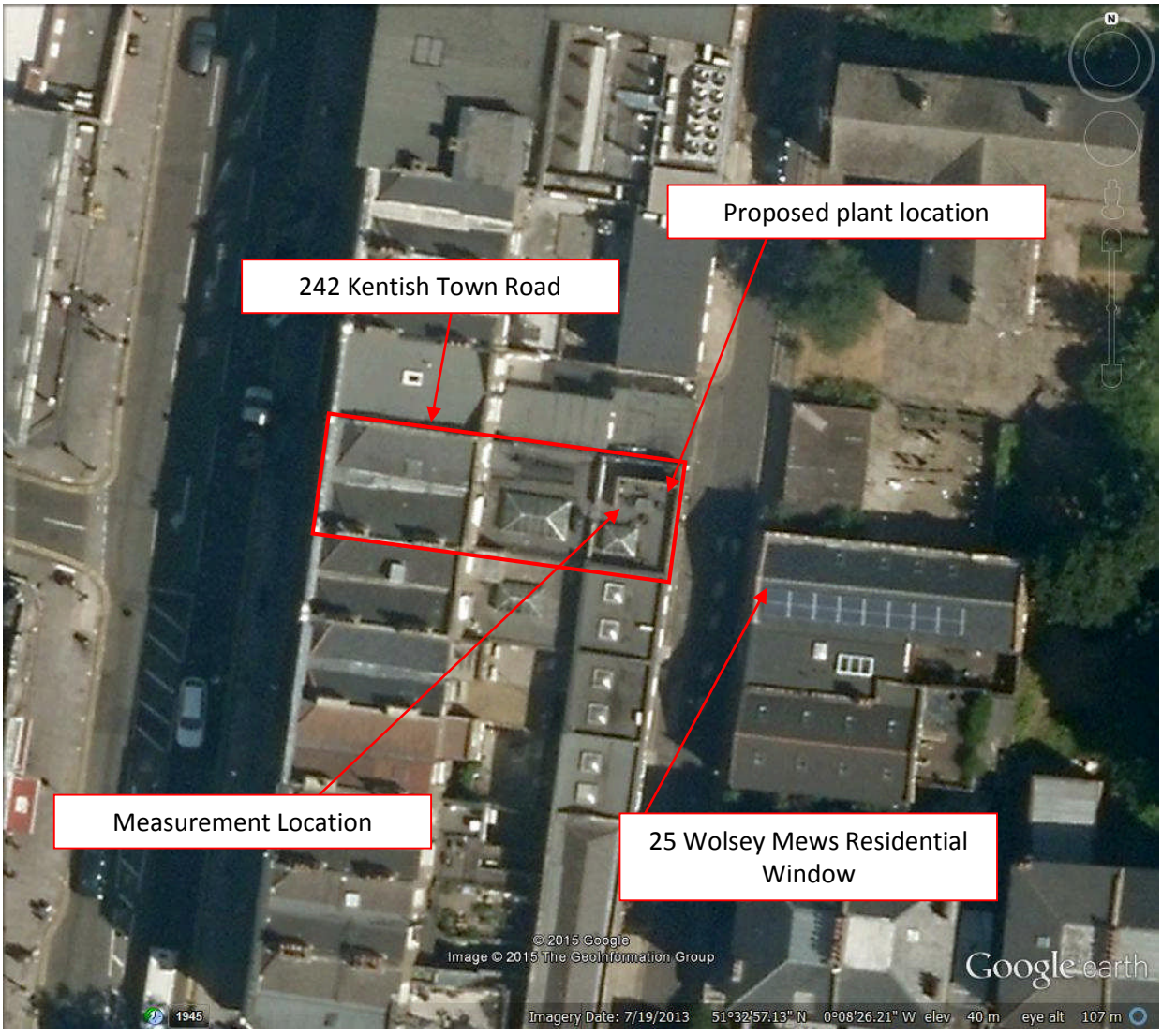
L_{90} This is the sound pressure level exceeded for 90% of the measurement period. It is widely used to measure background noise levels.

L_{10} This is the sound pressure level exceeded for 10% of the measurement period. It is widely used to measure traffic noise. For a given measurement period, the L_{10} level is by definition greater than or equal to the L_{90} level.

L_{eq} The equivalent continuous noise level is often used to measure intermittent noise. It is defined as the notional steady noise level that would contain the same acoustic energy as the varying noise. Because the averaging process used is logarithmic, the L_{eq} level tends to be dominated by the higher noise levels measured.

APPENDIX B

SITE PLAN
&
MEASUREMENT LOCATION



APPENDIX C

PLANNING POLICY AND GUIDANCE

PLANNING POLICY AND GUIDANCE

Camden Development Policies

Policy DP28 - Noise and vibration

The Council will seek to ensure that noise and vibration is controlled and managed and will not grant planning permission for:

a) development likely to generate noise pollution; or
b) development sensitive to noise in locations with noise pollution, unless appropriate attenuation measures are provided.

Development that exceeds Camden's Noise and Vibration Thresholds will not be permitted.

The Council will only grant permission for plant or machinery if it can be operated without cause harm to amenity and does not exceed our noise thresholds.

The Council will seek to minimise the impact on local amenity from the demolition and construction phases of development. Where these phases are likely to cause harm, conditions and planning obligations may be used to minimise the impact.

Below is the table from which this report has set noise limits for the condenser units;

Table E: Noise levels from plant and machinery at which planning permission will not be granted

Noise description and location of measurement	Period	Time	Noise level
Noise at 1 metre external to a sensitive façade	Day, evening and night	0000-2400	5dB(A) <LA90
Noise that has a distinguishable discrete continuous note (whine, hiss, screech, hum) at 1 metre external to a sensitive façade.	Day, evening and night	0000-2400	10dB(A) <LA90
Noise that has distinct impulses (bangs, clicks, clatters, thumps) at 1 metre external to a sensitive façade.	Day, evening and night	0000-2400	10dB(A) <LA90
Noise at 1 metre external to sensitive façade where LA90>60dB	Day, evening and night	0000-2400	55dB$_{LAeq}$

Key references / evidence

- Camden's Noise Strategy, 2002
- The London Plan (Consolidated with Alterations since 2004), 2008
- Planning Policy Guidance 24: Planning and noise

National Planning Policy Framework and the Noise Policy Statement for England

The Department for Communities and Local Government published the National Planning Policy Framework (NPPF) on 27th March 2012 and upon its publication, the majority of planning policy statements and guidance notes were withdrawn, including Planning Policy Guidance 24 Planning and Noise, which previously presented the government's overarching planning policy on noise.

The NPPF contains four aims, which are set out at paragraph 123 in Section 11 of the document, titled *Conserving and enhancing the natural environment*:

"Planning policies and decisions should aim to:

avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;

mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;

recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and

identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."

The Department for Environment Food and Rural Affairs published the Noise Policy Statement for England (NPSE) in March 2010. The explanatory note of NPSE defines the following terms used in the NPPF:

"NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

2.21 Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed adverse effect level.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur."

The NPSE does not define any of the above effect levels numerically.

The NPSE presents the Noise Policy Aims as:

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy and sustainable development:

avoid significant adverse impacts on health and quality of life;

mitigate and minimise adverse impacts on health and quality of life; and

where possible, contribute to the improvement of health and quality of life."

It can be seen that the first two bullet points are similar to Section 11 of the NPPF, with a third aim that seeks to improve health and quality of life. The NPSE later expands on the Noise Policy Aims, stating:

2.23 The first aim of the NPSE states that significant adverse effects on health and quality of life should be avoided while also taking into account the guiding principles of sustainable development (paragraph 1.8).

2.24 The second aim of the NPSE refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the

guiding principles of sustainable development (paragraph 1.8). This does not mean that such adverse effects cannot occur.

2.25 This aim (the third aim)*, seeks where possible, positively to improve health and quality of life through the pro-active management of noise while also taking into account the guiding principles of sustainable development (paragraph 1.8), recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society. The protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim."*

It is clear that noise described in the NPSE as SOAEL that would lead to significant adverse effects should be avoided, although there is no definition as to what constitutes a significant adverse effect. Similarly, noise should be mitigated where it is high enough to lead to adverse effects, termed the LOAEL, but not so high that it leads to significant adverse effects.

British Standard 4142

British Standard (BS) 4142: 1997 *Method for rating industrial noise affecting mixed residential and industrial areas* is intended to be used to assess whether noise from factories, industrial premises or fixed installations and sources of an industrial nature in commercial premises is likely to give rise to complaints from people residing in nearby dwellings.

The procedure contained in BS4142 for assessing the likelihood of complaints is to compare the "*specific noise level*", which is the measured or predicted noise level from the source in question immediately outside the dwelling, with the background noise level. Where the noise contains a "*distinguishable discrete continuous note (whine, hiss, screech, hum etc.) or if there are distinct impulses in the noise (bangs, clicks, clatters or thumps), or if the noise is irregular enough to attract attention*" then a correction of +5dB is added to the specific noise level to obtain the "*rating level*" or L_{Ar}.

The likelihood of noise provoking complaints is assessed by subtracting the background noise level from the rating noise level. BS4142 states:

> *"A difference of around 10dB or higher indicates that complaints are likely. A difference of around 5dB is of marginal significance. A difference of -10dB is a positive indication that complaints are unlikely."*

The standard also notes that:

> *"The greater this difference the greater the likelihood of complaints."*

In the context of the NPPF, it is considered that a situation where BS4142 suggests complaints are unlikely would equate to the No Observed Effect Level (NOEL). The situation where BS4142 suggests complaints are likely would equate to the Significant Observed Adverse Effect Level (SOAEL).

The Lowest Observed Adverse Effect Level (LOAEL) has been equated to the situation that BS4142 describes as "marginal" as this is the only intermediate threshold identified in BS4142.

Setting plant noise limits in accordance with the requirements of Camden Council will result in noise levels either below the NOEL or between the LOAEL and the NOEL depending on the measured ambient noise level.

This assessment is carried out over a one hour period for the daytime and a five minute period for the night-time. Day or night are not defined in the standard but it states that night should cover the times when the general adult population are preparing for sleep or are actually sleeping. For the purposes of this assessment, it is assumed that daytime and night-time are 07:00 to 23:00 hours and 23:00 to 07:00 hours respectively.

BS4142 has been referenced in setting noise limits for any fixed plant proposed as part of the proposed development.

APPENDIX D

SURVEY RESULTS
(TABULAR)

EC 14051 - Foxtons Kentish Town

Icewit Design

Tabulated Noise data

Time	L_{Aeq}	L_{AMax}	L_{A90}
15:15	55	83	47
15:20	49	60	46
15:25	50	63	45
15:30	49	61	46
15:35	49	65	46
15:40	52	64	47
15:45	49	59	46
15:50	52	68	47
15:55	49	60	45
16:00	51	68	47
16:05	49	57	46
16:10	49	58	46
16:15	49	59	46
16:20	50	62	46
16:25	52	69	45
16:30	51	66	45
16:35	48	59	45
16:40	50	62	47
16:45	57	75	46
16:50	61	76	50
16:55	52	61	48
17:00	54	69	49
17:05	56	74	46
17:10	54	68	46
17:15	53	70	47
17:20	51	67	46
17:25	52	67	46
17:30	49	59	47
17:35	50	61	46
17:40	48	59	45
17:45	54	71	46
17:50	54	71	45
17:55	50	66	44
18:00	47	57	44
18:05	48	67	45
18:10	49	61	46
18:15	49	61	46
18:20	52	65	48
18:25	53	67	48
18:30	52	67	45
18:35	50	65	46
18:40	52	71	45
18:45	51	60	47
18:50	49	61	45
18:55	48	64	45
19:00	51	65	47
19:05	53	69	45
19:10	52	69	46

Time	L_{Aeq}	L_{AMax}	L_{A90}
19:15	51	66	46
19:20	49	66	45
19:25	49	63	45
19:30	52	62	46
19:35	52	68	45
19:40	53	69	46
19:45	49	63	45
19:50	52	70	46
19:55	50	64	45
20:00	48	60	44
20:05	54	71	45
20:10	47	63	44
20:15	49	60	45
20:20	51	63	44
20:25	53	67	45
20:30	51	65	44
20:35	52	66	45
20:40	49	64	46
20:45	49	61	44
20:50	50	64	44
20:55	50	61	45
21:00	50	65	46
21:05	49	73	45
21:10	55	74	44
21:15	52	65	44
21:20	52	65	46
21:25	51	64	44
21:30	57	73	45
21:35	47	62	43
21:40	51	67	44
21:45	50	64	43
21:50	46	56	43
21:55	45	61	41
22:00	46	56	43
22:05	46	68	42
22:10	47	74	42
22:15	47	68	42
22:20	47	74	42
22:25	49	80	42
22:30	46	56	42
22:35	44	52	41
22:40	44	52	41
22:45	44	53	41
22:50	46	62	41
22:55	45	60	41
23:00	49	63	42
23:05	57	74	48
23:10	53	69	45

EC 14051 - Foxtons Kentish Town

Icewit Design

Tabulated Noise data

Time	L_{Aeq}	L_{AMax}	L_{A90}
23:15	56	74	45
23:20	63	74	47
23:25	60	70	43
23:30	45	57	42
23:35	52	72	40
23:40	46	64	41
23:45	45	60	42
23:50	44	57	40
23:55	44	64	41
00:00	43	54	40
00:05	44	57	41
00:10	44	52	40
00:15	48	68	39
00:20	43	49	39
00:25	43	54	37
00:30	45	68	39
00:35	43	60	37
00:40	43	55	39
00:45	42	50	39
00:50	43	53	39
00:55	41	52	36
01:00	43	54	38
01:05	42	64	37
01:10	43	51	37
01:15	41	49	37
01:20	42	51	38
01:25	42	52	37
01:30	43	50	38
01:35	43	51	39
01:40	41	50	37
01:45	42	50	38
01:50	41	49	38
01:55	41	51	37
02:00	41	50	37
02:05	46	59	37
02:10	42	52	38
02:15	41	51	37
02:20	40	48	36
02:25	42	53	37
02:30	41	51	37
02:35	41	50	36
02:40	41	51	36
02:45	48	65	39
02:50	41	49	36
02:55	40	48	36
03:00	41	65	37
03:05	45	61	36
03:10	41	50	37

Time	L_{Aeq}	L_{AMax}	L_{A90}
03:15	41	49	36
03:20	40	46	36
03:25	40	51	36
03:30	41	53	37
03:35	40	50	36
03:40	39	49	36
03:45	42	59	37
03:50	43	58	36
03:55	45	59	37
04:00	41	51	36
04:05	43	50	38
04:10	43	53	37
04:15	44	56	38
04:20	44	53	39
04:25	46	57	40
04:30	53	66	41
04:35	52	65	39
04:40	50	64	40
04:45	52	64	41
04:50	51	65	40
04:55	48	63	38
05:00	46	64	39
05:05	45	55	39
05:10	48	57	40
05:15	45	57	39
05:20	43	59	37
05:25	46	64	39
05:30	45	57	41
05:35	43	56	38
05:40	45	61	40
05:45	44	55	41
05:50	45	56	40
05:55	44	54	40
06:00	45	56	40
06:05	44	63	40
06:10	44	59	39
06:15	45	56	40
06:20	44	56	40
06:25	46	66	41
06:30	52	71	42
06:35	49	57	45
06:40	48	59	44
06:45	46	65	43
06:50	56	71	40
06:55	48	59	41
07:00	47	61	42
07:05	47	59	43
07:10	48	63	43

EC 14051 - Foxtons Kentish Town

Icewit Design

Tabulated Noise data

Time	L_{Aeq}	L_{AMax}	L_{A90}
07:15	53	71	44
07:20	48	63	44
07:25	47	57	44
07:30	48	62	44
07:35	49	63	45
07:40	47	55	43
07:45	52	63	45
07:50	62	67	59
07:55	67	72	61
08:00	68	73	66
08:05	63	72	55
08:10	54	63	48
08:15	55	72	46
08:20	52	70	45
08:25	48	68	45
08:30	49	68	45
08:35	47	67	44
08:40	49	65	46
08:45	50	65	45
08:50	48	60	45
08:55	49	67	45
09:00	50	62	46
09:05	53	69	46
09:10	49	71	44
09:15	49	66	45
09:20	49	63	44
09:25	49	68	45
09:30	52	70	44
09:35	48	68	44
09:40	49	64	44
09:45	51	61	46
09:50	49	64	45
09:55	53	70	43
10:00	57	71	46
10:05	57	76	46
10:10	48	60	44
10:15	50	61	46
10:20	49	59	45
10:25	48	63	44
10:30	49	60	44
10:35	49	64	45
10:40	49	61	45
10:45	50	70	46
10:50	52	65	47
10:55	53	70	45
11:00	47	62	45
11:05	49	62	45
11:10	51	75	47

Time	L_{Aeq}	L_{AMax}	L_{A90}
11:15	51	61	47
11:20	50	70	46
11:25	47	62	44
11:30	48	63	45
11:35	49	71	44
11:40	54	65	45
11:45	54	70	45
11:50	50	73	45
11:55	50	59	46
12:00	52	62	48
12:05	49	65	45
12:10	49	64	45
12:15	52	66	46
12:20	57	72	46
12:25	51	68	46
12:30	48	61	45
12:35	49	67	46
12:40	54	72	47
12:45	50	64	47
12:50	50	58	47
12:55	52	64	47
13:00	51	60	47
13:05	50	67	47
13:10	52	73	47

APPENDIX E

SURVEY RESULTS
(GRAPHICAL)

Noise Level Time History at Foxtons Kentish Town