SHARPS REDMORE

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Report

262-267 High Holborn
Assessment of fixed plant noise

Planning application 2013/3983/P Condition 8 & 9

Prepared by
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Date 14th April 2020
Project No: 2019518

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Contents

Appendices

1.0 Introduction

1.1 Sharps Redmore (SR) has been instructed to undertake a noise assessment of proposed fixed plant equipment, at part of the re-development of 262-267 High Holborn, London. See site layout drawing in Appendix G.

1.2 Consent for the development (2013/3983/P) has been granted, subject to a number of planning conditions.

Condition 8 states:

"Noise levels at a point 1 metre external to sensitive facades shall be at least 5 dBA less than the existing background measurement (LA90), expressed in dBA when all plant/equipment (or any part of it) is in operation unless the plant/equipment hereby permitted will have a noise that has a distinguishable, discrete continuous noise (whine, hiss, screech, hum) and/or if there are distinct impulses (bangs, clicks, clatters, thumps), then the noise levels from that piece of plant/equipment at any sensitive façade shall be at least 10 dBA below the LA90 expressed in dBA."

Condition 9 states:

"*Before the use commences, the extract/ventilating system/plant shall be provided with acoustic isolation, sound attenuation and anti-vibration measures in accordance with the scheme approved in writing by the local planning authority. All such measures shall thereafter be retained and maintained in accordance with the manufacturers recommendations."*

1.3 The proposal is to install the air conditioning chiller in a plant area on the 7th floor roof, with the main ventilation plant (Air Handling Units and Extract Fans) located in a basement plantroom with fresh air inlets and exhausts ducted to louvres at ground floor level. Toilet extract fans are located on each floor of the development.

1.4 The surrounding area is a combination of other commercial / retail outlets. The nearest noise sensitive premises are The Chancery Court Hotel adjacent to the development, and 268-270 High Holborn (understood to be offices) which is adjacent to the development, and extends to the rear of the development.

1.5 The objective of the assessment is to determine how noise that may be generated as a result of the proposed fixed plant equipment would compare against the criteria specified in Condition 8 of the planning consent.

1.6 Section 2 of this report contains a discussion of the available methods of assessment and assessment criteria.

1.7 Section 3 of this report sets out the findings of an environmental noise survey, section 4 presents an assessment of noise from fixed plant equipment.

1.8 The assessment conclusions are contained in section 6 of this report.

2.0 Assessment methodology and criteria

2.1 It is usual in dealing with fixed sources of ventilation and refrigeration noise to use BS 4142:2014 "Method for rating and assessing industrial and commercial noise" as a means of establishing the potential impact from the new sources to the nearest residential properties.

2.2 However, at the time the original application was submitted / approved, the previous 1997 version of the standard, was in use.

2.3 A survey of existing noise levels was carried out between 20th March and 21st March 2013 at a monitoring location shown in Fig 1 below. The monitoring position was chosen to be representative of the nearest noise sensitive properties to the proposed plant area, namely the Chancery Court Hotel.

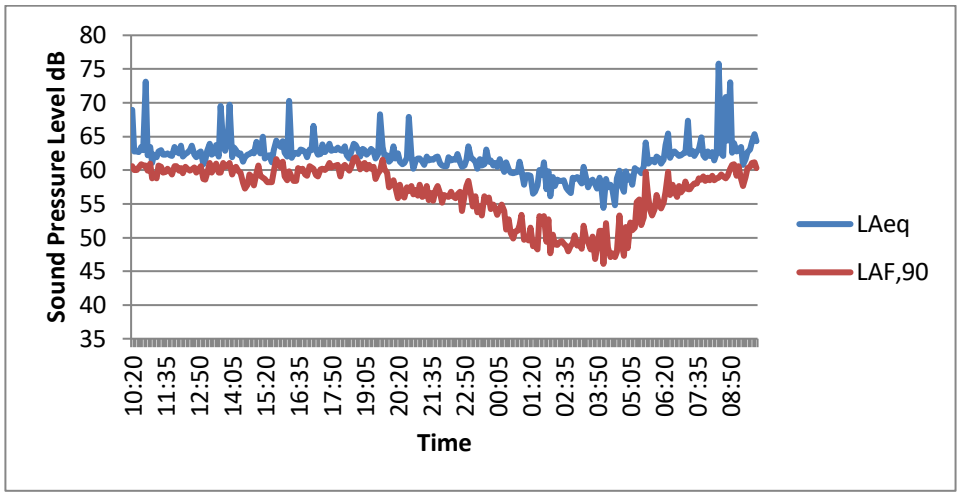
Fig 1: Monitoring location

2.4 The weather during the survey was cold and overcast with a slight (>5m/s^{-1}), easterly wind. Weather conditions were suitable for carrying out sound level measurements.

2.5 The measurements were taken using a Norsonic 140 type 1 precision sound level meter. The sound level meter was calibrated at the start and end of the survey and no variation in level noted. Sound level measurements were regularly at 5-minute samples over the duration of the survey. All measurements were taken in free field conditions.

2.6 The steady noise level dB $L_{Aeq(5min)}$, non-steady noise level dB L_{Amax} and background noise levels dB, $L_{A90(5min)}$ were recorded during the survey. Fig 2 below is a summary of the noise results recorded. Full details of the survey are included in Appendix H.

Fig 2: Survey Results



2.7 Whilst Condition 7 of the original planning application restricted the use of the plant to between 0700 and 1900 hours, this condition was amended under a Section 73 application (2014/2703/P) to permit the use of plant to between 0700 hours and midnight.

2.8 In our experience, the type of plant proposed is not considered tonal or impulsive, therefore based on the environmental noise survey undertaken the following criteria has been adopted :

Table 1: Adopted criteria

Time	Adopted criteria L_{Aeq}
0700 to 2000 hours	55 dBA (L_{A90} 60 dB -5)
2000 to 2200 hours	52 dBA (L_{A90} 57 dB – 5)
2200 hours to Midnight	49 dBA (L_{A90} 54dB – 5)

3.0 The fixed plant noise control scheme – conclusions and recommendations

3.1 Based on the environmental noise model (see Section 5.0), the predicted noise levels without any additional mitigation are as follows:

Table 2 – Predicted noise levels

Chancery Court Hotel

Time period	Predicted L_{Aeq} (dB)	Criteria L_{Aeq} (dB)
0700 – 2000 hours	55 dBA	55 dBA
2000 – 2200 hours	52 dBA	52 dBA
2200 - midnight	49 dBA	49 dBA

268-270 High Holborn (rear)

Time period	Predicted L_{Aeq} (dB)	Criteria L_{Aeq} (dB)
0700 – 2000 hours	37 dBA	55 dBA
2000 – 2200 hours	36 dBA	52 dBA
2200 - midnight	35 dBa	49 dBA

3.2 A schedule of manufacturers noise data used for the proposed plant is shown in Appendix A

3.3 The noise control system is based on the selection of intrinsically quiet equipment, distance from the plant to the receptors, load control of the chiller, add-on attenuation, and screening from the building itself / parapet around the roof plant.

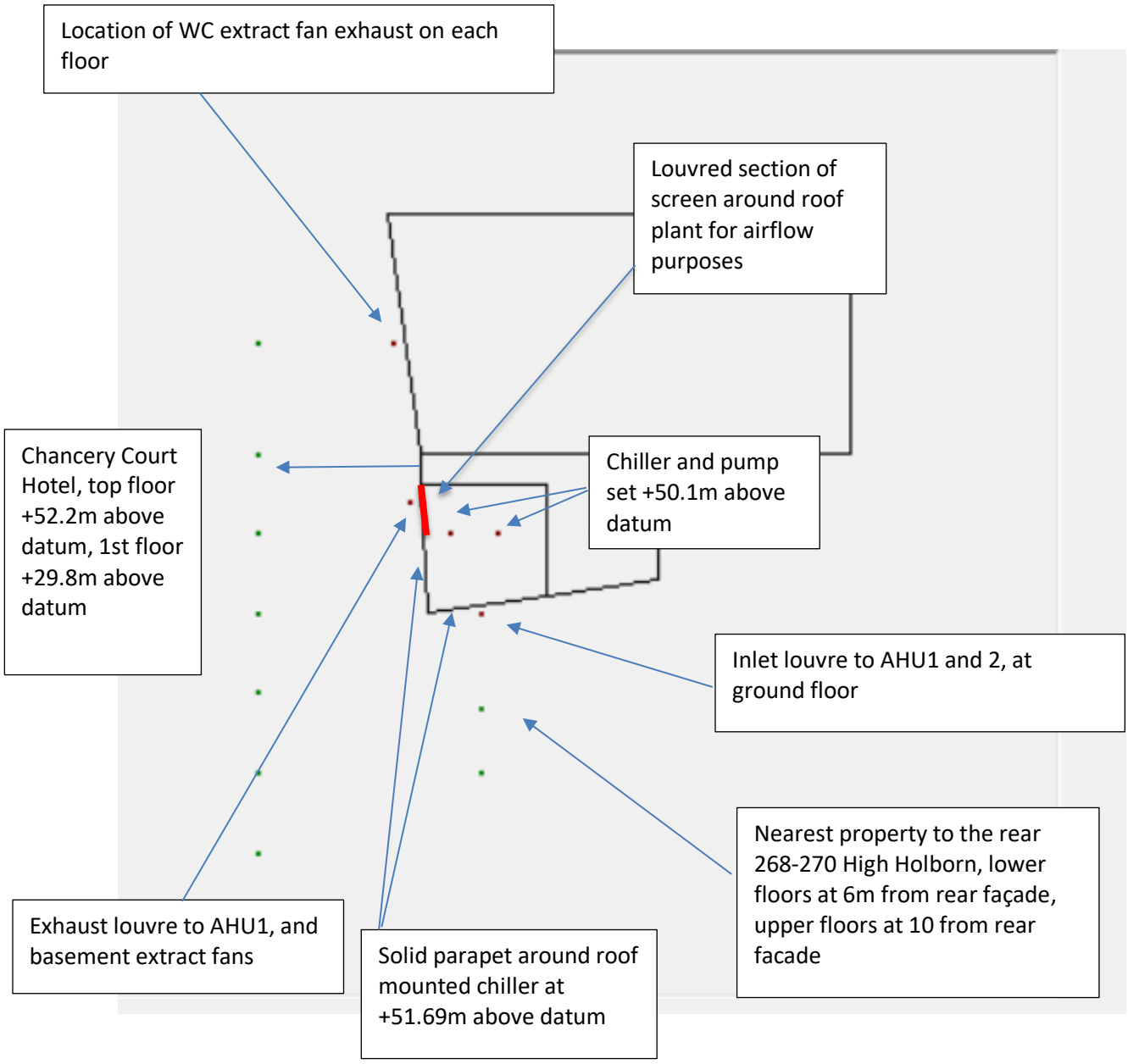
3.4 The chiller is capable of operating to achieve various cooling loads, generally dependent on ambient temperature, and the cooling demands within the office space, but this can also be controlled via the BMS system, limiting the load capacity at specific times. Based on the information provided by the chiller manufacturer, the chiller will be controlled to not exceed 56 dBA at 10m between 0700 and 2000 hours, 52 dBA at 10m between 2000 and 2200 hours, and 45 dBA at 10m between 2200 and midnight. The calculations for these time periods are presented in summary form in appendices D, E and F.

3.5 A schedule of the insertion loss requirements is presented in Appendix C.

3.6 The comparison presented in Table 2 indicates compliance with the criteria specified in Condition 8 of the planning consent, based on the mitigation referred to in this report.

3.7 Whilst the development building is stand alone, ie no party walls to adjacent properties, it is suggested that all mechanical services plant, extract fans, AHU's and chillers are mounted on suitably selected anti-vibration mounts, and all extract fans and AHU's are isolated from the associated ductwork with flexible connectors.

3.8 Detailed below is a sketch from the noise model detailing the location of the development, the plant, the parapet and the nearest noise sensitive premises:


Location of WC extract fan exhaust on each floor
Louvred section of screen around roof plant for airflow purposes
Chancery Court Hotel, top floor +52.2m above datum, 1st floor +29.8m above datum
Chiller and pump set +50.1m above datum
Inlet louvre to AHU1 and 2, at ground floor
Nearest property to the rear 268-270 High Holborn, lower floors at 6m from rear façade, upper floors at 10 from rear facade
Exhaust louvre to AHU1, and basement extract fans
Solid parapet around roof mounted chiller at +51.69m above datum

4.0 The noise model and prediction methodology

4.1 The noise model employed has been written in-house to provide an accurate prediction method for assessing environmental noise from, in particular, plant and equipment items which can be perceived as being point sources. It has been mainly used for the prediction of noise emanating from superstores.

4.2 There are three input spreadsheets containing:

- noise sources data
- receiver data
- acoustic screening data

These are included in Appendix B.

4.3 The noise sources data include one of the following forms for each item of plant:

- either, octave band sound power levels in the range of 63 to 8000Hz – this being available from manufacturer of many of the supply and extract fans.
- or, octave band sound pressure levels in the range of 63 to 8000Hz – this is available usually for the small, externally mounted split units' condenser fans from the manufacturer's product catalogue when measured at one metre in anechoic conditions, thus allowing straight forward calculation of the equivalent sound power levels.
- or, single value sound pressure levels at a stated distance

4.4 The relative location of the plant using X and Y co-ordinates with an arbitrary datum point and a Z (height) co-ordinate based on supporting steel and screening heights from the main contractor and then the equipment heights based, in this case, on the mechanical services contractor drawings.

4.5 Where known, the area and orientation of the noise outlet is entered together with its location adjacent to either one, two or three reflective surfaces so that the calculation can establish the directivity pattern and outlet reflection losses.

4.6 The receiver data needed are the X, Y and Z co-ordinates so that the relative distance and angle can be calculated between the source and the receiver.

4.7 Finally, several types of acoustic screening may be entered. In this case, this is designated "R" meaning a ring barrier, in this case indicating the locations of the building itself.

4.8 The noise model carries out "text book" atmospheric side calculations at each receiver position from each source allowing for the attenuation from such as the calculated distance and screening. The calculations are performed in eight Octave bands from 63 to 8000Hz but can then be summarised as dBA, NR or NC for convenience. In this case, the overall summary levels are in dBA. Calculations for the plant are included in Appendix D, E and F. The computer maintains a logarithmic total of the noise levels in Octave bands.

4.9 At the end of each program “run”, the overall day or night time noise level at each receiver position are calculated and ranked in descending order of noise level. Where this ranking shows that the receiver position’s noise level exceeds the noise criterion, each calculation can be interrogated to determine the plant items needing more detailed inspection to establish the attenuation needed. The process is repeated until either the noise level meets the noise criterion or the program demonstrates that other noise control methods are needed. This may take the form of restricting the offending plant’s period of operation or improving the screening or re-selection to give quieter plant.

4.10 Plant noise predictions are shown in summary form; full calculations of noise from each source to each receptor are available on request

5.0 Assessment conclusions

5.1 This assessment of fixed plant indicates compliance with the criteria specified in Condition 8 of the planning consent.

5.2 This assessment objectively demonstrates that noise arising from the fixed plant, complies with the requirement of paragraph 180 of the NPPF to avoid significant adverse impact.

APPENDIX A

NOISE SOURCE DATA

Client: Mala			A						Page: 1 of 1		
Project: High Holborn			Project no: 2019518								
Consultant: MT			Date: 14 April 2020								
Sound power levels (Lw) & sound pressure levels (Lp) for fans & other equipment											
	Lw/	Dist.	On time	Mid-frequency Octave Bands (Hz)							
Equipment name/reference	Lp	(m)	D/N/A	63	125	250	500	1k	2k	4k	8k
Roof mounted chiller	Lp	10	D	56	56	59	52	50	47	44	37
Roof mounted chiller	Lp	10	N	44	44	47	41	39	36	33	26
Roof mounted pumps	Lp	1	A	65	dBA						
AHU1 fresh air inlet	Lw		A	61	75	72	67	65	56	50	42
AHU2 fresh air inlet	Lw		A	65	63	70	69	63	59	53	48
AHU1 exhaust	Lw		A	61	71	68	68	65	59	53	50
EFX-B1-05 Exhaust	Lw		A	78	71	69	65	62	61	55	53
EFX-B1-04 Exhaust	Lw		D	92	92	93	92	89	85	81	76
EFX-B1-03 Exhaust	Lw		A	74	80	71	71	71	72	63	55
EFX-B1-02 Exhaust	Lw		A	77	80	65	67	59	59	53	46
EFX-B1-01 Exhaust	Lw		A	79	73	80	73	65	67	58	54
EXF-00-01 Exhaust	Lw		A	82	71	73	75	66	65	62	58
EXF-01-01 Exhaust	Lw		A	82	71	73	75	66	65	62	58
EXF-02-01 Exhaust	Lw		A	82	71	73	75	66	65	62	58
EXF-03-01 Exhausr	Lw		A	82	71	73	75	66	65	62	58
EXF-04-01 Exhaust	Lw		A	82	71	73	75	66	65	62	58
EXF-05-01 Exhaust	Lw		A	82	71	73	75	66	65	62	58
EXF-06-01 Exhaust	Lw		A	82	71	73	75	66	65	62	58
EXF-07-01 Exhaust	Lw		A	82	71	73	75	66	65	62	58
EXF-08-01 Exhaust	Lw		A	82	71	73	75	66	65	62	58

Notes:

1. Lw/Lp
   Lw means sound power level (dB)
   Lp means sound pressure level at the stated distance (dB@m)
2. On times (On.time D/N/A):
   D (Day) means that the fan/equipment could operate at any time between 0700 and 2300 hours
   N (Night) means that the fan/equipment could operate at any time between 2300 and 0700 hours
   A (All) means that the fan/equipment could operate at any time during the day and night

APPENDIX B

NOISE MODEL INPUT DATA

Sharps Redmore Partnership
The White House, London Road, Copdock, Ipswich, IP8 3JH

Filename: C:\High Holborn\270320_1A

Date: 14 April 2020

Entries by: MT

Project no: 2019518

Project title: High Holborn

Client's name: Mala

Map/plot details:

Length:	3200	
Width:	3200	
Height:	250	

Sharps Redmore Partnership
The White House, London Road, Copdock, Ipswich, IP8 3JH

Source data - description, co-ordinates, outlet size, percentage to atmosphere, directivity, sound levels and running period

Filename: C:\High Holborn\270320_1A

Source description	__Co-ordinates__			_____Outlet details_____					Run	Lp/	dBA	Dist	____Mid frequency octave bands (Hz)_____							
	X m	Y m	Z m	Amm	Bmm	Ang.	%	Q	dna	Lw	Y/N	(m)	63	125	250	500	1k	2k	4k	8k
Roof mounted chiller	190.0	195.0	50.1	0	0	0	100	2	D	P	N	10.0	56	56	59	52	50	47	44	37
Roof mounted chiller	190.0	195.0	50.1	0	0	0	100	2	N	P	N	10.0	44	44	47	41	39	36	33	26
Roof mounted pumps	187.0	195.0	50.1	0	0	0	100	2	A	P	Y	1.0	65							
AHU1 fresh air inlet	189.0	190.0	23.0	1600	1600	180	100	1	A	W	N	0.0	61	75	72	67	65	56	50	42
AHU2 fresh air inlet	189.0	190.0	23.0	800	300	180	100	1	A	W	N	0.0	65	63	70	69	63	59	53	48
AHU1 exhaust	184.5	197.0	23.0	1900	600	270	100	1	A	W	N	0.0	61	71	68	68	65	59	53	50
EFX-B1-05 Exhaust	184.5	197.0	23.0	600	600	270	100	1	A	W	N	0.0	78	71	69	65	62	61	55	53
EFX-B1-04 Exhaust	184.5	197.0	23.0	1000	1000	270	100	1	D	W	N	0.0	92	92	93	92	89	85	81	76
EFX-B1-03 Exhaust	184.5	197.0	23.0	600	600	270	100	1	A	W	N	0.0	74	80	71	71	71	72	63	55
EFX-B1-02 Exhaust	184.5	197.0	23.0	600	600	270	100	1	A	W	N	0.0	77	80	65	67	59	59	53	46
EFX-B1-01 Exhaust	184.5	197.0	23.0	600	600	270	100	1	A	W	N	0.0	79	73	80	73	65	67	58	54
EXF-00-01 Exhaust	183.5	207.0	27.3	600	600	270	100	1	A	W	N	0.0	82	71	73	75	66	65	62	58
EXF-01-01 Exhaust	183.5	207.0	31.3	600	600	270	100	1	A	W	N	0.0	82	71	73	75	66	65	62	58
EXF-02-01 Exhaust	183.5	207.0	34.5	600	600	270	100	1	A	W	N	0.0	82	71	73	75	66	65	62	58
EXF-03-01 Exhaust	183.5	207.0	37.7	600	600	270	100	1	A	W	N	0.0	82	71	73	75	66	65	62	58
EXF-04-01 Exhaust	183.5	207.0	40.9	600	600	270	100	1	A	W	N	0.0	82	71	73	75	66	65	62	58
EXF-05-01 Exhaust	183.5	207.0	44.1	600	600	270	100	1	A	W	N	0.0	82	71	73	75	66	65	62	58
EXF-06-01 Exhaust	183.5	207.0	47.3	600	600	270	100	1	A	W	N	0.0	82	71	73	75	66	65	62	58
EXF-07-01 Exhaust	183.5	207.0	50.5	600	600	270	100	1	A	W	N	0.0	82	71	73	75	66	65	62	58
EXF-08-01 Exhaust	183.5	207.0	53.7	600	600	270	100	1	A	W	N	0.0	82	71	73	75	66	65	62	58

Sharps Redmore Partnership
The White House, London Road, Copdock, Ipswich, IP8 3JH

Receptor data - description and co-ordinates

Filename: C:\High Holborn\270320_1A

Receptor description	__Co-ordinates__			
	X m	Y m	Z m	DNA
Top floor Chancery Court Hotel F	175.0	200.0	52.2	A
Top floor Chancery Court Hotel E	175.0	195.0	52.2	A
Top floor Chancery Court Hotel D	175.0	190.0	52.2	A
Top floor Chancery Court Hotel C	175.0	185.0	52.2	A
Top floor Chancery Court Hotel B	175.0	180.0	52.2	A
Top floor Chancery Court Hotel A	175.0	175.0	52.2	A
1st floor Chancery Court Hotel F	175.0	200.0	29.8	A
1st floor Chancery Court Hotel E	175.0	195.0	29.8	A
1st floor Chancery Court Hotel C	175.0	185.0	29.8	A
1st floor Chancery Court Hotel A	175.0	175.0	29.8	A
1st floor Chancery Court Hotel	175.0	190.0	29.8	A
1st floor Chancery Court Hotel	175.0	180.0	29.8	A
268-270 High Holborn to rear grd floor	189.0	184.0	22.8	A
268-270 High Holborn to rear 4th floor	189.0	184.0	39.4	A
268-270 High Holborn to rear 5th floor	189.0	180.0	42.6	A
1st floor Chancery Court Hotel G	175.0	207.0	29.8	A
2nd floor Chancery Court Hotel G	175.0	207.0	33.0	A
3rd floor Chancery Court Hotel G	175.0	207.0	36.2	A
4th floor Chancery Court Hotel G	175.0	207.0	39.4	A
5th floor Chancery Court Hotel G	175.0	207.0	42.6	A
6th floor Chancery Court Hotel G	175.0	207.0	45.8	A
7th floor Chancery Court Hotel G	175.0	207.0	49.0	A
8th floor Chancery Court Hotel G	175.0	207.0	53.2	A

Sharps Redmore Partnership
The White House, London Road, Copdock, Ipswich, IP8 3JH

Barrier data - description and co-ordinates

Filename: C:\High Holborn\270320_1A

Barrier description	_____Co-ordinates_____					
		Start			End	
	X m	Y m	Z m	X m	Y m	Z m
R	200.0	200.0	54.0	212.0	200.0	54.0
R	212.0	200.0	54.0	212.0	215.0	54.0
R	212.0	215.0	54.0	183.0	215.0	54.0
R	183.0	215.0	54.0	185.0	200.0	54.0
R	185.0	200.0	54.0	200.0	200.0	54.0
R	185.0	200.0	52.0	200.0	200.0	52.0
R	200.0	200.0	52.0	200.0	192.0	52.0
R	200.0	192.0	52.0	193.0	191.0	52.0
R	193.0	191.0	52.0	193.0	198.0	52.0
R	193.0	198.0	52.0	185.0	198.0	52.0
R	185.0	198.0	52.0	185.0	200.0	52.0
F	185.0	198.0	51.7	193.0	198.0	51.7
F	193.0	198.0	51.7	193.0	191.0	51.7
F	193.0	191.0	51.7	185.5	190.0	51.7
F	185.5	190.0	51.7	185.0	195.5	51.7
F	185.0	195.5	48.0	185.0	198.0	48.0

APPENDIX C

INSERTION LOSS REQUIREMENTS

Client: Mala	C Page: 1 of 1
Project: High Holborn	Project no: 2019518
Consultant: MT	Date: 14 April 2020
Atmospheric side dynamic insertion losses for noise control equipment	

Equipment name/reference	Mid-frequency Octave Bands (Hz)							
	63	125	250	500	1k	2k	4k	8k
AHU1 fresh air inlet	7	11	18	24	27	21	17	14
AHU2 fresh air inlet	7	9	14	19	22	18	15	13
AHU1 exhaust	7	10	16	22	24	19	16	13
EFX-B1-05 Exhaust	4	7	11	21	25	25	18	12
EFX-B1-04 Exhaust	5	9	16	30	39	39	31	26
EFX-B1-03 Exhaust	4	7	11	21	25	25	18	12
EFX-B1-02 Exhaust	4	7	11	21	25	25	18	12
EFX-B1-01 Exhaust	4	7	11	21	25	25	18	12
EXF-00-01 Exhaust	1	3	7	16	21	20	13	10
EXF-01-01 Exhaust	1	3	7	16	21	20	13	10
EXF-02-01 Exhaust	1	3	7	16	21	20	13	10
EXF-03-01 Exhausr	1	3	7	16	21	20	13	10
EXF-04-01 Exhaust	1	3	7	16	21	20	13	10
EXF-05-01 Exhaust	1	3	7	16	21	20	13	10
EXF-06-01 Exhaust	1	3	7	16	21	20	13	10
EXF-07-01 Exhaust	1	3	7	16	21	20	13	10
EXF-08-01 Exhaust	1	3	7	16	21	20	13	10

Notes:

1. Dynamic insertion loss is the logarithmic summation of the air regenerated sound power level and the residual fan sound power level after subtracting the proposed static insertion loss. If this concept is unclear or if you have other queries, contact Sharps Redmore Partnership.

2. After tendering, please send a copy of your proposed insertion losses, air regenerated Lw, passage velocities, pressure losses, air volumes & dimensions to Sharps Redmore Partnership

APPENDIX D

CALCULATIONS –SUMMARY (0700-2000 HOURS)

Overall receptor listings													
Period:	Day time					Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Top floor Chancery Court Hotel F					64	58	58	52	49	46	44	40	55
Top floor Chancery Court Hotel E					61	54	55	47	42	37	32	26	50
8th floor Chancery Court Hotel G					61	53	51	44	37	35	36	36	47
6th floor Chancery Court Hotel G					61	53	51	43	36	35	36	37	47
7th floor Chancery Court Hotel G					61	53	51	43	36	35	36	37	47
1st floor Chancery Court Hotel F					60	56	52	42	35	33	33	34	47
5th floor Chancery Court Hotel G					59	52	51	43	36	35	37	37	47
4th floor Chancery Court Hotel G					60	53	51	43	35	34	36	36	47
3rd floor Chancery Court Hotel G					60	53	51	43	34	34	36	36	47
Top floor Chancery Court Hotel D					59	52	52	43	38	32	27	22	47
2nd floor Chancery Court Hotel G					60	53	51	43	34	33	35	35	47
1st floor Chancery Court Hotel G					60	53	50	42	33	33	35	35	46
1st floor Chancery Court Hotel E					57	56	52	39	30	28	29	29	46
Top floor Chancery Court Hotel C					58	51	51	41	36	31	26	19	45
Top floor Chancery Court Hotel B					56	49	49	40	35	29	24	17	44
1st floor Chancery Court Hotel					55	53	49	36	28	25	25	25	43
Top floor Chancery Court Hotel A					55	48	47	38	33	27	21	16	42
1st floor Chancery Court Hotel C					54	51	47	34	26	23	22	21	41
1st floor Chancery Court Hotel					52	49	44	32	25	22	20	17	38
268-270 High Holborn to rear 5th floor					52	44	42	31	28	25	23	18	37
268-270 High Holborn to rear 4th floor					51	44	41	31	29	26	24	19	37
268-270 High Holborn to rear grd floor					49	46	40	32	27	26	23	19	37
1st floor Chancery Court Hotel A					50	47	42	30	23	21	18	14	36

Source noise levels at receiver: Top floor Chancery Court Hotel F											
Period: Day time					Mid frequency octave bands (Hz)						
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	55	55	58	51	49	46	43	36	55
Roof mounted pumps	63	53	46	40	37	36	36	38	46
EXF-08-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-07-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-06-01 Exhaust	44	36	37	30	16	17	21	20	32
EXF-05-01 Exhaust	43	35	36	29	15	16	20	19	31
EFX-B1-04 Exhaust	44	44	36	17	1	0	1	1	31
EXF-04-01 Exhaust	42	33	34	27	13	12	16	15	29
EXF-03-01 Exhausr	41	32	33	26	12	11	15	14	28
EXF-02-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-01-01 Exhaust	39	30	30	23	7	5	9	8	25
EXF-00-01 Exhaust	37	27	26	19	1	0	1	0	21
EFX-B1-01 Exhaust	30	24	28	11	0	0	0	0	20
EFX-B1-03 Exhaust	25	31	19	9	1	0	0	0	17
EFX-B1-02 Exhaust	28	31	13	5	0	0	0	0	16
EFX-B1-05 Exhaust	29	22	17	3	0	0	0	0	11
AHU1 exhaust	11	22	11	1	0	0	0	0	8
AHU1 fresh air inlet	1	8	0	0	0	0	0	0	0
AHU2 fresh air inlet	3	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	64	58	58	52	49	46	44	40	55

Source noise levels at receiver: Top floor Chancery Court Hotel E									
Period: Day time					Mid frequency octave bands (Hz)				
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	53	52	54	46	42	37	31	21	49
Roof mounted pumps	60	49	40	32	27	24	21	20	39
EFX-B1-04 Exhaust	44	44	36	17	1	0	1	1	31
EXF-07-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-08-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-06-01 Exhaust	42	33	34	27	13	12	16	15	29
EXF-05-01 Exhaust	41	32	33	26	12	11	15	14	28
EXF-04-01 Exhaust	41	32	33	26	12	11	15	14	28
EXF-03-01 Exhausr	40	31	32	25	11	10	14	13	27
EXF-02-01 Exhaust	39	30	31	24	10	9	13	12	26
EXF-01-01 Exhaust	38	29	30	23	9	8	12	11	25
EXF-00-01 Exhaust	37	28	28	21	5	3	7	6	23
EFX-B1-01 Exhaust	30	24	28	11	0	0	0	0	20
EFX-B1-03 Exhaust	25	31	19	9	1	0	0	0	17
EFX-B1-02 Exhaust	28	31	13	5	0	0	0	0	16
EFX-B1-05 Exhaust	29	22	17	3	0	0	0	0	11
AHU1 exhaust	11	22	11	1	0	0	0	0	8
AHU1 fresh air inlet	5	12	0	0	0	0	0	0	0
AHU2 fresh air inlet	7	2	4	0	0	0	0	0	0
Total Free field Lp and dBA	61	54	55	47	42	37	32	26	50

Source noise levels at receiver: Top floor Chancery Court Hotel D									
Period: Day time					Mid frequency octave bands (Hz)				
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	51	50	51	42	38	32	26	16	45
Roof mounted pumps	58	46	37	29	23	19	16	18	36
EFX-B1-04 Exhaust	44	44	36	17	1	0	1	1	31
EXF-07-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-08-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-06-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-05-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-04-01 Exhaust	39	30	30	23	7	5	9	8	25
EXF-03-01 Exhausr	38	29	29	22	6	4	8	7	24
EXF-02-01 Exhaust	38	29	29	22	6	4	8	7	24
EXF-01-01 Exhaust	37	28	28	21	5	3	7	6	23
EXF-00-01 Exhaust	36	27	27	20	4	2	6	5	22
EFX-B1-01 Exhaust	30	24	28	11	0	0	0	0	20
EFX-B1-03 Exhaust	25	31	19	9	1	0	0	0	17
EFX-B1-02 Exhaust	28	31	13	5	0	0	0	0	16
EFX-B1-05 Exhaust	29	22	17	3	0	0	0	0	11
AHU1 exhaust	11	22	11	1	0	0	0	0	8
AHU1 fresh air inlet	6	15	2	0	0	0	0	0	0
AHU2 fresh air inlet	8	5	9	1	0	0	0	0	0
Total Free field Lp and dBA	59	52	52	43	38	32	27	22	47

Source noise levels at receiver: Top floor Chancery Court Hotel C												
Period:	Day time				Mid frequency octave bands (Hz)							
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller		49	48	50	41	36	31	25	15	44
Roof mounted pumps		56	44	35	26	20	16	14	16	34
EFX-B1-04 Exhaust		45	43	38	21	7	3	7	7	32
EXF-07-01 Exhaust		39	29	28	21	3	0	3	2	23
EXF-08-01 Exhaust		39	29	28	21	3	0	3	2	23
EXF-06-01 Exhaust		38	28	27	20	2	0	2	1	22
EXF-05-01 Exhaust		38	28	27	20	2	0	2	1	22
EXF-04-01 Exhaust		38	28	27	20	2	0	2	1	22
EFX-B1-01 Exhaust		30	25	30	13	0	0	0	0	22
EXF-02-01 Exhaust		37	27	26	19	1	0	1	0	21
EXF-03-01 Exhausr		37	27	26	19	1	0	1	0	21
EXF-01-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-00-01 Exhaust		35	25	24	17	0	0	0	0	19
EFX-B1-03 Exhaust		25	32	21	11	5	4	2	0	19
EFX-B1-02 Exhaust		28	32	15	7	0	0	0	0	17
EFX-B1-05 Exhaust		29	23	19	5	0	0	0	0	13
AHU2 fresh air inlet		11	10	17	9	0	0	0	0	11
AHU1 exhaust		12	21	13	5	0	0	0	0	9
AHU1 fresh air inlet		14	23	9	0	0	0	0	0	8
Total Free field Lp and dBA		58	51	51	41	36	31	26	19	45

Source noise levels at receiver: Top floor Chancery Court Hotel B										
Period:	Day time		Mid frequency octave bands (Hz)							
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller		47	46	48	39	35	29	23	13	42
Roof mounted pumps		54	42	32	24	18	14	12	14	32
EFX-B1-04 Exhaust		44	42	37	20	6	2	6	6	31
EXF-07-01 Exhaust		37	27	26	19	1	0	1	0	21
EXF-08-01 Exhaust		37	27	26	19	1	0	1	0	21
EXF-06-01 Exhaust		37	27	26	19	1	0	1	0	21
EXF-05-01 Exhaust		37	27	26	19	1	0	1	0	21
EFX-B1-01 Exhaust		29	24	29	12	0	0	0	0	21
EXF-04-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-02-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-03-01 Exhausr		36	26	25	18	0	0	0	0	20
EXF-01-01 Exhaust		35	25	24	17	0	0	0	0	19
EXF-00-01 Exhaust		34	24	23	16	0	0	0	0	18
EFX-B1-03 Exhaust		24	31	20	10	4	3	1	0	18
EFX-B1-02 Exhaust		27	31	14	6	0	0	0	0	16
EFX-B1-05 Exhaust		28	22	18	4	0	0	0	0	12
AHU2 fresh air inlet		10	10	15	10	0	0	0	0	10
AHU1 fresh air inlet		12	24	12	0	0	0	0	0	10
AHU1 exhaust		11	20	12	4	0	0	0	0	8
Total Free field Lp and dBA		56	49	49	40	35	29	24	17	44

Source noise levels at receiver: Top floor Chancery Court Hotel A										
Period:	Day time		Mid frequency octave bands (Hz)							
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller		46	45	46	37	33	27	21	12	40
Roof mounted pumps		53	41	32	23	17	14	11	13	31
EFX-B1-04 Exhaust		42	42	34	15	0	0	0	0	29
EXF-07-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-08-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-06-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-05-01 Exhaust		35	25	24	17	0	0	0	0	19
EXF-02-01 Exhaust		35	25	24	17	0	0	0	0	19
EXF-04-01 Exhaust		35	25	24	17	0	0	0	0	19
EXF-03-01 Exhausr		35	25	24	17	0	0	0	0	19
EFX-B1-01 Exhaust		28	22	26	9	0	0	0	0	18
EXF-01-01 Exhaust		34	24	23	16	0	0	0	0	18
EXF-00-01 Exhaust		34	24	23	16	0	0	0	0	18
EFX-B1-03 Exhaust		23	29	17	7	0	0	0	0	15
EFX-B1-02 Exhaust		26	29	11	3	0	0	0	0	14
AHU2 fresh air inlet		10	10	16	11	2	1	0	0	12
AHU1 fresh air inlet		13	25	15	3	0	0	0	0	11
EFX-B1-05 Exhaust		27	20	15	1	0	0	0	0	9
AHU1 exhaust		9	20	9	0	0	0	0	0	5
Total Free field Lp and dBA		55	48	47	38	33	27	21	16	42

Source noise levels at receiver: 1st floor Chancery Court Hotel F									
Period: Day time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-04 Exhaust	54	54	49	35	24	20	24	24	43
Roof mounted pumps	57	47	40	34	31	30	30	32	40
Roof mounted chiller	45	44	45	36	31	25	19	12	39
EXF-01-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-00-01 Exhaust	45	37	38	31	17	18	22	21	33
EFX-B1-01 Exhaust	39	34	41	24	13	16	14	16	33
EXF-02-01 Exhaust	44	36	37	30	16	17	21	20	32
EXF-03-01 Exhausr	43	35	36	29	15	16	20	19	31
EXF-04-01 Exhaust	42	34	35	28	14	15	19	18	30
EFX-B1-03 Exhaust	34	41	32	22	19	21	19	17	30
EXF-05-01 Exhaust	41	32	33	26	12	11	15	14	28
EFX-B1-02 Exhaust	37	41	26	18	7	8	9	8	26
EXF-06-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-07-01 Exhaust	39	30	30	23	7	5	9	8	25
EFX-B1-05 Exhaust	38	32	30	16	10	10	11	15	24
EXF-08-01 Exhaust	38	29	29	22	6	4	8	7	24
AHU1 exhaust	21	32	24	19	15	14	11	11	23
AHU2 fresh air inlet	9	4	5	0	0	0	0	0	0
AHU1 fresh air inlet	7	14	0	0	0	0	0	0	0
Total Free field Lp and dBA	60	56	52	42	35	33	33	34	47

Source noise levels at receiver: 1st floor Chancery Court Hotel E									
Period: Day time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-04 Exhaust	55	55	50	36	25	21	25	25	44
EFX-B1-01 Exhaust	40	35	42	25	14	17	15	17	34
Roof mounted chiller	39	37	37	27	25	22	19	12	32
EFX-B1-03 Exhaust	35	42	33	23	20	22	20	18	31
EXF-01-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-00-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-02-01 Exhaust	42	33	34	27	13	12	16	15	29
EXF-03-01 Exhausr	42	33	34	27	13	12	16	15	29
EXF-04-01 Exhaust	41	32	33	26	12	11	15	14	28
EFX-B1-02 Exhaust	38	42	27	19	8	9	10	9	27
EXF-05-01 Exhaust	40	31	32	25	11	10	14	13	27
EXF-06-01 Exhaust	39	30	31	24	10	9	13	12	26
EFX-B1-05 Exhaust	39	33	31	17	11	11	12	16	25
Roof mounted pumps	47	35	25	16	12	11	11	13	25
EXF-07-01 Exhaust	38	29	30	23	9	8	12	11	25
AHU1 exhaust	22	33	25	20	16	15	12	12	24
EXF-08-01 Exhaust	37	28	28	21	5	3	7	6	23
AHU1 fresh air inlet	10	18	3	0	0	0	0	0	4
AHU2 fresh air inlet	12	8	10	0	0	0	0	0	4
Total Free field Lp and dBA	57	56	52	39	30	28	29	29	46

Source noise levels at receiver: 1st floor Chancery Court Hotel C									
Period: Day time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-04 Exhaust	51	50	45	30	17	13	17	17	39
Roof mounted chiller	39	36	36	26	24	21	18	11	31
EFX-B1-01 Exhaust	36	31	37	20	8	9	7	9	29
EFX-B1-03 Exhaust	31	38	28	18	14	14	12	10	26
Roof mounted pumps	47	35	25	16	11	10	10	12	25
EFX-B1-02 Exhaust	34	38	22	14	2	1	2	1	23
EXF-01-01 Exhaust	39	29	28	21	3	0	3	2	23
EXF-00-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-02-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-03-01 Exhausr	38	28	27	20	2	0	2	1	22
EXF-04-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-05-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-06-01 Exhaust	37	27	26	19	1	0	1	0	21
EFX-B1-05 Exhaust	35	29	26	12	5	3	4	8	20
EXF-07-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-08-01 Exhaust	35	25	24	17	0	0	0	0	19
AHU1 exhaust	18	28	20	14	8	7	4	4	18
AHU2 fresh air inlet	17	16	23	15	2	0	0	0	16
AHU1 fresh air inlet	20	29	15	0	0	0	0	0	14
Total Free field Lp and dBA	54	51	47	34	26	23	22	21	41

Source noise levels at receiver: 1st floor Chancery Court Hotel A												
Period: Day time					Mid frequency octave bands (Hz)							
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-04 Exhaust	46	46	38	19	3	0	3	3	33
Roof mounted chiller	38	35	36	26	23	20	17	10	31
Roof mounted pumps	45	33	23	14	9	8	8	10	23
EFX-B1-01 Exhaust	32	26	30	13	0	0	0	0	22
EXF-02-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-00-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-01-01 Exhaust	36	26	25	18	0	0	0	0	20
EFX-B1-03 Exhaust	27	33	21	11	3	0	0	0	19
EXF-04-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-03-01 Exhausr	35	25	24	17	0	0	0	0	19
EXF-06-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-05-01 Exhaust	35	25	24	17	0	0	0	0	19
EFX-B1-02 Exhaust	30	33	15	7	0	0	0	0	18
EXF-08-01 Exhaust	34	24	23	16	0	0	0	0	18
EXF-07-01 Exhaust	34	24	23	16	0	0	0	0	18
AHU2 fresh air inlet	14	15	21	16	7	8	5	2	17
AHU1 fresh air inlet	18	30	20	10	5	2	0	0	17
EFX-B1-05 Exhaust	31	24	19	5	0	0	0	0	13
AHU1 exhaust	13	24	13	3	0	0	0	0	10
Total Free field Lp and dBA	50	47	42	30	23	21	18	14	36

Source noise levels at receiver: 1st floor Chancery Court Hotel									
Period: Day time					Mid frequency octave bands (Hz)				
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-04 Exhaust	53	52	47	32	21	17	21	21	41
Roof mounted chiller	40	37	37	27	25	22	19	12	32
EFX-B1-01 Exhaust	37	33	39	22	10	13	11	13	31
EFX-B1-03 Exhaust	32	40	30	20	16	18	16	14	28
EXF-02-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-00-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-01-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-03-01 Exhausr	40	31	31	24	8	6	10	9	26
EFX-B1-02 Exhaust	35	40	24	16	4	5	6	5	25
EXF-04-01 Exhaust	39	30	30	23	7	5	9	8	25
Roof mounted pumps	47	34	24	15	11	10	10	12	25
EXF-05-01 Exhaust	38	29	29	22	6	4	8	7	24
EXF-06-01 Exhaust	38	29	29	22	6	4	8	7	24
EXF-07-01 Exhaust	37	28	28	21	5	3	7	6	23
EFX-B1-05 Exhaust	36	31	28	14	7	7	8	12	22
EXF-08-01 Exhaust	36	27	27	20	4	2	6	5	22
AHU1 exhaust	20	30	22	16	12	11	8	8	20
AHU2 fresh air inlet	14	11	15	7	0	0	0	0	9
AHU1 fresh air inlet	12	21	8	0	0	0	0	0	6
Total Free field Lp and dBA	55	53	49	36	28	25	25	25	43

Source noise levels at receiver: 1st floor Chancery Court Hotel									
Period: Day time					Mid frequency octave bands (Hz)				
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-04 Exhaust	49	47	42	25	11	7	11	11	36
Roof mounted chiller	39	36	36	26	24	21	18	11	31
EFX-B1-01 Exhaust	34	29	34	17	3	3	1	3	26
Roof mounted pumps	46	34	24	15	10	9	9	11	24
EFX-B1-03 Exhaust	29	36	25	15	9	8	6	4	23
EFX-B1-02 Exhaust	32	36	19	11	0	0	0	0	21
EXF-02-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-03-01 Exhausr	37	27	26	19	1	0	1	0	21
EXF-01-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-00-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-04-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-05-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-06-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-07-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-08-01 Exhaust	35	25	24	17	0	0	0	0	19
AHU2 fresh air inlet	16	16	22	17	8	7	4	1	18
AHU1 fresh air inlet	19	31	21	9	4	1	0	0	18
EFX-B1-05 Exhaust	33	27	23	9	0	0	0	2	17
AHU1 exhaust	16	25	17	9	2	1	0	0	14
Total Free field Lp and dBA	52	49	44	32	25	22	20	17	38

Source noise levels at receiver: 268-270 High Holborn to rear grd floor												
Period:	Day time				Mid frequency octave bands (Hz)							
		63	125	250	500	1k	2k	4k	8k	dBA
AHU2 fresh air inlet		26	27	34	30	22	23	20	17	31
AHU1 fresh air inlet		31	44	35	25	20	17	15	10	31
Roof mounted chiller		38	35	35	26	24	21	18	11	31
EFX-B1-04 Exhaust		44	40	30	9	0	0	0	0	26
Roof mounted pumps		44	31	21	13	10	9	9	11	22
EFX-B1-01 Exhaust		32	23	22	2	0	0	0	0	15
EFX-B1-03 Exhaust		27	30	13	0	0	0	0	0	15
EFX-B1-02 Exhaust		30	30	7	0	0	0	0	0	15
EXF-00-01 Exhaust		33	19	13	3	0	0	0	0	10
EXF-02-01 Exhaust		33	19	13	3	0	0	0	0	10
EXF-01-01 Exhaust		33	19	13	3	0	0	0	0	10
EFX-B1-05 Exhaust		31	21	11	0	0	0	0	0	9
EXF-03-01 Exhausr		32	18	12	2	0	0	0	0	9
EXF-04-01 Exhaust		32	18	12	2	0	0	0	0	9
EXF-05-01 Exhaust		31	17	11	1	0	0	0	0	8
EXF-07-01 Exhaust		30	16	10	0	0	0	0	0	7
EXF-06-01 Exhaust		30	16	10	0	0	0	0	0	7
EXF-08-01 Exhaust		29	15	9	0	0	0	0	0	5
AHU1 exhaust		11	18	5	0	0	0	0	0	4
Total Free field Lp and dBA		49	46	40	32	27	26	23	19	37
Source noise levels at receiver: 268-270 High Holborn to rear 4th floor										
Period:	Day time				Mid frequency octave bands (Hz)							
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller		43	41	41	31	29	26	23	16	36
Roof mounted pumps		49	37	27	18	15	14	14	16	27
EFX-B1-04 Exhaust		40	36	26	5	0	0	0	0	22
AHU2 fresh air inlet		16	15	22	14	1	0	0	0	15
AHU1 fresh air inlet		19	28	14	0	0	0	0	0	13
EXF-03-01 Exhausr		34	20	14	4	0	0	0	0	12
EXF-04-01 Exhaust		34	20	14	4	0	0	0	0	12
EFX-B1-01 Exhaust		28	19	18	0	0	0	0	0	11
EFX-B1-03 Exhaust		23	26	9	0	0	0	0	0	10
EFX-B1-02 Exhaust		26	26	3	0	0	0	0	0	10
EXF-02-01 Exhaust		33	19	13	3	0	0	0	0	10
EXF-06-01 Exhaust		33	19	13	3	0	0	0	0	10
EXF-01-01 Exhaust		33	19	13	3	0	0	0	0	10
EXF-00-01 Exhaust		33	19	13	3	0	0	0	0	10
EXF-05-01 Exhaust		33	19	13	3	0	0	0	0	10
EXF-07-01 Exhaust		33	19	13	3	0	0	0	0	10
EXF-08-01 Exhaust		33	19	12	3	0	0	0	0	10
EFX-B1-05 Exhaust		27	17	7	0	0	0	0	0	5
AHU1 exhaust		7	14	1	0	0	0	0	0	0
Total Free field Lp and dBA		51	44	41	31	29	26	24	19	37
Source noise levels at receiver: 268-270 High Holborn to rear 5th floor										
Period:	Day time				Mid frequency octave bands (Hz)							
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller		44	41	41	31	28	25	22	15	36
Roof mounted pumps		50	37	27	18	14	13	13	15	28
EFX-B1-04 Exhaust		41	37	28	8	0	0	0	0	24
AHU2 fresh air inlet		14	14	19	14	3	1	0	0	14
AHU1 fresh air inlet		16	28	16	3	0	0	0	0	13
EFX-B1-01 Exhaust		29	20	20	1	0	0	0	0	13
EXF-08-01 Exhaust		34	21	15	6	0	0	0	0	12
EXF-07-01 Exhaust		34	21	15	6	0	0	0	0	12
EXF-06-01 Exhaust		34	20	15	6	0	0	0	0	12
EXF-02-01 Exhaust		34	20	15	5	0	0	0	0	12
EXF-04-01 Exhaust		34	20	15	5	0	0	0	0	12
EXF-05-01 Exhaust		34	20	15	5	0	0	0	0	12
EXF-03-01 Exhausr		34	20	15	5	0	0	0	0	12
EFX-B1-03 Exhaust		24	27	11	0	0	0	0	0	12
EFX-B1-02 Exhaust		27	27	5	0	0	0	0	0	12
EXF-01-01 Exhaust		33	20	14	5	0	0	0	0	11
EXF-00-01 Exhaust		32	19	13	4	0	0	0	0	10
EFX-B1-05 Exhaust		28	18	9	0	0	0	0	0	6
AHU1 exhaust		8	15	3	0	0	0	0	0	0
Total Free field Lp and dBA		52	44	42	31	28	25	23	18	37

Source noise levels at receiver: 1st floor Chancery Court Hotel G										
Period: Day time				Mid frequency octave bands (Hz)						
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	57	47	40	34	31	30	30	32	40
EFX-B1-04 Exhaust	51	50	45	30	17	13	17	17	39
EXF-01-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-00-01 Exhaust	48	40	42	35	22	23	27	26	37
EXF-02-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-03-01 Exhausr	45	37	38	31	17	18	22	21	33
Roof mounted chiller	37	34	34	26	24	21	18	11	30
EXF-04-01 Exhaust	43	34	35	28	14	13	17	16	30
EFX-B1-01 Exhaust	36	31	37	20	8	9	7	9	29
EXF-05-01 Exhaust	42	33	33	26	10	8	12	11	28
EXF-06-01 Exhaust	40	31	31	24	8	6	10	9	26
EFX-B1-03 Exhaust	31	38	28	18	14	14	12	10	26
EFX-B1-02 Exhaust	34	38	22	14	2	1	2	1	23
EXF-07-01 Exhaust	39	29	28	21	3	0	3	2	23
EXF-08-01 Exhaust	38	28	27	20	2	0	2	1	22
EFX-B1-05 Exhaust	35	29	26	12	5	3	4	8	20
AHU1 exhaust	18	28	20	14	8	7	4	4	18
AHU1 fresh air inlet	4	10	0	0	0	0	0	0	0
AHU2 fresh air inlet	6	0	1	0	0	0	0	0	0
Total Free field Lp and dBA	60	53	50	42	33	33	35	35	46

Source noise levels at receiver: 2nd floor Chancery Court Hotel G									
Period: Day time				Mid frequency octave bands (Hz)						
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	57	47	40	34	31	30	30	32	40
EXF-01-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-02-01 Exhaust	48	40	43	36	23	24	28	27	38
EFX-B1-04 Exhaust	50	49	44	29	16	12	16	16	38
EXF-00-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-03-01 Exhausr	47	38	40	33	20	21	25	24	35
EXF-04-01 Exhaust	45	37	38	31	17	18	22	21	33
Roof mounted chiller	38	35	35	27	25	22	19	12	31
EXF-05-01 Exhaust	43	34	35	28	14	13	17	16	30
EFX-B1-01 Exhaust	35	30	36	19	7	8	6	8	28
EXF-06-01 Exhaust	42	33	33	26	10	8	12	11	28
EXF-07-01 Exhaust	40	31	31	24	8	6	10	9	26
EFX-B1-03 Exhaust	30	37	27	17	13	13	11	9	25
EXF-08-01 Exhaust	39	29	28	21	3	0	3	2	23
EFX-B1-02 Exhaust	33	37	21	13	1	0	1	0	22
EFX-B1-05 Exhaust	34	28	25	11	4	2	3	7	19
AHU1 exhaust	17	27	19	13	7	6	3	3	17
AHU1 fresh air inlet	3	9	0	0	0	0	0	0	0
AHU2 fresh air inlet	5	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	60	53	51	43	34	33	35	35	47

Source noise levels at receiver: 3rd floor Chancery Court Hotel G									
Period: Day time				Mid frequency octave bands (Hz)						
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	58	48	41	35	32	31	31	33	41
EXF-03-01 Exhausr	48	40	43	36	23	24	28	27	38
EXF-02-01 Exhaust	48	40	43	36	23	24	28	27	38
EFX-B1-04 Exhaust	49	48	43	28	15	11	15	15	37
EXF-04-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-01-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-05-01 Exhaust	45	37	38	31	17	18	22	21	33
Roof mounted chiller	39	37	37	28	26	23	20	13	33
EXF-00-01 Exhaust	44	35	36	29	15	14	18	17	31
EXF-06-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-07-01 Exhaust	42	33	33	26	10	8	12	11	28
EFX-B1-01 Exhaust	34	29	35	18	6	7	5	7	27
EXF-08-01 Exhaust	40	31	31	24	8	6	10	9	26
EFX-B1-03 Exhaust	29	36	26	16	12	12	10	8	24
EFX-B1-02 Exhaust	32	36	20	12	0	0	0	0	21
EFX-B1-05 Exhaust	33	27	24	10	3	1	2	6	18
AHU1 exhaust	16	26	18	12	6	5	2	2	16
AHU1 fresh air inlet	3	9	0	0	0	0	0	0	0
AHU2 fresh air inlet	5	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	60	53	51	43	34	34	36	36	47

Source noise levels at receiver: 4th floor Chancery Court Hotel G											
Period:	Day time			Mid frequency octave bands (Hz)							
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps		57	49	42	36	33	32	32	34	42
EXF-03-01 Exhausr		48	40	43	36	23	24	28	27	38
EXF-04-01 Exhaust		48	40	43	36	23	24	28	27	38
EFX-B1-04 Exhaust		48	47	42	27	14	10	14	14	36
EXF-02-01 Exhaust		47	38	40	33	20	21	25	24	35
EXF-05-01 Exhaust		47	38	40	33	20	21	25	24	35
EXF-01-01 Exhaust		45	37	38	31	17	18	22	21	33
EXF-06-01 Exhaust		45	37	38	31	17	18	22	21	33
Roof mounted chiller		40	37	37	28	26	23	20	13	33
EXF-00-01 Exhaust		43	34	35	28	14	13	17	16	30
EXF-07-01 Exhaust		43	34	35	28	14	13	17	16	30
EXF-08-01 Exhaust		42	33	33	26	10	8	12	11	28
EFX-B1-01 Exhaust		33	28	34	17	5	6	4	6	26
EFX-B1-03 Exhaust		28	35	25	15	11	11	9	7	23
EFX-B1-02 Exhaust		31	35	19	11	0	0	0	0	20
EFX-B1-05 Exhaust		32	26	23	9	2	0	1	5	17
AHU1 exhaust		15	25	17	11	5	4	1	1	15
AHU1 fresh air inlet		2	8	0	0	0	0	0	0	0
AHU2 fresh air inlet		4	0	0	0	0	0	0	0	0
Total Free field Lp and dBA		60	53	51	43	35	34	36	36	47

Source noise levels at receiver: 5th floor Chancery Court Hotel G										
Period:	Day time			Mid frequency octave bands (Hz)						
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps		56	47	43	37	34	33	33	35	42
EXF-05-01 Exhaust		48	40	43	36	23	24	28	27	38
EXF-04-01 Exhaust		48	40	43	36	23	24	28	27	38
EXF-03-01 Exhausr		47	38	40	33	20	21	25	24	35
EXF-06-01 Exhaust		47	38	40	33	20	21	25	24	35
EFX-B1-04 Exhaust		47	46	41	26	13	9	13	13	35
Roof mounted chiller		42	39	39	29	27	24	21	14	34
EXF-02-01 Exhaust		45	37	38	31	17	18	22	21	33
EXF-07-01 Exhaust		45	37	38	31	17	18	22	21	33
EXF-08-01 Exhaust		43	34	35	28	14	13	17	16	30
EXF-01-01 Exhaust		43	34	35	28	14	13	17	16	30
EXF-00-01 Exhaust		41	32	32	25	9	7	11	10	27
EFX-B1-01 Exhaust		32	27	33	16	4	5	3	5	25
EFX-B1-03 Exhaust		27	34	24	14	10	10	8	6	22
EFX-B1-02 Exhaust		30	34	18	10	0	0	0	0	19
EFX-B1-05 Exhaust		31	25	22	8	1	0	0	4	16
AHU1 exhaust		14	24	16	10	4	3	0	0	13
AHU1 fresh air inlet		2	8	0	0	0	0	0	0	0
AHU2 fresh air inlet		4	0	0	0	0	0	0	0	0
Total Free field Lp and dBA		59	52	51	43	36	35	37	37	47

Source noise levels at receiver: 6th floor Chancery Court Hotel G										
Period:	Day time			Mid frequency octave bands (Hz)						
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps		60	50	43	37	34	33	33	35	43
EXF-05-01 Exhaust		48	40	43	36	23	24	28	27	38
EXF-06-01 Exhaust		48	40	43	36	23	24	28	27	38
Roof mounted chiller		43	40	41	31	27	24	21	14	35
EXF-07-01 Exhaust		47	38	40	33	20	21	25	24	35
EXF-04-01 Exhaust		47	38	40	33	20	21	25	24	35
EXF-08-01 Exhaust		45	37	38	31	17	18	22	21	33
EXF-03-01 Exhausr		45	37	38	31	17	18	22	21	33
EFX-B1-04 Exhaust		46	44	39	22	8	4	8	8	33
EXF-02-01 Exhaust		43	34	35	28	14	13	17	16	30
EXF-01-01 Exhaust		41	32	32	25	9	7	11	10	27
EXF-00-01 Exhaust		40	31	31	24	8	6	10	9	26
EFX-B1-01 Exhaust		31	26	31	14	0	0	0	0	23
EFX-B1-03 Exhaust		26	33	22	12	6	5	3	1	20
EFX-B1-02 Exhaust		29	33	16	8	0	0	0	0	18
EFX-B1-05 Exhaust		30	24	20	6	0	0	0	0	14
AHU1 exhaust		13	22	14	6	0	0	0	0	10
AHU1 fresh air inlet		1	7	0	0	0	0	0	0	0
AHU2 fresh air inlet		3	0	0	0	0	0	0	0	0
Total Free field Lp and dBA		61	53	51	43	36	35	36	37	47

Source noise levels at receiver: 7th floor Chancery Court Hotel G												
Period:	Day time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps					60	50	43	37	34	33	33	35	43
EXF-06-01 Exhaust					48	40	43	36	23	24	28	27	38
EXF-07-01 Exhaust					48	40	43	36	23	24	28	27	38
Roof mounted chiller					45	42	43	33	28	24	21	14	37
EXF-05-01 Exhaust					47	38	40	33	20	21	25	24	35
EXF-08-01 Exhaust					47	38	40	33	20	21	25	24	35
EXF-04-01 Exhaust					45	37	38	31	17	18	22	21	33
EFX-B1-04 Exhaust					46	44	39	22	8	4	8	8	33
EXF-03-01 Exhausr					43	34	35	28	14	13	17	16	30
EXF-02-01 Exhaust					41	32	32	25	9	7	11	10	27
EXF-01-01 Exhaust					40	31	31	24	8	6	10	9	26
EXF-00-01 Exhaust					39	29	28	21	3	0	3	2	23
EFX-B1-01 Exhaust					31	26	31	14	0	0	0	0	23
EFX-B1-03 Exhaust					26	33	22	12	6	5	3	1	20
EFX-B1-02 Exhaust					29	33	16	8	0	0	0	0	18
EFX-B1-05 Exhaust					30	24	20	6	0	0	0	0	14
AHU1 exhaust					13	22	14	6	0	0	0	0	10
AHU1 fresh air inlet					0	6	0	0	0	0	0	0	0
AHU2 fresh air inlet					2	0	0	0	0	0	0	0	0
Total Free field Lp and dBA					61	53	51	43	36	35	36	37	47

Source noise levels at receiver: 8th floor Chancery Court Hotel G												
Period:	Day time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps					60	50	43	37	34	33	33	35	43
Roof mounted chiller					47	46	47	38	34	28	22	14	41
EXF-08-01 Exhaust					48	40	43	36	23	24	28	27	38
EXF-07-01 Exhaust					48	40	42	35	22	23	27	26	37
EXF-06-01 Exhaust					47	38	40	33	20	21	25	24	35
EFX-B1-04 Exhaust					45	43	38	21	7	3	7	7	32
EXF-05-01 Exhaust					44	35	36	29	15	14	18	17	31
EXF-04-01 Exhaust					43	34	35	28	14	13	17	16	30
EXF-03-01 Exhausr					41	32	32	25	9	7	11	10	27
EXF-02-01 Exhaust					40	30	29	22	4	0	4	3	24
EXF-01-01 Exhaust					39	29	28	21	3	0	3	2	23
EFX-B1-01 Exhaust					30	25	30	13	0	0	0	0	22
EXF-00-01 Exhaust					37	27	26	19	1	0	1	0	21
EFX-B1-03 Exhaust					25	32	21	11	5	4	2	0	19
EFX-B1-02 Exhaust					28	32	15	7	0	0	0	0	17
EFX-B1-05 Exhaust					29	23	19	5	0	0	0	0	13
AHU1 exhaust					12	21	13	5	0	0	0	0	9
AHU1 fresh air inlet					0	6	0	0	0	0	0	0	0
AHU2 fresh air inlet					2	0	0	0	0	0	0	0	0
Total Free field Lp and dBA					61	53	51	44	37	35	36	36	47

APPENDIX E

CALCULATIONS –SUMMARY (2000-2200 HOURS)

Overall receptor listings													
Period:	Night-time					Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Top floor Chancery Court Hotel F					64	55	55	48	46	43	41	39	52
8th floor Chancery Court Hotel G					61	52	50	43	36	35	36	36	47
6th floor Chancery Court Hotel G					61	52	50	43	35	35	36	37	47
7th floor Chancery Court Hotel G					61	52	50	43	35	35	36	37	47
Top floor Chancery Court Hotel E					61	52	51	43	38	34	30	26	46
5th floor Chancery Court Hotel G					59	50	50	43	35	35	36	37	46
4th floor Chancery Court Hotel G					59	51	50	43	35	34	36	36	46
3rd floor Chancery Court Hotel G					60	51	50	43	34	33	35	36	46
2nd floor Chancery Court Hotel G					59	50	50	42	33	33	35	35	46
1st floor Chancery Court Hotel G					59	50	49	42	33	32	34	35	45
1st floor Chancery Court Hotel F					58	51	48	40	33	32	33	34	44
Top floor Chancery Court Hotel D					59	50	48	39	34	29	24	21	43
Top floor Chancery Court Hotel C					57	48	47	38	32	27	22	18	42
1st floor Chancery Court Hotel E					53	48	46	37	27	27	27	26	41
Top floor Chancery Court Hotel B					55	46	45	36	31	25	20	15	40
Top floor Chancery Court Hotel A					54	45	43	34	29	24	18	14	38
1st floor Chancery Court Hotel					51	46	43	34	24	23	23	22	38
268-270 High Holborn to rear grd floor					47	45	39	32	26	25	22	19	36
1st floor Chancery Court Hotel C					51	44	41	31	22	20	19	17	36
1st floor Chancery Court Hotel					49	43	39	30	21	19	17	14	34
268-270 High Holborn to rear 4th floor					50	41	38	28	25	23	20	17	34
268-270 High Holborn to rear 5th floor					51	41	38	28	24	22	19	16	34
1st floor Chancery Court Hotel A					48	41	37	29	20	17	15	12	32

Source noise levels at receiver: Top floor Chancery Court Hotel F									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	51	51	54	47	45	42	39	32	51
Roof mounted pumps	63	53	46	40	37	36	36	38	46
EXF-08-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-07-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-06-01 Exhaust	44	36	37	30	16	17	21	20	32
EXF-05-01 Exhaust	43	35	36	29	15	16	20	19	31
EXF-04-01 Exhaust	42	33	34	27	13	12	16	15	29
EXF-03-01 Exhausr	41	32	33	26	12	11	15	14	28
EXF-02-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-01-01 Exhaust	39	30	30	23	7	5	9	8	25
EXF-00-01 Exhaust	37	27	26	19	1	0	1	0	21
EFX-B1-01 Exhaust	30	24	28	11	0	0	0	0	20
EFX-B1-03 Exhaust	25	31	19	9	1	0	0	0	17
EFX-B1-02 Exhaust	28	31	13	5	0	0	0	0	16
EFX-B1-05 Exhaust	29	22	17	3	0	0	0	0	11
AHU1 exhaust	11	22	11	1	0	0	0	0	8
AHU1 fresh air inlet	1	8	0	0	0	0	0	0	0
AHU2 fresh air inlet	3	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	64	55	55	48	46	43	41	39	52

Source noise levels at receiver: Top floor Chancery Court Hotel E									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	49	48	50	42	38	33	27	17	45
Roof mounted pumps	60	49	40	32	27	24	21	20	39
EXF-08-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-07-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-06-01 Exhaust	42	33	34	27	13	12	16	15	29
EXF-05-01 Exhaust	41	32	33	26	12	11	15	14	28
EXF-04-01 Exhaust	41	32	33	26	12	11	15	14	28
EXF-03-01 Exhausr	40	31	32	25	11	10	14	13	27
EXF-02-01 Exhaust	39	30	31	24	10	9	13	12	26
EXF-01-01 Exhaust	38	29	30	23	9	8	12	11	25
EXF-00-01 Exhaust	37	28	28	21	5	3	7	6	23
EFX-B1-01 Exhaust	30	24	28	11	0	0	0	0	20
EFX-B1-03 Exhaust	25	31	19	9	1	0	0	0	17
EFX-B1-02 Exhaust	28	31	13	5	0	0	0	0	16
EFX-B1-05 Exhaust	29	22	17	3	0	0	0	0	11
AHU1 exhaust	11	22	11	1	0	0	0	0	8
AHU1 fresh air inlet	5	12	0	0	0	0	0	0	0
AHU2 fresh air inlet	7	2	4	0	0	0	0	0	0
Total Free field Lp and dBA	61	52	51	43	38	34	30	26	46

Source noise levels at receiver: Top floor Chancery Court Hotel D									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	47	46	47	38	34	28	22	12	41
Roof mounted pumps	58	46	37	29	23	19	16	18	36
EXF-08-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-07-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-06-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-05-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-04-01 Exhaust	39	30	30	23	7	5	9	8	25
EXF-03-01 Exhausr	38	29	29	22	6	4	8	7	24
EXF-02-01 Exhaust	38	29	29	22	6	4	8	7	24
EXF-01-01 Exhaust	37	28	28	21	5	3	7	6	23
EXF-00-01 Exhaust	36	27	27	20	4	2	6	5	22
EFX-B1-01 Exhaust	30	24	28	11	0	0	0	0	20
EFX-B1-03 Exhaust	25	31	19	9	1	0	0	0	17
EFX-B1-02 Exhaust	28	31	13	5	0	0	0	0	16
EFX-B1-05 Exhaust	29	22	17	3	0	0	0	0	11
AHU1 exhaust	11	22	11	1	0	0	0	0	8
AHU1 fresh air inlet	6	15	2	0	0	0	0	0	0
AHU2 fresh air inlet	8	5	9	1	0	0	0	0	0
Total Free field Lp and dBA	59	50	48	39	34	29	24	21	43

Source noise levels at receiver: Top floor Chancery Court Hotel C									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	45	44	46	37	32	27	21	11	40
Roof mounted pumps	56	44	35	26	20	16	14	16	34
EXF-08-01 Exhaust	39	29	28	21	3	0	3	2	23
EXF-07-01 Exhaust	39	29	28	21	3	0	3	2	23
EXF-06-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-05-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-04-01 Exhaust	38	28	27	20	2	0	2	1	22
EFX-B1-01 Exhaust	30	25	30	13	0	0	0	0	22
EXF-02-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-03-01 Exhausr	37	27	26	19	1	0	1	0	21
EXF-01-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-00-01 Exhaust	35	25	24	17	0	0	0	0	19
EFX-B1-03 Exhaust	25	32	21	11	5	4	2	0	19
EFX-B1-02 Exhaust	28	32	15	7	0	0	0	0	17
EFX-B1-05 Exhaust	29	23	19	5	0	0	0	0	13
AHU2 fresh air inlet	11	10	17	9	0	0	0	0	11
AHU1 exhaust	12	21	13	5	0	0	0	0	9
AHU1 fresh air inlet	14	23	9	0	0	0	0	0	8
Total Free field Lp and dBA	57	48	47	38	32	27	22	18	42

Source noise levels at receiver: Top floor Chancery Court Hotel B									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	43	42	44	35	31	25	19	9	38
Roof mounted pumps	54	42	32	24	18	14	12	14	32
EXF-08-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-07-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-06-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-05-01 Exhaust	37	27	26	19	1	0	1	0	21
EFX-B1-01 Exhaust	29	24	29	12	0	0	0	0	21
EXF-04-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-02-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-03-01 Exhausr	36	26	25	18	0	0	0	0	20
EXF-01-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-00-01 Exhaust	34	24	23	16	0	0	0	0	18
EFX-B1-03 Exhaust	24	31	20	10	4	3	1	0	18
EFX-B1-02 Exhaust	27	31	14	6	0	0	0	0	16
EFX-B1-05 Exhaust	28	22	18	4	0	0	0	0	12
AHU2 fresh air inlet	10	10	15	10	0	0	0	0	10
AHU1 fresh air inlet	12	24	12	0	0	0	0	0	10
AHU1 exhaust	11	20	12	4	0	0	0	0	8
Total Free field Lp and dBA	55	46	45	36	31	25	20	15	40

Source noise levels at receiver: Top floor Chancery Court Hotel A									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	42	41	42	33	29	23	17	8	36
Roof mounted pumps	53	41	32	23	17	14	11	13	31
EXF-08-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-07-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-06-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-05-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-02-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-04-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-03-01 Exhausr	35	25	24	17	0	0	0	0	19
EFX-B1-01 Exhaust	28	22	26	9	0	0	0	0	18
EXF-01-01 Exhaust	34	24	23	16	0	0	0	0	18
EXF-00-01 Exhaust	34	24	23	16	0	0	0	0	18
EFX-B1-03 Exhaust	23	29	17	7	0	0	0	0	15
EFX-B1-02 Exhaust	26	29	11	3	0	0	0	0	14
AHU2 fresh air inlet	10	10	16	11	2	1	0	0	12
AHU1 fresh air inlet	13	25	15	3	0	0	0	0	11
EFX-B1-05 Exhaust	27	20	15	1	0	0	0	0	9
AHU1 exhaust	9	20	9	0	0	0	0	0	5
Total Free field Lp and dBA	54	45	43	34	29	24	18	14	38

Source noise levels at receiver: 1st floor Chancery Court Hotel F									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	57	47	40	34	31	30	30	32	40
Roof mounted chiller	41	40	41	32	27	21	15	8	35
EXF-00-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-01-01 Exhaust	45	37	38	31	17	18	22	21	33
EFX-B1-01 Exhaust	39	34	41	24	13	16	14	16	33
EXF-02-01 Exhaust	44	36	37	30	16	17	21	20	32
EXF-03-01 Exhausr	43	35	36	29	15	16	20	19	31
EXF-04-01 Exhaust	42	34	35	28	14	15	19	18	30
EFX-B1-03 Exhaust	34	41	32	22	19	21	19	17	30
EXF-05-01 Exhaust	41	32	33	26	12	11	15	14	28
EFX-B1-02 Exhaust	37	41	26	18	7	8	9	8	26
EXF-06-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-07-01 Exhaust	39	30	30	23	7	5	9	8	25
EFX-B1-05 Exhaust	38	32	30	16	10	10	11	15	24
EXF-08-01 Exhaust	38	29	29	22	6	4	8	7	24
AHU1 exhaust	21	32	24	19	15	14	11	11	23
AHU2 fresh air inlet	9	4	5	0	0	0	0	0	0
AHU1 fresh air inlet	7	14	0	0	0	0	0	0	0
Total Free field Lp and dBA	58	51	48	40	33	32	33	34	44

Source noise levels at receiver: 1st floor Chancery Court Hotel E									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-01 Exhaust	40	35	42	25	14	17	15	17	34
EFX-B1-03 Exhaust	35	42	33	23	20	22	20	18	31
EXF-00-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-01-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-03-01 Exhausr	42	33	34	27	13	12	16	15	29
EXF-02-01 Exhaust	42	33	34	27	13	12	16	15	29
Roof mounted chiller	35	33	33	23	21	18	15	8	28
EXF-04-01 Exhaust	41	32	33	26	12	11	15	14	28
EFX-B1-02 Exhaust	38	42	27	19	8	9	10	9	27
EXF-05-01 Exhaust	40	31	32	25	11	10	14	13	27
EXF-06-01 Exhaust	39	30	31	24	10	9	13	12	26
EFX-B1-05 Exhaust	39	33	31	17	11	11	12	16	25
Roof mounted pumps	47	35	25	16	12	11	11	13	25
EXF-07-01 Exhaust	38	29	30	23	9	8	12	11	25
AHU1 exhaust	22	33	25	20	16	15	12	12	24
EXF-08-01 Exhaust	37	28	28	21	5	3	7	6	23
AHU1 fresh air inlet	10	18	3	0	0	0	0	0	4
AHU2 fresh air inlet	12	8	10	0	0	0	0	0	4
Total Free field Lp and dBA	53	48	46	37	27	27	27	26	41

Source noise levels at receiver: 1st floor Chancery Court Hotel C									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-01 Exhaust	36	31	37	20	8	9	7	9	29
Roof mounted chiller	35	32	32	22	20	17	14	7	27
EFX-B1-03 Exhaust	31	38	28	18	14	14	12	10	26
Roof mounted pumps	47	35	25	16	11	10	10	12	25
EFX-B1-02 Exhaust	34	38	22	14	2	1	2	1	23
EXF-01-01 Exhaust	39	29	28	21	3	0	3	2	23
EXF-02-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-04-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-03-01 Exhausr	38	28	27	20	2	0	2	1	22
EXF-00-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-05-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-06-01 Exhaust	37	27	26	19	1	0	1	0	21
EFX-B1-05 Exhaust	35	29	26	12	5	3	4	8	20
EXF-07-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-08-01 Exhaust	35	25	24	17	0	0	0	0	19
AHU1 exhaust	18	28	20	14	8	7	4	4	18
AHU2 fresh air inlet	17	16	23	15	2	0	0	0	16
AHU1 fresh air inlet	20	29	15	0	0	0	0	0	14
Total Free field Lp and dBA	51	44	41	31	22	20	19	17	36

Source noise levels at receiver: 1st floor Chancery Court Hotel A									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	34	31	32	22	19	16	13	6	27
Roof mounted pumps	45	33	23	14	9	8	8	10	23
EFX-B1-01 Exhaust	32	26	30	13	0	0	0	0	22
EXF-00-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-02-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-01-01 Exhaust	36	26	25	18	0	0	0	0	20
EFX-B1-03 Exhaust	27	33	21	11	3	0	0	0	19
EXF-04-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-03-01 Exhausr	35	25	24	17	0	0	0	0	19
EXF-06-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-05-01 Exhaust	35	25	24	17	0	0	0	0	19
EFX-B1-02 Exhaust	30	33	15	7	0	0	0	0	18
EXF-08-01 Exhaust	34	24	23	16	0	0	0	0	18
EXF-07-01 Exhaust	34	24	23	16	0	0	0	0	18
AHU2 fresh air inlet	14	15	21	16	7	8	5	2	17
AHU1 fresh air inlet	18	30	20	10	5	2	0	0	17
EFX-B1-05 Exhaust	31	24	19	5	0	0	0	0	13
AHU1 exhaust	13	24	13	3	0	0	0	0	10
Total Free field Lp and dBA	48	41	37	29	20	17	15	12	32

Source noise levels at receiver: 1st floor Chancery Court Hotel									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-01 Exhaust	37	33	39	22	10	13	11	13	31
Roof mounted chiller	36	33	33	23	21	18	15	8	28
EFX-B1-03 Exhaust	32	40	30	20	16	18	16	14	28
EXF-00-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-02-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-01-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-03-01 Exhausr	40	31	31	24	8	6	10	9	26
EFX-B1-02 Exhaust	35	40	24	16	4	5	6	5	25
EXF-04-01 Exhaust	39	30	30	23	7	5	9	8	25
Roof mounted pumps	47	34	24	15	11	10	10	12	25
EXF-05-01 Exhaust	38	29	29	22	6	4	8	7	24
EXF-06-01 Exhaust	38	29	29	22	6	4	8	7	24
EXF-07-01 Exhaust	37	28	28	21	5	3	7	6	23
EFX-B1-05 Exhaust	36	31	28	14	7	7	8	12	22
EXF-08-01 Exhaust	36	27	27	20	4	2	6	5	22
AHU1 exhaust	20	30	22	16	12	11	8	8	20
AHU2 fresh air inlet	14	11	15	7	0	0	0	0	9
AHU1 fresh air inlet	12	21	8	0	0	0	0	0	6
Total Free field Lp and dBA	51	46	43	34	24	23	23	22	38

Source noise levels at receiver: 1st floor Chancery Court Hotel									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller	35	32	32	22	20	17	14	7	27
EFX-B1-01 Exhaust	34	29	34	17	3	3	1	3	26
Roof mounted pumps	46	34	24	15	10	9	9	11	24
EFX-B1-03 Exhaust	29	36	25	15	9	8	6	4	23
EFX-B1-02 Exhaust	32	36	19	11	0	0	0	0	21
EXF-00-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-03-01 Exhausr	37	27	26	19	1	0	1	0	21
EXF-01-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-02-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-04-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-05-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-06-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-07-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-08-01 Exhaust	35	25	24	17	0	0	0	0	19
AHU2 fresh air inlet	16	16	22	17	8	7	4	1	18
AHU1 fresh air inlet	19	31	21	9	4	1	0	0	18
EFX-B1-05 Exhaust	33	27	23	9	0	0	0	2	17
AHU1 exhaust	16	25	17	9	2	1	0	0	14
Total Free field Lp and dBA	49	43	39	30	21	19	17	14	34

Source noise levels at receiver: 268-270 High Holborn to rear grd floor												
Period:	Night-time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
AHU2 fresh air inlet					26	27	34	30	22	23	20	17	31
AHU1 fresh air inlet					31	44	35	25	20	17	15	10	31
Roof mounted chiller					34	31	31	22	20	17	14	7	27
Roof mounted pumps					44	31	21	13	10	9	9	11	22
EFX-B1-01 Exhaust					32	23	22	2	0	0	0	0	15
EFX-B1-03 Exhaust					27	30	13	0	0	0	0	0	15
EFX-B1-02 Exhaust					30	30	7	0	0	0	0	0	15
EXF-02-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-00-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-01-01 Exhaust					33	19	13	3	0	0	0	0	10
EFX-B1-05 Exhaust					31	21	11	0	0	0	0	0	9
EXF-03-01 Exhausr					32	18	12	2	0	0	0	0	9
EXF-04-01 Exhaust					32	18	12	2	0	0	0	0	9
EXF-05-01 Exhaust					31	17	11	1	0	0	0	0	8
EXF-07-01 Exhaust					30	16	10	0	0	0	0	0	7
EXF-06-01 Exhaust					30	16	10	0	0	0	0	0	7
EXF-08-01 Exhaust					29	15	9	0	0	0	0	0	5
AHU1 exhaust					11	18	5	0	0	0	0	0	4
Total Free field Lp and dBA					47	45	39	32	26	25	22	19	36
Source noise levels at receiver: 268-270 High Holborn to rear 4th floor												
Period:	Night-time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller					39	37	37	27	25	22	19	12	32
Roof mounted pumps					49	37	27	18	15	14	14	16	27
AHU2 fresh air inlet					16	15	22	14	1	0	0	0	15
AHU1 fresh air inlet					19	28	14	0	0	0	0	0	13
EXF-03-01 Exhausr					34	20	14	4	0	0	0	0	12
EXF-04-01 Exhaust					34	20	14	4	0	0	0	0	12
EFX-B1-01 Exhaust					28	19	18	0	0	0	0	0	11
EFX-B1-03 Exhaust					23	26	9	0	0	0	0	0	10
EFX-B1-02 Exhaust					26	26	3	0	0	0	0	0	10
EXF-00-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-06-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-01-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-02-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-05-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-07-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-08-01 Exhaust					33	19	12	3	0	0	0	0	10
EFX-B1-05 Exhaust					27	17	7	0	0	0	0	0	5
AHU1 exhaust					7	14	1	0	0	0	0	0	0
Total Free field Lp and dBA					50	41	38	28	25	23	20	17	34
Source noise levels at receiver: 268-270 High Holborn to rear 5th floor												
Period:	Night-time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted chiller					40	37	37	27	24	21	18	11	32
Roof mounted pumps					50	37	27	18	14	13	13	15	28
AHU2 fresh air inlet					14	14	19	14	3	1	0	0	14
AHU1 fresh air inlet					16	28	16	3	0	0	0	0	13
EFX-B1-01 Exhaust					29	20	20	1	0	0	0	0	13
EXF-08-01 Exhaust					34	21	15	6	0	0	0	0	12
EXF-07-01 Exhaust					34	21	15	6	0	0	0	0	12
EXF-06-01 Exhaust					34	20	15	6	0	0	0	0	12
EXF-02-01 Exhaust					34	20	15	5	0	0	0	0	12
EXF-03-01 Exhausr					34	20	15	5	0	0	0	0	12
EXF-05-01 Exhaust					34	20	15	5	0	0	0	0	12
EXF-04-01 Exhaust					34	20	15	5	0	0	0	0	12
EFX-B1-03 Exhaust					24	27	11	0	0	0	0	0	12
EFX-B1-02 Exhaust					27	27	5	0	0	0	0	0	12
EXF-01-01 Exhaust					33	20	14	5	0	0	0	0	11
EXF-00-01 Exhaust					32	19	13	4	0	0	0	0	10
EFX-B1-05 Exhaust					28	18	9	0	0	0	0	0	6
AHU1 exhaust					8	15	3	0	0	0	0	0	0
Total Free field Lp and dBA					51	41	38	28	24	22	19	16	34

Source noise levels at receiver: 1st floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	57	47	40	34	31	30	30	32	40
EXF-01-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-00-01 Exhaust	48	40	42	35	22	23	27	26	37
EXF-02-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-03-01 Exhausr	45	37	38	31	17	18	22	21	33
EXF-04-01 Exhaust	43	34	35	28	14	13	17	16	30
EFX-B1-01 Exhaust	36	31	37	20	8	9	7	9	29
EXF-05-01 Exhaust	42	33	33	26	10	8	12	11	28
Roof mounted chiller	33	30	30	22	20	17	14	7	26
EXF-06-01 Exhaust	40	31	31	24	8	6	10	9	26
EFX-B1-03 Exhaust	31	38	28	18	14	14	12	10	26
EFX-B1-02 Exhaust	34	38	22	14	2	1	2	1	23
EXF-07-01 Exhaust	39	29	28	21	3	0	3	2	23
EXF-08-01 Exhaust	38	28	27	20	2	0	2	1	22
EFX-B1-05 Exhaust	35	29	26	12	5	3	4	8	20
AHU1 exhaust	18	28	20	14	8	7	4	4	18
AHU1 fresh air inlet	4	10	0	0	0	0	0	0	0
AHU2 fresh air inlet	6	0	1	0	0	0	0	0	0
Total Free field Lp and dBA	59	50	49	42	33	32	34	35	45

Source noise levels at receiver: 2nd floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	57	47	40	34	31	30	30	32	40
EXF-01-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-02-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-00-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-03-01 Exhausr	47	38	40	33	20	21	25	24	35
EXF-04-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-05-01 Exhaust	43	34	35	28	14	13	17	16	30
EFX-B1-01 Exhaust	35	30	36	19	7	8	6	8	28
EXF-06-01 Exhaust	42	33	33	26	10	8	12	11	28
Roof mounted chiller	34	31	31	23	21	18	15	8	27
EXF-07-01 Exhaust	40	31	31	24	8	6	10	9	26
EFX-B1-03 Exhaust	30	37	27	17	13	13	11	9	25
EXF-08-01 Exhaust	39	29	28	21	3	0	3	2	23
EFX-B1-02 Exhaust	33	37	21	13	1	0	1	0	22
EFX-B1-05 Exhaust	34	28	25	11	4	2	3	7	19
AHU1 exhaust	17	27	19	13	7	6	3	3	17
AHU1 fresh air inlet	3	9	0	0	0	0	0	0	0
AHU2 fresh air inlet	5	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	59	50	50	42	33	33	35	35	46

Source noise levels at receiver: 3rd floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	58	48	41	35	32	31	31	33	41
EXF-02-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-03-01 Exhausr	48	40	43	36	23	24	28	27	38
EXF-01-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-04-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-05-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-00-01 Exhaust	44	35	36	29	15	14	18	17	31
EXF-06-01 Exhaust	43	34	35	28	14	13	17	16	30
Roof mounted chiller	35	33	33	24	22	19	16	9	29
EXF-07-01 Exhaust	42	33	33	26	10	8	12	11	28
EFX-B1-01 Exhaust	34	29	35	18	6	7	5	7	27
EXF-08-01 Exhaust	40	31	31	24	8	6	10	9	26
EFX-B1-03 Exhaust	29	36	26	16	12	12	10	8	24
EFX-B1-02 Exhaust	32	36	20	12	0	0	0	0	21
EFX-B1-05 Exhaust	33	27	24	10	3	1	2	6	18
AHU1 exhaust	16	26	18	12	6	5	2	2	16
AHU1 fresh air inlet	3	9	0	0	0	0	0	0	0
AHU2 fresh air inlet	5	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	60	51	50	43	34	33	35	36	46

Source noise levels at receiver: 4th floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	57	49	42	36	33	32	32	34	42
EXF-03-01 Exhausr	48	40	43	36	23	24	28	27	38
EXF-04-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-02-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-05-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-01-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-06-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-00-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-07-01 Exhaust	43	34	35	28	14	13	17	16	30
Roof mounted chiller	36	33	33	24	22	19	16	9	29
EXF-08-01 Exhaust	42	33	33	26	10	8	12	11	28
EFX-B1-01 Exhaust	33	28	34	17	5	6	4	6	26
EFX-B1-03 Exhaust	28	35	25	15	11	11	9	7	23
EFX-B1-02 Exhaust	31	35	19	11	0	0	0	0	20
EFX-B1-05 Exhaust	32	26	23	9	2	0	1	5	17
AHU1 exhaust	15	25	17	11	5	4	1	1	15
AHU1 fresh air inlet	2	8	0	0	0	0	0	0	0
AHU2 fresh air inlet	4	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	59	51	50	43	35	34	36	36	46

Source noise levels at receiver: 5th floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	56	47	43	37	34	33	33	35	42
EXF-04-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-05-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-03-01 Exhausr	47	38	40	33	20	21	25	24	35
EXF-06-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-02-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-07-01 Exhaust	45	37	38	31	17	18	22	21	33
Roof mounted chiller	38	35	35	25	23	20	17	10	30
EXF-01-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-08-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-00-01 Exhaust	41	32	32	25	9	7	11	10	27
EFX-B1-01 Exhaust	32	27	33	16	4	5	3	5	25
EFX-B1-03 Exhaust	27	34	24	14	10	10	8	6	22
EFX-B1-02 Exhaust	30	34	18	10	0	0	0	0	19
EFX-B1-05 Exhaust	31	25	22	8	1	0	0	4	16
AHU1 exhaust	14	24	16	10	4	3	0	0	13
AHU1 fresh air inlet	2	8	0	0	0	0	0	0	0
AHU2 fresh air inlet	4	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	59	50	50	43	35	35	36	37	46

Source noise levels at receiver: 6th floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	60	50	43	37	34	33	33	35	43
EXF-05-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-06-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-04-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-07-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-03-01 Exhausr	45	37	38	31	17	18	22	21	33
EXF-08-01 Exhaust	45	37	38	31	17	18	22	21	33
Roof mounted chiller	39	36	37	27	23	20	17	10	31
EXF-02-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-01-01 Exhaust	41	32	32	25	9	7	11	10	27
EXF-00-01 Exhaust	40	31	31	24	8	6	10	9	26
EFX-B1-01 Exhaust	31	26	31	14	0	0	0	0	23
EFX-B1-03 Exhaust	26	33	22	12	6	5	3	1	20
EFX-B1-02 Exhaust	29	33	16	8	0	0	0	0	18
EFX-B1-05 Exhaust	30	24	20	6	0	0	0	0	14
AHU1 exhaust	13	22	14	6	0	0	0	0	10
AHU1 fresh air inlet	1	7	0	0	0	0	0	0	0
AHU2 fresh air inlet	3	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	61	52	50	43	35	35	36	37	47

Source noise levels at receiver: 7th floor Chancery Court Hotel G												
Period:	Night-time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps					60	50	43	37	34	33	33	35	43
EXF-06-01 Exhaust					48	40	43	36	23	24	28	27	38
EXF-07-01 Exhaust					48	40	43	36	23	24	28	27	38
EXF-05-01 Exhaust					47	38	40	33	20	21	25	24	35
EXF-08-01 Exhaust					47	38	40	33	20	21	25	24	35
EXF-04-01 Exhaust					45	37	38	31	17	18	22	21	33
Roof mounted chiller					41	38	39	29	24	20	17	10	33
EXF-03-01 Exhausr					43	34	35	28	14	13	17	16	30
EXF-02-01 Exhaust					41	32	32	25	9	7	11	10	27
EXF-01-01 Exhaust					40	31	31	24	8	6	10	9	26
EXF-00-01 Exhaust					39	29	28	21	3	0	3	2	23
EFX-B1-01 Exhaust					31	26	31	14	0	0	0	0	23
EFX-B1-03 Exhaust					26	33	22	12	6	5	3	1	20
EFX-B1-02 Exhaust					29	33	16	8	0	0	0	0	18
EFX-B1-05 Exhaust					30	24	20	6	0	0	0	0	14
AHU1 exhaust					13	22	14	6	0	0	0	0	10
AHU1 fresh air inlet					0	6	0	0	0	0	0	0	0
AHU2 fresh air inlet					2	0	0	0	0	0	0	0	0
Total Free field Lp and dBA					61	52	50	43	35	35	36	37	47

Source noise levels at receiver: 8th floor Chancery Court Hotel G												
Period:	Night-time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps					60	50	43	37	34	33	33	35	43
EXF-08-01 Exhaust					48	40	43	36	23	24	28	27	38
Roof mounted chiller					43	42	43	34	30	24	18	10	38
EXF-07-01 Exhaust					48	40	42	35	22	23	27	26	37
EXF-06-01 Exhaust					47	38	40	33	20	21	25	24	35
EXF-05-01 Exhaust					44	35	36	29	15	14	18	17	31
EXF-04-01 Exhaust					43	34	35	28	14	13	17	16	30
EXF-03-01 Exhausr					41	32	32	25	9	7	11	10	27
EXF-02-01 Exhaust					40	30	29	22	4	0	4	3	24
EXF-01-01 Exhaust					39	29	28	21	3	0	3	2	23
EFX-B1-01 Exhaust					30	25	30	13	0	0	0	0	22
EXF-00-01 Exhaust					37	27	26	19	1	0	1	0	21
EFX-B1-03 Exhaust					25	32	21	11	5	4	2	0	19
EFX-B1-02 Exhaust					28	32	15	7	0	0	0	0	17
EFX-B1-05 Exhaust					29	23	19	5	0	0	0	0	13
AHU1 exhaust					12	21	13	5	0	0	0	0	9
AHU1 fresh air inlet					0	6	0	0	0	0	0	0	0
AHU2 fresh air inlet					2	0	0	0	0	0	0	0	0
Total Free field Lp and dBA					61	52	50	43	36	35	36	36	47

APPENDIX F

CALCULATIONS –SUMMARY (2200-MIDNIGHT)

Overall receptor listings													
Period:	Night-time					Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Top floor Chancery Court Hotel F					63	54	50	44	41	39	38	39	49
7th floor Chancery Court Hotel G					61	52	50	43	35	35	36	37	47
6th floor Chancery Court Hotel G					61	52	50	43	35	35	36	37	47
5th floor Chancery Court Hotel G					59	50	50	43	35	35	36	37	46
4th floor Chancery Court Hotel G					59	51	50	43	34	34	36	36	46
3rd floor Chancery Court Hotel G					60	51	50	43	34	33	35	36	46
8th floor Chancery Court Hotel G					61	52	49	42	35	34	36	36	46
2nd floor Chancery Court Hotel G					59	50	49	42	33	33	35	35	45
1st floor Chancery Court Hotel G					59	50	49	42	33	32	34	35	45
1st floor Chancery Court Hotel F					58	50	48	40	32	32	33	34	44
Top floor Chancery Court Hotel E					61	50	46	39	33	29	27	25	43
1st floor Chancery Court Hotel E					53	48	46	36	26	26	27	26	40
Top floor Chancery Court Hotel D					59	48	44	36	29	24	21	21	40
Top floor Chancery Court Hotel C					57	46	42	34	26	22	18	17	38
1st floor Chancery Court Hotel					51	46	43	33	22	22	22	22	37
Top floor Chancery Court Hotel B					55	44	40	32	25	20	16	14	36
268-270 High Holborn to rear grd floor					47	45	38	31	25	24	22	19	35
1st floor Chancery Court Hotel C					50	44	40	31	19	18	17	17	35
Top floor Chancery Court Hotel A					54	43	38	30	23	18	14	13	34
1st floor Chancery Court Hotel					49	42	38	29	17	15	14	13	33
1st floor Chancery Court Hotel A					48	40	36	28	15	13	11	11	31
268-270 High Holborn to rear 5th floor					51	39	33	23	19	17	15	15	30
268-270 High Holborn to rear 4th floor					50	39	32	23	20	18	16	16	30

Source noise levels at receiver: Top floor Chancery Court Hotel F									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	63	53	46	40	37	36	36	38	46
Roof mounted chiller	43	43	46	40	38	35	32	25	44
EXF-07-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-08-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-06-01 Exhaust	44	36	37	30	16	17	21	20	32
EXF-05-01 Exhaust	43	35	36	29	15	16	20	19	31
EXF-04-01 Exhaust	42	33	34	27	13	12	16	15	29
EXF-03-01 Exhausr	41	32	33	26	12	11	15	14	28
EXF-02-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-01-01 Exhaust	39	30	30	23	7	5	9	8	25
EXF-00-01 Exhaust	37	27	26	19	1	0	1	0	21
EFX-B1-01 Exhaust	30	24	28	11	0	0	0	0	20
EFX-B1-03 Exhaust	25	31	19	9	1	0	0	0	17
EFX-B1-02 Exhaust	28	31	13	5	0	0	0	0	16
EFX-B1-05 Exhaust	29	22	17	3	0	0	0	0	11
AHU1 exhaust	11	22	11	1	0	0	0	0	8
AHU1 fresh air inlet	1	8	0	0	0	0	0	0	0
AHU2 fresh air inlet	3	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	63	54	50	44	41	39	38	39	49

Source noise levels at receiver: Top floor Chancery Court Hotel E									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	60	49	40	32	27	24	21	20	39
Roof mounted chiller	41	40	42	35	31	26	20	10	38
EXF-07-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-08-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-06-01 Exhaust	42	33	34	27	13	12	16	15	29
EXF-05-01 Exhaust	41	32	33	26	12	11	15	14	28
EXF-04-01 Exhaust	41	32	33	26	12	11	15	14	28
EXF-03-01 Exhausr	40	31	32	25	11	10	14	13	27
EXF-02-01 Exhaust	39	30	31	24	10	9	13	12	26
EXF-01-01 Exhaust	38	29	30	23	9	8	12	11	25
EXF-00-01 Exhaust	37	28	28	21	5	3	7	6	23
EFX-B1-01 Exhaust	30	24	28	11	0	0	0	0	20
EFX-B1-03 Exhaust	25	31	19	9	1	0	0	0	17
EFX-B1-02 Exhaust	28	31	13	5	0	0	0	0	16
EFX-B1-05 Exhaust	29	22	17	3	0	0	0	0	11
AHU1 exhaust	11	22	11	1	0	0	0	0	8
AHU1 fresh air inlet	5	12	0	0	0	0	0	0	0
AHU2 fresh air inlet	7	2	4	0	0	0	0	0	0
Total Free field Lp and dBA	61	50	46	39	33	29	27	25	43

Source noise levels at receiver: Top floor Chancery Court Hotel D									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	58	46	37	29	23	19	16	18	36
Roof mounted chiller	39	38	39	31	27	21	15	5	34
EXF-07-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-08-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-06-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-05-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-04-01 Exhaust	39	30	30	23	7	5	9	8	25
EXF-03-01 Exhausr	38	29	29	22	6	4	8	7	24
EXF-02-01 Exhaust	38	29	29	22	6	4	8	7	24
EXF-01-01 Exhaust	37	28	28	21	5	3	7	6	23
EXF-00-01 Exhaust	36	27	27	20	4	2	6	5	22
EFX-B1-01 Exhaust	30	24	28	11	0	0	0	0	20
EFX-B1-03 Exhaust	25	31	19	9	1	0	0	0	17
EFX-B1-02 Exhaust	28	31	13	5	0	0	0	0	16
EFX-B1-05 Exhaust	29	22	17	3	0	0	0	0	11
AHU1 exhaust	11	22	11	1	0	0	0	0	8
AHU1 fresh air inlet	6	15	2	0	0	0	0	0	0
AHU2 fresh air inlet	8	5	9	1	0	0	0	0	0
Total Free field Lp and dBA	59	48	44	36	29	24	21	21	40

Source noise levels at receiver: Top floor Chancery Court Hotel C											
Period:	Night-time				Mid frequency octave bands (Hz)						
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps		56	44	35	26	20	16	14	16	34
Roof mounted chiller		37	36	38	30	25	20	14	4	33
EXF-07-01 Exhaust		39	29	28	21	3	0	3	2	23
EXF-08-01 Exhaust		39	29	28	21	3	0	3	2	23
EXF-06-01 Exhaust		38	28	27	20	2	0	2	1	22
EXF-05-01 Exhaust		38	28	27	20	2	0	2	1	22
EXF-04-01 Exhaust		38	28	27	20	2	0	2	1	22
EFX-B1-01 Exhaust		30	25	30	13	0	0	0	0	22
EXF-02-01 Exhaust		37	27	26	19	1	0	1	0	21
EXF-03-01 Exhausr		37	27	26	19	1	0	1	0	21
EXF-01-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-00-01 Exhaust		35	25	24	17	0	0	0	0	19
EFX-B1-03 Exhaust		25	32	21	11	5	4	2	0	19
EFX-B1-02 Exhaust		28	32	15	7	0	0	0	0	17
EFX-B1-05 Exhaust		29	23	19	5	0	0	0	0	13
AHU2 fresh air inlet		11	10	17	9	0	0	0	0	11
AHU1 exhaust		12	21	13	5	0	0	0	0	9
AHU1 fresh air inlet		14	23	9	0	0	0	0	0	8
Total Free field Lp and dBA		57	46	42	34	26	22	18	17	38

Source noise levels at receiver: Top floor Chancery Court Hotel B										
Period:	Night-time				Mid frequency octave bands (Hz)						
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps		54	42	32	24	18	14	12	14	32
Roof mounted chiller		35	34	36	28	24	18	12	2	31
EXF-07-01 Exhaust		37	27	26	19	1	0	1	0	21
EXF-08-01 Exhaust		37	27	26	19	1	0	1	0	21
EXF-06-01 Exhaust		37	27	26	19	1	0	1	0	21
EXF-05-01 Exhaust		37	27	26	19	1	0	1	0	21
EFX-B1-01 Exhaust		29	24	29	12	0	0	0	0	21
EXF-04-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-02-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-03-01 Exhausr		36	26	25	18	0	0	0	0	20
EXF-01-01 Exhaust		35	25	24	17	0	0	0	0	19
EXF-00-01 Exhaust		34	24	23	16	0	0	0	0	18
EFX-B1-03 Exhaust		24	31	20	10	4	3	1	0	18
EFX-B1-02 Exhaust		27	31	14	6	0	0	0	0	16
EFX-B1-05 Exhaust		28	22	18	4	0	0	0	0	12
AHU2 fresh air inlet		10	10	15	10	0	0	0	0	10
AHU1 fresh air inlet		12	24	12	0	0	0	0	0	10
AHU1 exhaust		11	20	12	4	0	0	0	0	8
Total Free field Lp and dBA		55	44	40	32	25	20	16	14	36

Source noise levels at receiver: Top floor Chancery Court Hotel A										
Period:	Night-time				Mid frequency octave bands (Hz)						
		63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps		53	41	32	23	17	14	11	13	31
Roof mounted chiller		34	33	34	26	22	16	10	1	29
EXF-07-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-08-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-06-01 Exhaust		36	26	25	18	0	0	0	0	20
EXF-05-01 Exhaust		35	25	24	17	0	0	0	0	19
EXF-02-01 Exhaust		35	25	24	17	0	0	0	0	19
EXF-04-01 Exhaust		35	25	24	17	0	0	0	0	19
EXF-03-01 Exhausr		35	25	24	17	0	0	0	0	19
EFX-B1-01 Exhaust		28	22	26	9	0	0	0	0	18
EXF-01-01 Exhaust		34	24	23	16	0	0	0	0	18
EXF-00-01 Exhaust		34	24	23	16	0	0	0	0	18
EFX-B1-03 Exhaust		23	29	17	7	0	0	0	0	15
EFX-B1-02 Exhaust		26	29	11	3	0	0	0	0	14
AHU2 fresh air inlet		10	10	16	11	2	1	0	0	12
AHU1 fresh air inlet		13	25	15	3	0	0	0	0	11
EFX-B1-05 Exhaust		27	20	15	1	0	0	0	0	9
AHU1 exhaust		9	20	9	0	0	0	0	0	5
Total Free field Lp and dBA		54	43	38	30	23	18	14	13	34

Source noise levels at receiver: 1st floor Chancery Court Hotel F									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	57	47	40	34	31	30	30	32	40
EXF-00-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-01-01 Exhaust	45	37	38	31	17	18	22	21	33
EFX-B1-01 Exhaust	39	34	41	24	13	16	14	16	33
EXF-02-01 Exhaust	44	36	37	30	16	17	21	20	32
EXF-03-01 Exhausr	43	35	36	29	15	16	20	19	31
EXF-04-01 Exhaust	42	34	35	28	14	15	19	18	30
EFX-B1-03 Exhaust	34	41	32	22	19	21	19	17	30
EXF-05-01 Exhaust	41	32	33	26	12	11	15	14	28
Roof mounted chiller	33	32	33	25	20	14	8	1	28
EFX-B1-02 Exhaust	37	41	26	18	7	8	9	8	26
EXF-06-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-07-01 Exhaust	39	30	30	23	7	5	9	8	25
EFX-B1-05 Exhaust	38	32	30	16	10	10	11	15	24
EXF-08-01 Exhaust	38	29	29	22	6	4	8	7	24
AHU1 exhaust	21	32	24	19	15	14	11	11	23
AHU2 fresh air inlet	9	4	5	0	0	0	0	0	0
AHU1 fresh air inlet	7	14	0	0	0	0	0	0	0
Total Free field Lp and dBA	58	50	48	40	32	32	33	34	44

Source noise levels at receiver: 1st floor Chancery Court Hotel E									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-01 Exhaust	40	35	42	25	14	17	15	17	34
EFX-B1-03 Exhaust	35	42	33	23	20	22	20	18	31
EXF-00-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-01-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-03-01 Exhausr	42	33	34	27	13	12	16	15	29
EXF-02-01 Exhaust	42	33	34	27	13	12	16	15	29
EXF-04-01 Exhaust	41	32	33	26	12	11	15	14	28
EFX-B1-02 Exhaust	38	42	27	19	8	9	10	9	27
EXF-05-01 Exhaust	40	31	32	25	11	10	14	13	27
EXF-06-01 Exhaust	39	30	31	24	10	9	13	12	26
EFX-B1-05 Exhaust	39	33	31	17	11	11	12	16	25
Roof mounted pumps	47	35	25	16	12	11	11	13	25
EXF-07-01 Exhaust	38	29	30	23	9	8	12	11	25
AHU1 exhaust	22	33	25	20	16	15	12	12	24
EXF-08-01 Exhaust	37	28	28	21	5	3	7	6	23
Roof mounted chiller	27	25	25	16	14	11	8	1	21
AHU1 fresh air inlet	10	18	3	0	0	0	0	0	4
AHU2 fresh air inlet	12	8	10	0	0	0	0	0	4
Total Free field Lp and dBA	53	48	46	36	26	26	27	26	40

Source noise levels at receiver: 1st floor Chancery Court Hotel C									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-01 Exhaust	36	31	37	20	8	9	7	9	29
EFX-B1-03 Exhaust	31	38	28	18	14	14	12	10	26
Roof mounted pumps	47	35	25	16	11	10	10	12	25
EFX-B1-02 Exhaust	34	38	22	14	2	1	2	1	23
EXF-01-01 Exhaust	39	29	28	21	3	0	3	2	23
EXF-02-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-03-01 Exhausr	38	28	27	20	2	0	2	1	22
EXF-00-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-04-01 Exhaust	38	28	27	20	2	0	2	1	22
EXF-05-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-06-01 Exhaust	37	27	26	19	1	0	1	0	21
EFX-B1-05 Exhaust	35	29	26	12	5	3	4	8	20
Roof mounted chiller	27	24	24	15	13	10	7	0	20
EXF-07-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-08-01 Exhaust	35	25	24	17	0	0	0	0	19
AHU1 exhaust	18	28	20	14	8	7	4	4	18
AHU2 fresh air inlet	17	16	23	15	2	0	0	0	16
AHU1 fresh air inlet	20	29	15	0	0	0	0	0	14
Total Free field Lp and dBA	50	44	40	31	19	18	17	17	35

Source noise levels at receiver: 1st floor Chancery Court Hotel A											
Period: Night-time				Mid frequency octave bands (Hz)							
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	45	33	23	14	9	8	8	10	23
EFX-B1-01 Exhaust	32	26	30	13	0	0	0	0	22
EXF-02-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-00-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-01-01 Exhaust	36	26	25	18	0	0	0	0	20
Roof mounted chiller	26	23	24	15	12	9	6	0	19
EFX-B1-03 Exhaust	27	33	21	11	3	0	0	0	19
EXF-04-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-03-01 Exhausr	35	25	24	17	0	0	0	0	19
EXF-05-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-06-01 Exhaust	35	25	24	17	0	0	0	0	19
EFX-B1-02 Exhaust	30	33	15	7	0	0	0	0	18
EXF-07-01 Exhaust	34	24	23	16	0	0	0	0	18
EXF-08-01 Exhaust	34	24	23	16	0	0	0	0	18
AHU2 fresh air inlet	14	15	21	16	7	8	5	2	17
AHU1 fresh air inlet	18	30	20	10	5	2	0	0	17
EFX-B1-05 Exhaust	31	24	19	5	0	0	0	0	13
AHU1 exhaust	13	24	13	3	0	0	0	0	10
Total Free field Lp and dBA	48	40	36	28	15	13	11	11	31

Source noise levels at receiver: 1st floor Chancery Court Hotel									
Period: Night-time				Mid frequency octave bands (Hz)							
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-01 Exhaust	37	33	39	22	10	13	11	13	31
EFX-B1-03 Exhaust	32	40	30	20	16	18	16	14	28
EXF-02-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-00-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-01-01 Exhaust	40	31	31	24	8	6	10	9	26
EXF-03-01 Exhausr	40	31	31	24	8	6	10	9	26
EFX-B1-02 Exhaust	35	40	24	16	4	5	6	5	25
EXF-04-01 Exhaust	39	30	30	23	7	5	9	8	25
Roof mounted pumps	47	34	24	15	11	10	10	12	25
EXF-06-01 Exhaust	38	29	29	22	6	4	8	7	24
EXF-05-01 Exhaust	38	29	29	22	6	4	8	7	24
EXF-07-01 Exhaust	37	28	28	21	5	3	7	6	23
EFX-B1-05 Exhaust	36	31	28	14	7	7	8	12	22
EXF-08-01 Exhaust	36	27	27	20	4	2	6	5	22
Roof mounted chiller	28	25	25	16	14	11	8	1	21
AHU1 exhaust	20	30	22	16	12	11	8	8	20
AHU2 fresh air inlet	14	11	15	7	0	0	0	0	9
AHU1 fresh air inlet	12	21	8	0	0	0	0	0	6
Total Free field Lp and dBA	51	46	43	33	22	22	22	22	37

Source noise levels at receiver: 1st floor Chancery Court Hotel									
Period: Night-time				Mid frequency octave bands (Hz)							
	63	125	250	500	1k	2k	4k	8k	dBA
EFX-B1-01 Exhaust	34	29	34	17	3	3	1	3	26
Roof mounted pumps	46	34	24	15	10	9	9	11	24
EFX-B1-03 Exhaust	29	36	25	15	9	8	6	4	23
EFX-B1-02 Exhaust	32	36	19	11	0	0	0	0	21
EXF-02-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-03-01 Exhausr	37	27	26	19	1	0	1	0	21
EXF-01-01 Exhaust	37	27	26	19	1	0	1	0	21
EXF-00-01 Exhaust	37	27	26	19	1	0	1	0	21
Roof mounted chiller	27	24	24	15	13	10	7	0	20
EXF-04-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-05-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-06-01 Exhaust	36	26	25	18	0	0	0	0	20
EXF-07-01 Exhaust	35	25	24	17	0	0	0	0	19
EXF-08-01 Exhaust	35	25	24	17	0	0	0	0	19
AHU2 fresh air inlet	16	16	22	17	8	7	4	1	18
AHU1 fresh air inlet	19	31	21	9	4	1	0	0	18
EFX-B1-05 Exhaust	33	27	23	9	0	0	0	2	17
AHU1 exhaust	16	25	17	9	2	1	0	0	14
Total Free field Lp and dBA	49	42	38	29	17	15	14	13	33

Source noise levels at receiver: 268-270 High Holborn to rear grd floor												
Period:	Night-time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
AHU2 fresh air inlet					26	27	34	30	22	23	20	17	31
AHU1 fresh air inlet					31	44	35	25	20	17	15	10	31
Roof mounted pumps					44	31	21	13	10	9	9	11	22
Roof mounted chiller					26	23	23	15	13	10	7	0	19
EFX-B1-01 Exhaust					32	23	22	2	0	0	0	0	15
EFX-B1-03 Exhaust					27	30	13	0	0	0	0	0	15
EFX-B1-02 Exhaust					30	30	7	0	0	0	0	0	15
EXF-00-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-01-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-02-01 Exhaust					33	19	13	3	0	0	0	0	10
EFX-B1-05 Exhaust					31	21	11	0	0	0	0	0	9
EXF-03-01 Exhausr					32	18	12	2	0	0	0	0	9
EXF-04-01 Exhaust					32	18	12	2	0	0	0	0	9
EXF-05-01 Exhaust					31	17	11	1	0	0	0	0	8
EXF-07-01 Exhaust					30	16	10	0	0	0	0	0	7
EXF-06-01 Exhaust					30	16	10	0	0	0	0	0	7
EXF-08-01 Exhaust					29	15	9	0	0	0	0	0	5
AHU1 exhaust					11	18	5	0	0	0	0	0	4
Total Free field Lp and dBA					47	45	38	31	25	24	22	19	35
Source noise levels at receiver: 268-270 High Holborn to rear 4th floor												
Period:	Night-time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps					49	37	27	18	15	14	14	16	27
Roof mounted chiller					31	29	29	20	18	15	12	5	25
AHU2 fresh air inlet					16	15	22	14	1	0	0	0	15
AHU1 fresh air inlet					19	28	14	0	0	0	0	0	13
EXF-03-01 Exhausr					34	20	14	4	0	0	0	0	12
EXF-04-01 Exhaust					34	20	14	4	0	0	0	0	12
EFX-B1-01 Exhaust					28	19	18	0	0	0	0	0	11
EFX-B1-03 Exhaust					23	26	9	0	0	0	0	0	10
EFX-B1-02 Exhaust					26	26	3	0	0	0	0	0	10
EXF-01-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-06-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-02-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-00-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-05-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-07-01 Exhaust					33	19	13	3	0	0	0	0	10
EXF-08-01 Exhaust					33	19	12	3	0	0	0	0	10
EFX-B1-05 Exhaust					27	17	7	0	0	0	0	0	5
AHU1 exhaust					7	14	1	0	0	0	0	0	0
Total Free field Lp and dBA					50	39	32	23	20	18	16	16	30
Source noise levels at receiver: 268-270 High Holborn to rear 5th floor												
Period:	Night-time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps					50	37	27	18	14	13	13	15	28
Roof mounted chiller					32	29	29	20	17	14	11	4	24
AHU2 fresh air inlet					14	14	19	14	3	1	0	0	14
AHU1 fresh air inlet					16	28	16	3	0	0	0	0	13
EFX-B1-01 Exhaust					29	20	20	1	0	0	0	0	13
EXF-08-01 Exhaust					34	21	15	6	0	0	0	0	12
EXF-07-01 Exhaust					34	21	15	6	0	0	0	0	12
EXF-06-01 Exhaust					34	20	15	6	0	0	0	0	12
EXF-03-01 Exhausr					34	20	15	5	0	0	0	0	12
EXF-02-01 Exhaust					34	20	15	5	0	0	0	0	12
EXF-05-01 Exhaust					34	20	15	5	0	0	0	0	12
EXF-04-01 Exhaust					34	20	15	5	0	0	0	0	12
EFX-B1-03 Exhaust					24	27	11	0	0	0	0	0	12
EFX-B1-02 Exhaust					27	27	5	0	0	0	0	0	12
EXF-01-01 Exhaust					33	20	14	5	0	0	0	0	11
EXF-00-01 Exhaust					32	19	13	4	0	0	0	0	10
EFX-B1-05 Exhaust					28	18	9	0	0	0	0	0	6
AHU1 exhaust					8	15	3	0	0	0	0	0	0
Total Free field Lp and dBA					51	39	33	23	19	17	15	15	30

Source noise levels at receiver: 1st floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	57	47	40	34	31	30	30	32	40
EXF-01-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-00-01 Exhaust	48	40	42	35	22	23	27	26	37
EXF-02-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-03-01 Exhausr	45	37	38	31	17	18	22	21	33
EXF-04-01 Exhaust	43	34	35	28	14	13	17	16	30
EFX-B1-01 Exhaust	36	31	37	20	8	9	7	9	29
EXF-05-01 Exhaust	42	33	33	26	10	8	12	11	28
EXF-06-01 Exhaust	40	31	31	24	8	6	10	9	26
EFX-B1-03 Exhaust	31	38	28	18	14	14	12	10	26
EFX-B1-02 Exhaust	34	38	22	14	2	1	2	1	23
EXF-07-01 Exhaust	39	29	28	21	3	0	3	2	23
EXF-08-01 Exhaust	38	28	27	20	2	0	2	1	22
EFX-B1-05 Exhaust	35	29	26	12	5	3	4	8	20
Roof mounted chiller	25	22	22	15	13	10	7	0	19
AHU1 exhaust	18	28	20	14	8	7	4	4	18
AHU1 fresh air inlet	4	10	0	0	0	0	0	0	0
AHU2 fresh air inlet	6	0	1	0	0	0	0	0	0
Total Free field Lp and dBA	59	50	49	42	33	32	34	35	45

Source noise levels at receiver: 2nd floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	57	47	40	34	31	30	30	32	40
EXF-01-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-02-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-00-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-03-01 Exhausr	47	38	40	33	20	21	25	24	35
EXF-04-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-05-01 Exhaust	43	34	35	28	14	13	17	16	30
EFX-B1-01 Exhaust	35	30	36	19	7	8	6	8	28
EXF-06-01 Exhaust	42	33	33	26	10	8	12	11	28
EXF-07-01 Exhaust	40	31	31	24	8	6	10	9	26
EFX-B1-03 Exhaust	30	37	27	17	13	13	11	9	25
EXF-08-01 Exhaust	39	29	28	21	3	0	3	2	23
EFX-B1-02 Exhaust	33	37	21	13	1	0	1	0	22
Roof mounted chiller	26	23	23	16	14	11	8	1	20
EFX-B1-05 Exhaust	34	28	25	11	4	2	3	7	19
AHU1 exhaust	17	27	19	13	7	6	3	3	17
AHU1 fresh air inlet	3	9	0	0	0	0	0	0	0
AHU2 fresh air inlet	5	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	59	50	49	42	33	33	35	35	45

Source noise levels at receiver: 3rd floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	58	48	41	35	32	31	31	33	41
EXF-02-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-03-01 Exhausr	48	40	43	36	23	24	28	27	38
EXF-01-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-04-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-05-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-00-01 Exhaust	44	35	36	29	15	14	18	17	31
EXF-06-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-07-01 Exhaust	42	33	33	26	10	8	12	11	28
EFX-B1-01 Exhaust	34	29	35	18	6	7	5	7	27
EXF-08-01 Exhaust	40	31	31	24	8	6	10	9	26
EFX-B1-03 Exhaust	29	36	26	16	12	12	10	8	24
Roof mounted chiller	27	25	25	17	15	12	9	2	21
EFX-B1-02 Exhaust	32	36	20	12	0	0	0	0	21
EFX-B1-05 Exhaust	33	27	24	10	3	1	2	6	18
AHU1 exhaust	16	26	18	12	6	5	2	2	16
AHU1 fresh air inlet	3	9	0	0	0	0	0	0	0
AHU2 fresh air inlet	5	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	60	51	50	43	34	33	35	36	46

Source noise levels at receiver: 4th floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	57	49	42	36	33	32	32	34	42
EXF-03-01 Exhausr	48	40	43	36	23	24	28	27	38
EXF-04-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-02-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-05-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-01-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-06-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-00-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-07-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-08-01 Exhaust	42	33	33	26	10	8	12	11	28
EFX-B1-01 Exhaust	33	28	34	17	5	6	4	6	26
EFX-B1-03 Exhaust	28	35	25	15	11	11	9	7	23
Roof mounted chiller	28	25	25	17	15	12	9	2	21
EFX-B1-02 Exhaust	31	35	19	11	0	0	0	0	20
EFX-B1-05 Exhaust	32	26	23	9	2	0	1	5	17
AHU1 exhaust	15	25	17	11	5	4	1	1	15
AHU1 fresh air inlet	2	8	0	0	0	0	0	0	0
AHU2 fresh air inlet	4	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	59	51	50	43	34	34	36	36	46

Source noise levels at receiver: 5th floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	56	47	43	37	34	33	33	35	42
EXF-04-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-05-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-03-01 Exhausr	47	38	40	33	20	21	25	24	35
EXF-06-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-02-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-07-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-01-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-08-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-00-01 Exhaust	41	32	32	25	9	7	11	10	27
EFX-B1-01 Exhaust	32	27	33	16	4	5	3	5	25
Roof mounted chiller	30	27	27	18	16	13	10	3	23
EFX-B1-03 Exhaust	27	34	24	14	10	10	8	6	22
EFX-B1-02 Exhaust	30	34	18	10	0	0	0	0	19
EFX-B1-05 Exhaust	31	25	22	8	1	0	0	4	16
AHU1 exhaust	14	24	16	10	4	3	0	0	13
AHU1 fresh air inlet	2	8	0	0	0	0	0	0	0
AHU2 fresh air inlet	4	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	59	50	50	43	35	35	36	37	46

Source noise levels at receiver: 6th floor Chancery Court Hotel G									
Period: Night-time	Mid frequency octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps	60	50	43	37	34	33	33	35	43
EXF-05-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-06-01 Exhaust	48	40	43	36	23	24	28	27	38
EXF-04-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-07-01 Exhaust	47	38	40	33	20	21	25	24	35
EXF-03-01 Exhausr	45	37	38	31	17	18	22	21	33
EXF-08-01 Exhaust	45	37	38	31	17	18	22	21	33
EXF-02-01 Exhaust	43	34	35	28	14	13	17	16	30
EXF-01-01 Exhaust	41	32	32	25	9	7	11	10	27
EXF-00-01 Exhaust	40	31	31	24	8	6	10	9	26
Roof mounted chiller	31	28	29	20	16	13	10	3	24
EFX-B1-01 Exhaust	31	26	31	14	0	0	0	0	23
EFX-B1-03 Exhaust	26	33	22	12	6	5	3	1	20
EFX-B1-02 Exhaust	29	33	16	8	0	0	0	0	18
EFX-B1-05 Exhaust	30	24	20	6	0	0	0	0	14
AHU1 exhaust	13	22	14	6	0	0	0	0	10
AHU1 fresh air inlet	1	7	0	0	0	0	0	0	0
AHU2 fresh air inlet	3	0	0	0	0	0	0	0	0
Total Free field Lp and dBA	61	52	50	43	35	35	36	37	47

Source noise levels at receiver: 7th floor Chancery Court Hotel G												
Period:	Night-time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps					60	50	43	37	34	33	33	35	43
EXF-06-01 Exhaust					48	40	43	36	23	24	28	27	38
EXF-07-01 Exhaust					48	40	43	36	23	24	28	27	38
EXF-05-01 Exhaust					47	38	40	33	20	21	25	24	35
EXF-08-01 Exhaust					47	38	40	33	20	21	25	24	35
EXF-04-01 Exhaust					45	37	38	31	17	18	22	21	33
EXF-03-01 Exhausr					43	34	35	28	14	13	17	16	30
EXF-02-01 Exhaust					41	32	32	25	9	7	11	10	27
EXF-01-01 Exhaust					40	31	31	24	8	6	10	9	26
Roof mounted chiller					33	30	31	22	17	13	10	3	26
EXF-00-01 Exhaust					39	29	28	21	3	0	3	2	23
EFX-B1-01 Exhaust					31	26	31	14	0	0	0	0	23
EFX-B1-03 Exhaust					26	33	22	12	6	5	3	1	20
EFX-B1-02 Exhaust					29	33	16	8	0	0	0	0	18
EFX-B1-05 Exhaust					30	24	20	6	0	0	0	0	14
AHU1 exhaust					13	22	14	6	0	0	0	0	10
AHU1 fresh air inlet					0	6	0	0	0	0	0	0	0
AHU2 fresh air inlet					2	0	0	0	0	0	0	0	0
Total Free field Lp and dBA					61	52	50	43	35	35	36	37	47

Source noise levels at receiver: 8th floor Chancery Court Hotel G												
Period:	Night-time				Mid frequency octave bands (Hz)							
					63	125	250	500	1k	2k	4k	8k	dBA
Roof mounted pumps					60	50	43	37	34	33	33	35	43
EXF-08-01 Exhaust					48	40	43	36	23	24	28	27	38
EXF-07-01 Exhaust					48	40	42	35	22	23	27	26	37
EXF-06-01 Exhaust					47	38	40	33	20	21	25	24	35
EXF-05-01 Exhaust					44	35	36	29	15	14	18	17	31
Roof mounted chiller					35	34	35	27	23	17	11	3	30
EXF-04-01 Exhaust					43	34	35	28	14	13	17	16	30
EXF-03-01 Exhausr					41	32	32	25	9	7	11	10	27
EXF-02-01 Exhaust					40	30	29	22	4	0	4	3	24
EXF-01-01 Exhaust					39	29	28	21	3	0	3	2	23
EFX-B1-01 Exhaust					30	25	30	13	0	0	0	0	22
EXF-00-01 Exhaust					37	27	26	19	1	0	1	0	21
EFX-B1-03 Exhaust					25	32	21	11	5	4	2	0	19
EFX-B1-02 Exhaust					28	32	15	7	0	0	0	0	17
EFX-B1-05 Exhaust					29	23	19	5	0	0	0	0	13
AHU1 exhaust					12	21	13	5	0	0	0	0	9
AHU1 fresh air inlet					0	6	0	0	0	0	0	0	0
AHU2 fresh air inlet					2	0	0	0	0	0	0	0	0
Total Free field Lp and dBA					61	52	49	42	35	34	36	36	46

APPENDIX G

SITE LAYOUT DRAWING

SOUTH YORKSHIRE
PENSIONS AUTHORITY

SHEPPARD ROBSON

APPENDIX H

ENVIRONMENTAL SURVEY DATA

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Date	$L_{Aeq5min}$	L_{Afmax}	$L_{A(90)5min}$
(2013/03/20 10:20:00.00)	68.9	93.8	60.6
(2013/03/20 10:25:00.00)	62.8	69.5	60
(2013/03/20 10:30:00.00)	62.8	74.1	60
(2013/03/20 10:35:00.00)	62.7	71.5	60.4
(2013/03/20 10:40:00.00)	63.4	78.9	60.9
(2013/03/20 10:45:00.00)	63	77.1	60.7
(2013/03/20 10:50:00.00)	73.1	86.5	60.7
(2013/03/20 10:55:00.00)	62.2	76.2	59.9
(2013/03/20 11:00:00.00)	63.4	77.3	61
(2013/03/20 11:05:00.00)	61.1	71.8	58.8
(2013/03/20 11:10:00.00)	62.3	72.5	59.4
(2013/03/20 11:15:00.00)	61.9	72.8	58.8
(2013/03/20 11:20:00.00)	62.8	73.2	60.7
(2013/03/20 11:25:00.00)	63	72.4	60.5
(2013/03/20 11:30:00.00)	62.3	72.7	59.6
(2013/03/20 11:35:00.00)	62.3	69.5	59.7
(2013/03/20 11:40:00.00)	62.5	72.3	60.2
(2013/03/20 11:45:00.00)	62.2	72.3	59.8
(2013/03/20 11:50:00.00)	62.1	73	59.4
(2013/03/20 11:55:00.00)	63.4	79.5	60.6
(2013/03/20 12:00:00.00)	62.8	75.4	60.6
(2013/03/20 12:05:00.00)	62.5	71.1	59.9
(2013/03/20 12:10:00.00)	63.6	74.5	60.3
(2013/03/20 12:15:00.00)	62	70.9	59.5
(2013/03/20 12:20:00.00)	62.4	70	60.5
(2013/03/20 12:25:00.00)	62.6	75	60.2
(2013/03/20 12:30:00.00)	63	77.6	59.9
(2013/03/20 12:35:00.00)	63.6	72.8	60.1
(2013/03/20 12:40:00.00)	62.3	71.5	60.4
(2013/03/20 12:45:00.00)	61.9	69.8	59.6
(2013/03/20 12:50:00.00)	62.6	70.4	60.1
(2013/03/20 12:55:00.00)	62.8	70.5	60.6
(2013/03/20 13:00:00.00)	60.9	74.1	58.7
(2013/03/20 13:05:00.00)	61.4	67.4	58.6
(2013/03/20 13:10:00.00)	62.9	70.2	59.5
(2013/03/20 13:14:59.00)	63.9	75.3	61.1
(2013/03/20 13:20:00.00)	62.3	78.1	59.6
(2013/03/20 13:25:00.00)	62.6	76.6	60.3
(2013/03/20 13:30:00.00)	63.7	74	61
(2013/03/20 13:35:00.00)	62	73.8	59.6
(2013/03/20 13:40:00.00)	69.5	87	59.6
(2013/03/20 13:45:00.00)	63.9	73.2	61.1

Date	$L_{Aeq5min}$	L_{Afmax}	$L_{A(90),5min}$
(2013/03/20 13:50:00.00)	62.9	73.3	60.5
(2013/03/20 13:55:00.00)	64.4	76.6	60.7
(2013/03/20 14:00:00.00)	69.7	86.8	61.1
(2013/03/20 14:05:00.00)	61.9	70.6	59.4
(2013/03/20 14:10:00.00)	63.3	74.6	60.1
(2013/03/20 14:15:00.00)	63	72.1	60.5
(2013/03/20 14:20:00.00)	62.3	70.3	59.8
(2013/03/20 14:25:00.00)	62.5	73.1	59.6
(2013/03/20 14:30:00.00)	61.3	73.5	58.1
(2013/03/20 14:35:00.00)	61.9	76.9	57.3
(2013/03/20 14:40:00.00)	62.3	76	57.8
(2013/03/20 14:45:00.00)	62.4	72.7	59.4
(2013/03/20 14:50:00.00)	62.7	70.4	59
(2013/03/20 14:55:00.00)	62.5	82.3	57.7
(2013/03/20 15:00:00.00)	64.2	78.8	59.5
(2013/03/20 15:05:00.00)	63.1	73.2	60.7
(2013/03/20 15:10:00.00)	62.5	74.8	59.2
(2013/03/20 15:15:00.00)	65	78.9	58.9
(2013/03/20 15:20:00.00)	61.7	70.5	58.7
(2013/03/20 15:25:00.00)	62.1	71.5	58.2
(2013/03/20 15:30:00.00)	62.2	70.2	58.2
(2013/03/20 15:35:00.00)	61.2	70.3	58.2
(2013/03/20 15:40:00.00)	63	71.3	59.8
(2013/03/20 15:45:00.00)	64.4	73.2	61.6
(2013/03/20 15:50:00.00)	63.8	77.3	61
(2013/03/20 15:55:00.00)	63.4	77.7	60.4
(2013/03/20 16:00:00.00)	64.3	78.7	61.3
(2013/03/20 16:05:00.00)	62.6	76.2	59.1
(2013/03/20 16:10:00.00)	62	74.7	58.5
(2013/03/20 16:14:59.00)	70.3	88.6	59.8
(2013/03/20 16:20:00.00)	61.8	70.2	59
(2013/03/20 16:25:00.00)	62.4	72.8	58.4
(2013/03/20 16:29:59.00)	62.6	75.4	58.4
(2013/03/20 16:35:00.00)	62.4	72.6	60.3
(2013/03/20 16:40:00.00)	63.1	74.5	59.9
(2013/03/20 16:45:00.00)	63	75.8	60.2
(2013/03/20 16:50:00.00)	62.7	73.4	59.4
(2013/03/20 16:55:00.00)	61.9	73.7	59.2
(2013/03/20 17:00:00.00)	63.1	72.8	60.6
(2013/03/20 17:05:00.00)	63	75	60.4
(2013/03/20 17:10:00.00)	66.6	82.9	60.2
(2013/03/20 17:15:00.00)	63	72.9	59.3
(2013/03/20 17:20:00.00)	62.3	71.4	59.1
(2013/03/20 17:25:00.00)	62.4	73.4	60.1

Date	$L_{Aeq5min}$	L_{Afmax}	$L_{A(90),5min}$
(2013/03/20 17:30:00.00)	63.8	72	60.2
(2013/03/20 17:35:00.00)	62.7	73.5	60
(2013/03/20 17:40:00.00)	63.1	74.7	60.3
(2013/03/20 17:45:00.00)	63.9	83.2	61.1
(2013/03/20 17:50:00.00)	62.9	71.6	60.4
(2013/03/20 17:55:00.00)	63.1	73.9	60.6
(2013/03/20 18:00:00.00)	63	73.6	60.7
(2013/03/20 18:05:00.00)	63.3	76.9	60.8
(2013/03/20 18:10:00.00)	63	77	59.1
(2013/03/20 18:15:00.00)	62.9	76.9	60.4
(2013/03/20 18:20:00.00)	63.5	73.3	60.8
(2013/03/20 18:25:00.00)	62.2	69	60.4
(2013/03/20 18:30:00.00)	61.7	72.9	59.9
(2013/03/20 18:35:00.00)	62.7	71.8	60.5
(2013/03/20 18:40:00.00)	63.9	72	61.7
(2013/03/20 18:45:00.00)	63.7	74	61.9
(2013/03/20 18:50:00.00)	63	75.4	61.2
(2013/03/20 18:55:00.00)	62	70.8	60.1
(2013/03/20 19:00:00.00)	63.2	75.3	60.9
(2013/03/20 19:05:00.00)	63	73.3	61.1
(2013/03/20 19:10:00.00)	62.3	72.2	60.1
(2013/03/20 19:15:00.00)	62.7	71.5	60.8
(2013/03/20 19:20:00.00)	63.2	73	60.2
(2013/03/20 19:25:00.00)	62.8	71.6	60.5
(2013/03/20 19:30:00.00)	61.7	74.5	58.7
(2013/03/20 19:35:00.00)	62.4	71.4	59.5
(2013/03/20 19:40:00.00)	68.3	83.9	59.9
(2013/03/20 19:45:00.00)	63.4	74.3	61.5
(2013/03/20 19:50:00.00)	62.1	71.2	60.1
(2013/03/20 19:55:00.00)	62.2	69.1	59.6
(2013/03/20 20:00:00.00)	61.3	72.1	57.5
(2013/03/20 20:05:00.00)	61.5	66.8	57.8
(2013/03/20 20:10:00.00)	63.5	72.1	58.5
(2013/03/20 20:15:00.00)	61.7	72.4	57.5
(2013/03/20 20:20:00.00)	62.5	77.2	55.8
(2013/03/20 20:25:00.00)	61.3	67.2	57.8
(2013/03/20 20:30:00.00)	60.9	69.4	56.2
(2013/03/20 20:35:00.00)	61.1	71	55.9
(2013/03/20 20:40:00.00)	61.8	69.6	57.5
(2013/03/20 20:45:00.00)	67.9	85	56.9
(2013/03/20 20:50:00.00)	62.1	69.2	57.6
(2013/03/20 20:55:00.00)	60.2	68.5	56.4
(2013/03/20 21:00:00.00)	61.4	70.5	57.1
(2013/03/20 21:05:00.00)	61.7	75.8	56.2

Date	$L_{Aeq5min}$	L_{Afmax}	$L_{A(90)5min}$
(2013/03/20 21:10:00.00)	61.7	78.6	57.8
(2013/03/20 21:15:00.00)	61.3	77.5	56
(2013/03/20 21:20:00.00)	60.8	71	56.2
(2013/03/20 21:25:00.00)	62	78.6	57.6
(2013/03/20 21:30:00.00)	61.4	76.1	55.6
(2013/03/20 21:35:00.00)	61.6	77.1	56.6
(2013/03/20 21:40:00.00)	61.5	78.1	55.5
(2013/03/20 21:45:00.00)	61.9	72.5	57.1
(2013/03/20 21:50:00.00)	62	70.2	57.6
(2013/03/20 21:55:00.00)	61	71.9	56.5
(2013/03/20 22:00:00.00)	60.7	76.6	55.2
(2013/03/20 22:05:00.00)	60.6	69.4	56.3
(2013/03/20 22:10:00.00)	60.6	73.5	56.1
(2013/03/20 22:15:00.00)	61.9	79.1	56
(2013/03/20 22:20:00.00)	61.4	71.3	56.8
(2013/03/20 22:25:00.00)	61.6	69.1	56.1
(2013/03/20 22:30:00.00)	61.5	70.9	55.8
(2013/03/20 22:35:00.00)	62.4	72.1	56.4
(2013/03/20 22:40:00.00)	61.2	70.3	56.8
(2013/03/20 22:45:00.00)	60.5	70.5	53.9
(2013/03/20 22:50:00.00)	60.7	67.7	56.2
(2013/03/20 22:55:00.00)	61.5	67.5	57.6
(2013/03/20 23:00:00.00)	63.5	74.6	58.4
(2013/03/20 23:05:00.00)	61.8	73.1	56.4
(2013/03/20 23:10:00.00)	61.6	70.2	54.6
(2013/03/20 23:15:00.00)	61.3	68.7	56.1
(2013/03/20 23:20:00.00)	60.2	67.3	53.8
(2013/03/20 23:25:00.00)	61.6	74.6	54.6
(2013/03/20 23:30:00.00)	60.7	73.6	53.3
(2013/03/20 23:35:00.00)	60.9	73.2	56.1
(2013/03/20 23:40:00.00)	63.1	78.3	55.4
(2013/03/20 23:45:00.00)	61.3	73.4	55.9
(2013/03/20 23:50:00.00)	61.4	75	54.2
(2013/03/20 23:55:00.00)	60.7	79.1	54.9
(2013/03/21 00:00:00.00)	61.1	78	54.3
(2013/03/21 00:05:00.00)	60.5	74.8	53.4
(2013/03/21 00:10:00.00)	61.6	80.8	54.3
(2013/03/21 00:15:00.00)	60.7	68.9	54.9
(2013/03/21 00:20:00.00)	59.7	76.6	53.9
(2013/03/21 00:25:00.00)	61.2	70.8	51.2
(2013/03/21 00:30:00.00)	60.1	71.8	52.7
(2013/03/21 00:35:00.00)	59.6	70.3	50.7
(2013/03/21 00:40:00.00)	59.5	68.3	49.9
(2013/03/21 00:45:00.00)	59.6	76.7	50.9

Date	$L_{Aeq5min}$	L_{Afmax}	$L_{A(90),5min}$
(2013/03/21 00:50:00.00)	59.7	69.4	51
(2013/03/21 00:55:00.00)	61.3	78.8	51.9
(2013/03/21 01:00:00.00)	59.9	71.2	53.4
(2013/03/21 01:05:00.00)	57.8	65.8	49.7
(2013/03/21 01:10:00.00)	59.3	77.1	50
(2013/03/21 01:15:00.00)	59.3	74.9	49.6
(2013/03/21 01:20:00.00)	59.2	72.5	51.5
(2013/03/21 01:25:00.00)	56.5	66.7	48.7
(2013/03/21 01:30:00.00)	56.8	66	48.8
(2013/03/21 01:35:00.00)	57.7	65	48.2
(2013/03/21 01:40:00.00)	60	73	53.2
(2013/03/21 01:45:00.00)	59.3	77.3	52
(2013/03/21 01:50:00.00)	61.2	77.6	53.2
(2013/03/21 01:55:00.00)	57.2	67.6	49.4
(2013/03/21 02:00:00.00)	59.8	70.8	52.7
(2013/03/21 02:05:00.00)	56.1	66.3	47.7
(2013/03/21 02:10:00.00)	59	73	50.4
(2013/03/21 02:15:00.00)	57.6	75.4	49
(2013/03/21 02:20:00.00)	58.6	76.4	48.9
(2013/03/21 02:25:00.00)	58.4	66.5	49.3
(2013/03/21 02:30:00.00)	58.4	72.6	49.5
(2013/03/21 02:35:00.00)	58.5	73.6	49.1
(2013/03/21 02:40:00.00)	57.4	66.5	48.7
(2013/03/21 02:45:00.00)	57	67	48
(2013/03/21 02:50:00.00)	56.6	68	48.8
(2013/03/21 02:55:00.00)	58.9	73.1	49.1
(2013/03/21 03:00:00.00)	58.7	67	50.3
(2013/03/21 03:05:00.00)	59	69	48.8
(2013/03/21 03:10:00.00)	58.6	66.9	49.4
(2013/03/21 03:15:00.00)	58	73	48.3
(2013/03/21 03:20:00.00)	60.5	79.5	51.8
(2013/03/21 03:25:00.00)	58.8	72	49.8
(2013/03/21 03:30:00.00)	57.5	73.8	49.3
(2013/03/21 03:35:00.00)	58.3	69.3	48.2
(2013/03/21 03:40:00.00)	58.6	75.1	50.1
(2013/03/21 03:45:00.00)	57.9	78.5	46.8
(2013/03/21 03:50:00.00)	57.3	68.9	48.4
(2013/03/21 03:55:00.00)	58.9	71.1	51
(2013/03/21 04:00:00.00)	57.2	73.4	51
(2013/03/21 04:05:00.00)	54.4	65	46.1
(2013/03/21 04:10:00.00)	58.7	66.4	52.1
(2013/03/21 04:15:00.00)	57.5	66.4	48.5
(2013/03/21 04:20:00.00)	57.8	68.5	47.1
(2013/03/21 04:25:00.00)	57.1	71	47.7

Date	$L_{Aeq5min}$	L_{Afmax}	$L_{A(90)L5min}$
(2013/03/21 04:30:00.00)	54.8	65.5	47.1
(2013/03/21 04:35:00.00)	58.8	70.9	47.9
(2013/03/21 04:40:00.00)	59.9	68.5	53.3
(2013/03/21 04:45:00.00)	57.7	65.8	49.4
(2013/03/21 04:50:00.00)	56.8	67.5	47.3
(2013/03/21 04:55:00.00)	59.8	68	51.6
(2013/03/21 05:00:00.00)	58.6	77	48.4
(2013/03/21 05:05:00.00)	59.1	69.4	52.2
(2013/03/21 05:10:00.00)	57.8	66.6	51.1
(2013/03/21 05:15:00.00)	60.3	76.7	51.5
(2013/03/21 05:20:00.00)	60	68.8	55.3
(2013/03/21 05:25:00.00)	59.9	68.9	55.7
(2013/03/21 05:30:00.00)	59.5	68.4	51.9
(2013/03/21 05:35:00.00)	60.6	74.9	53
(2013/03/21 05:40:00.00)	64.1	68.5	59.7
(2013/03/21 05:45:00.00)	61	70	55.9
(2013/03/21 05:50:00.00)	61.3	68.8	54
(2013/03/21 05:55:00.00)	61.5	72	53.3
(2013/03/21 06:00:00.00)	61.2	68.1	54.2
(2013/03/21 06:05:00.00)	62	73.3	56.3
(2013/03/21 06:10:00.00)	61.7	72.8	55
(2013/03/21 06:15:00.00)	61	69.8	54.3
(2013/03/21 06:20:00.00)	61.5	71.1	55.2
(2013/03/21 06:25:00.00)	63.7	78.2	56.8
(2013/03/21 06:30:00.00)	65.4	76.5	59.7
(2013/03/21 06:35:00.00)	61.8	76.2	56.3
(2013/03/21 06:40:00.00)	62.6	77.5	57.8
(2013/03/21 06:45:00.00)	62.8	74.8	56.8
(2013/03/21 06:50:00.00)	62.4	73.5	56
(2013/03/21 06:55:00.00)	62.1	73.7	57.6
(2013/03/21 07:00:00.00)	62.2	75.8	56.7
(2013/03/21 07:05:00.00)	62.5	73.1	57.2
(2013/03/21 07:10:00.00)	62.6	68.4	58.3
(2013/03/21 07:15:00.00)	67.3	81.8	57.2
(2013/03/21 07:20:00.00)	62.4	76.3	57.2
(2013/03/21 07:24:59.00)	62.9	74.3	57.7
(2013/03/21 07:30:00.00)	62.1	70.9	58
(2013/03/21 07:35:00.00)	62.8	73.5	58
(2013/03/21 07:39:59.00)	63.1	73.9	58.8
(2013/03/21 07:45:00.00)	64.9	82.5	58.6
(2013/03/21 07:50:00.00)	62.2	76.5	59.1
(2013/03/21 07:55:00.00)	61.8	71.8	58.4
(2013/03/21 08:00:00.00)	62.8	74.1	58.9
(2013/03/21 08:05:00.00)	62.1	71.4	58.5

Date	$L_{Aeq5min}$	L_{Afmax}	$L_{A(90),5min}$
(2013/03/21 08:10:00.00)	62.7	71.7	59.2
(2013/03/21 08:15:00.00)	61.4	67.1	58.5
(2013/03/21 08:20:00.00)	62.6	71.6	58.8
(2013/03/21 08:25:00.00)	75.8	94	58.9
(2013/03/21 08:30:00.00)	62.5	67.9	59.4
(2013/03/21 08:35:00.00)	62.1	75.3	59.1
(2013/03/21 08:40:00.00)	70.8	87	58.8
(2013/03/21 08:45:00.00)	64.4	78.1	59.2
(2013/03/21 08:50:00.00)	73	92.6	60.2
(2013/03/21 08:55:00.00)	62.6	67.7	60.8
(2013/03/21 09:00:00.00)	64	72.7	60.9
(2013/03/21 09:05:00.00)	62.8	73	59.2
(2013/03/21 09:10:00.00)	63.1	75.7	60.6
(2013/03/21 09:15:00.00)	63.4	77.5	58.7
(2013/03/21 09:20:00.00)	60.8	72.7	57.6
(2013/03/21 09:25:00.00)	61.6	72.6	59
(2013/03/21 09:30:00.00)	62.7	72.3	60.3
(2013/03/21 09:35:00.00)	63.1	73.8	60.5
(2013/03/21 09:40:00.00)	64.2	78.9	61.1
(2013/03/21 09:45:00.00)	65.3	80.4	61.2
(2013/03/21 09:50:00.00)	64.3	80.9	60.3