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RESULTS OF A 24-HOUR NOISE LEVEL SURVEY CARRIED OUT ON THE SECOND FLOOR ROOF AT THE REAR OF THE OFFICE BUILDING LOCATED AT 114-118 PARKWAY, CAMDEN AND A REPORT ON THE NOISE CONTROL MEASURES REQUIRED TO MITIGATE THE IMPACT OF ANY PROPOSED NEW EXTERNAL PLANT

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Client: Peter Deer Associates/Gazelle London
Project: 114 -118 Parkway, Camden, London NW1
Emtec Ref: QF9100/PF6036/PF6127/RP2
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RESULTS OF A 24-HOUR NOISE LEVEL SURVEY CARRIED OUT ON THE SECOND FLOOR ROOF AT THE REAR OF THE OFFICE BUILDING LOCATED AT 114-118 PARKWAY, CAMDEN AND A REPORT ON THE NOISE CONTROL MEASURES REQUIRED TO MITIGATE THE IMPACT OF ANY PROPOSED NEW EXTERNAL PLANT

1.0. INTRODUCTION

This report details the results of a 24-hour noise survey carried out on the second floor flat roof area at the rear of the office building located at 114 -118 Parkway in Camden, London NW1.

The objectives of this survey were as follows:

- To assess the proposal to install new external plant on the second floor rear roof area of the building.
- To establish the existing background noise level outside the nearest noise sensitive properties.
- To recommend noise limits and any necessary measures to ensure that the operation of the new plant does not disturb the occupants of the nearest affected properties.

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

2.0. SITE DESCRIPTION

The property at 114 -118 Parkway is a four storey office building in a terrace of similar office and retail premises on the main road into the centre of Camden. The rear of the building has a large flat roof area on the second floor which overlooks the intersection of Oval Road and Gloucester Avenue.

The front of the building is shown on the attached Photo A. The rear elevation of the building and the second floor flat roof area are shown on the attached Photos B to F.

3.0. TEST INSTRUMENTATION

All measurement equipment used during the survey complied with the requirements of BS4142:2014 "Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas". Details of the equipment are as follows:

Integrating Sound Level Meter:	Rion type NL-52 class 1 Sound Level Meter fitted with a Rion type UC-59 ½ inch condenser microphone. Serial No. 01121378
Statistical Analysis Modules:	Built in module capable of computing the percentile levels L1, L10, L50, L90 and L99 and also the Leq level.
Acoustic Calibrator:	Bruel & Kjaer type 4231 electronic calibrator. Serial No.: 1934160

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

3.1. Existing Noise Climate

Road traffic travelling on Parkway, Oval Road and Gloucester Avenue could be clearly heard during the manned periods at the start and the end of the survey, so the noise levels measured will include contributions from road vehicles.

Commercial jet aircraft were observed at medium and high altitude during the manned periods at the start and the end of the survey, so it is possible that the noise levels measured could include contributions from medium altitude jet aircraft.

There are no overland railways nearby, so the noise levels measured will not include contributions from rail noise.

We judged that traffic noise will be the dominant noise source throughout the daytime and nightime periods.

4.0. TEST PROCEDURE

The survey was conducted during a continuous 24-hour period from 08:17am on Monday the 21st of August to 08.17am on Tuesday the 22nd of August 2017.

Data was continuously acquired throughout the measurement period with the individual averaging time for statistical noise data set to 15 minutes. The following 'A' weighted statistical measurements were recorded concurrently: -

LA_1 - The Sound Pressure Level exceeded for 1% of the measurement period.

LA_{10} - The Sound Pressure Level exceeded for 10% of the measurement period.

LA_{50} - The Sound Pressure Level exceeded for 50% of the measurement period.

LA_{90} - The Sound Pressure Level exceeded for 90% of the measurement period. LA90 is considered to represent the "background noise level" during the measurement period and is used for the assessment of noise to determine the likelihood of complaints (See BS 4142:2014).

LA_{99} - The Sound Pressure Level exceeded for 99% of the measurement period.

LA_{eq} - The continuous steady state Sound Pressure Level that has the same acoustic energy as the real fluctuating level.

4.1. Measurement Positions

Noise levels were measured at a position at the rear of the second floor roof area immediately opposite the large picture windows in the residential block of flats at the rear of the site.

The location of the microphone is shown on the attached Photos C, D and E.

The microphone was fitted onto a tripod that was placed onto the second floor roof area with the microphone being some 1.2 metres above the roof surface. The rest of the measurement equipment was located in a weatherproof enclosure with a low impedance cable running from the microphone to the instrumentation.

4.2. Weather Conditions

The weather conditions prevailing during the measurement period were generally in line with those recommended in BS 4142:2014: -

Weather daytime: -	Dull and Overcast	Weather night time: -	Overcast
Wind daytime: -	Light	Wind night time: -	Light

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

5.0. RESULTS AND EVALUATION OF NOISE CRITERIA

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

The 'A' Weighted Leq levels measured over each 15 minute interval throughout the 24-hour period (denoted by LA_{eq}, (15 mins)) are displayed as a bar graph on the attached Sketch No QF/9100/T1 at the back of this report.

The 'A' Weighted percentile levels measured over each 15 minute interval denoted by LA_{10} (15 mins), LA_{50} (15 mins) and LA_{90} (15 mins) are displayed as line graphs on the attached Sketch No QF/9100/T2 at the back of this report.

5.1. Summary of Results

The table QF/9100/D1 below summarises the noise levels taken over the 24-hour period in terms of the maximum and minimum Sound Pressure Levels recorded.

Table QF/9100/D1 – Summary of Maximum and Minimum Noise Levels

	LA_{eq}	**LA_{1}**	**LA_{10}**	**LA_{50}**	**LA_{90}**	**LA_{99}**
Minimum	39.8 dBA	50.6 dBA	42.2 dBA	36.2 dBA	34.8 dBA	34.1 dBA
Maximum	58.9 dBA	72.5 dBA	60.4 dBA	55.7 dBA	50.5 dBA	48.9 dBA

Table QF/9100/D2 – Minimum LA90 Noise Level – Daytime (07.00 to 23.00)

	LA_{90}
Minimum daytime	41.8dBA

Table QF/9100/D3 – Minimum LA90 Noise Level – Nightime (23.00 to 07.00)

	LA_{90}
Minimum night time	34.8dBA

5.2. Summary of the Local Authority's planning requirements regarding noise for noise sensitive properties

The local planning authority is the London Borough of Camden.

The Camden Local Plan sets out the Council's planning policies and replaces the Core Strategy and Development Policy planning documents (adopted in 2010). It ensures that Camden continues to have robust, effective and up-to-date planning policies that respond to changing circumstances and the borough's unique characteristics and contribute to delivering the Camden Plan and other local priorities.

The Local Plan will cover the period from 2016-2031. Policy A4 of The Local Plan is entitled Noise and Vibration and states:

The Council will seek to ensure that noise and vibration is controlled and managed. Development should have regard to Camden's Noise and Vibration thresholds (Appendix 3). We will not grant planning permission for a) a development likely to generate unacceptable noise and vibration impacts or b) a development sensitive to noise in locations which experience high levels of noise, unless appropriate attenuation measures can be provided and will not harm the continued operation of existing uses. We will only grant permission for noise generating development, including any plant and machinery, if it can be operated without causing harm to amenity. We will also seek to minimise the impact on local amenity from deliveries and from the demolition and construction phases of development.

The parts of Appendix 3 that we have identified as relevant to this application are as follows:

Appendix 3: Noise thresholds

The significance of noise impact varies dependent on the different noise sources, receptors and times of operation presented for consideration within a planning application. Therefore, Camden's thresholds for noise and vibration evaluate noise impact in terms of various 'effect levels' described in the National Planning Policy Framework and Planning Practice Guidance:

- *NOEL – No Observed Effect Level*
- *LOAEL – Lowest Observed Adverse Effect Level*
- *SOAEL – Significant Observed Adverse Effect Level*

Three basic design criteria have been set for proposed developments, these being aimed at guiding applicants as to the degree of detailed consideration needed to be given to noise in any planning application. The design criteria outlined below are defined in the corresponding noise tables. The values will vary depending on the context, type of noise and sensitivity of the receptor:

- *Green – where noise is considered to be at an acceptable level.*
- *Amber – where noise is observed to have an adverse effect level, but which may be considered acceptable when assessed in the context of other merits of the development.*
- *Red – where noise is observed to have a significant adverse effect.*

Table C: Noise levels applicable to proposed industrial and commercial developments (including plant and machinery)

Existing Noise sensitive receptor	*Assessment Location*	*Design Period*	*LOAEL (Green)*	*LOAEL to SOAEL (Amber)*	*SOAL (Red)*
*Dwellings***	*Garden used for main amenity (free field) and Outside living or dining or bedroom window (façade)*	*Day*	*'Rating level' 10dB* below background*	*'Rating level' between 9dB below and 5dB above background*	*'Rating level' greater than 5dB above background*
*Dwellings***	*Outside bedroom window (façade)*	*Night*	*'Rating level' 10dB* below background and no events exceeding 57dBL_{Amax}*	*'Rating level' between 9dB below and 5dB above background or noise events between 57dB and 88dB L_{Amax}*	*'Rating level' greater than 5dB above background and/or events exceeding 88dBL_{Amax}*

**10dB should be increased to 15dB if the noise contains audible tonal elements (day and night). However, if it can be demonstrated that there is no significant difference in the character of the residual background noise and the specific noise from the proposed development then this reduction may not be required. In addition, a frequency analysis (to include, the use of Noise Rating (NR) curves or other criteria curves) for the assessment of tonal or low frequency noise may be required.*

***levels given are for dwellings, however, levels are use specific and different levels will apply dependent on the use of the premises.*

The periods in Table C correspond to 0700 hours to 2300 hours for the day and 2300 hours to 0700 hours for the night. The Council will take into account the likely times of occupation for types of development and will be amended according to the times of operation of the establishment under consideration.

There are certain smaller pieces of equipment on commercial premises, such as extract ventilation, air conditioning units and condensers, where achievement of the rating levels (ordinarily determined by a BS:4142 assessment) may not afford the necessary protection. In these cases, the Council will generally also require an NR curve specification of NR35 or below, dependant on the room (based upon measured or predicted Leq (5mins) noise levels in octave bands, 1 metre from the façade of affected premises, where the noise sensitive premise is located in a quiet background area.

5.3. Determination of noise sensitive property design criteria

We believe that the new plant, which will consist of five number condensing units will not emit noise that has a distinguishable discrete continuous note, or emit noise that that has distinct impulses. The condensers will be inverter controlled and will slowly ramp up to their operating condition. To comply with a green rating from the table above the new units should have a combined Sound Pressure Level 10dB below the lowest LA90 background noise level at 1 metre from the nearest noise sensitive window.

The lowest background noise level measured during the survey was 34.8dBA, which occurred during the time period starting at 3.32am. The lowest daytime LA90 noise level was 41.8dBA. Applying a rating level that is 10dB below the daytime noise levels would give a limiting daytime rating level of 31.8dBA.

We therefore propose that the following rating levels are applied:

Table QF/9100/D4 – Proposed Design Rating Levels

Existing Noise sensitive receptor	*Assessment Location*	*Design Period*	*Lowest measured background level*	***Proposed rating level***	*Proposed Local Authority criteria*
Dwellings	*Garden used for main amenity (free field) and Outside living or dining or bedroom window (façade)*	*Day*	*41.8dBA*	***31.8dBA***	*Green*
Dwellings	*Outside bedroom window (façade)*	*Night*	*34.8dBA*	***24.8dBA***	*Green*

5.4. Determination of commercial design criteria

The uses of the commercial premises that surround the proposed location of the condensers consist of offices. It is therefore proposed that the recommendations given in BS8233:1999, Section 7.6 be considered.

	Good	Reasonable
Open plan office: $L_{Aeq,T}$	45dBA	50dBA

We propose that the lower of these rating levels is adopted, i.e. 45dBA.

Assuming a 10dB noise reduction due to a partially open window, as per the lower limit of the range given in BS8233:1999 section 8.4.7, the rating level at 1 metre external to the nearest affected office windows would be 45dBA + 10dB = 55dBA.

5.5. Summary of external noise criteria

Based upon the results of the survey and the above design criteria we summarise the actual design rating levels to be adopted for this project in table QF/9100/D5: -

Table QF/9100/D5 – recommended design rating levels $L_{Ar,T}$

Type of premises	**$L_{Ar,T}$ (Daytime 7am – 11pm)**	**$L_{Ar,T}$ (Nightime 11pm – 7am)**
Noise sensitive	31.8dBA	24.8dBA
Commercial	55 dBA	-

6.0. DISCUSSION OF RESULTS

The office building is to be refurbished and new air conditioning and ventilation plant is to be installed within the offices.

There will be seven number LG air cooled condensers and a single Nuaire Quietscroll extract fan unit serving the toilets within the building.

The following tables QF/9100/D6, -/D7, -/D8 and -/D9 list the noise levels of the equipment to be installed and the natural attenuation and required mitigation measure to allow operation of the plant during the daytime operational period of the proposed offices (7am to 11pm).

Table QF/9100/D6 – Noise Levels of Condensers and Natural and necessary attenuation to operate between 7am and 7pm for adjacent residential property

Source/Attenuation	Sound Pressure Level (dB ref 2 x 10^{-5} N/m^2) 63	125	250	500	1k	2k	4k	8k	dBA
LG ARUB060GSS4 (5 off) LG UU18W.UE4 (1 off) LG MU4M27.U44 (1 off)	71 53 56	69 55 56	64 56 52	62 48 52	60 47 49	59 42 44	55 39 40	45 34 35	
Overall SPL at 1m (free field) Reverberation of surroundings	71 +5	69 +5	65 +5	63 +5	61 +5	59 +5	55 +5	46 +5	
Unattenuated SPL at 1 metre from condensers	76	74	70	68	66	64	60	51	71
Attenuation of distance to top floor windows of residential block at 180 (10 log A_{17}/A_1) Attenuation of acoustic barrier (200mm)/ Emtec RAAC33/300S baffles	-21 -6	-21 -8	-21 -10	-21 -12	-21 -14	-21 -16	-21 -18	-21 -18	
Attenuated SPL at 1 metre from residential window of flats	49	45	39	35	31	27	21	12	37

Table QF/9100/D7 – Noise Levels of Condensers and Natural and necessary attenuation to operate between 7pm and 11pm for adjacent residential property

Source/Attenuation	Sound Pressure Level (dB ref 2 x 10^{-5} N/m^2) 63	125	250	500	1k	2k	4k	8k	dBA
LG ARUB060GSS4 (5 off) - low noise	64	65	56	55	51	47	42	43	
LG UU18W.UE4 (1 off) - low noise	50	52	53	45	44	39	36	31	
LG MU4M27.U44 (1 off) - low noise	53	53	49	49	46	41	37	32	
Overall SPL at 1m (free field)	65	66	58	56	52	48	44	44	
Reverberation of surroundings	+5	+5	+5	+5	+5	+5	+5	+5	
Unattenuated SPL at 1 metre from condensers	70	71	63	61	57	53	49	49	63
Attenuation of distance to top floor windows of residential block at 180 (10 log A_{17}/A_1)	-21	-21	-21	-21	-21	-21	-21	-21	
Attenuation of acoustic barrier (200mm)/ Emtec RAAC33/300S baffles	-6	-8	-10	-12	-14	-16	-18	-18	
Attenuated SPL at 1 metre from residential window of flats	43	42	32	28	22	16	10	10	31

Table QF/9100/D8 – Noise Levels of Condensers and Natural and Necessary Attenuation to Operate Between 7am and 11pm for Offices Adjacent

Source/Attenuation	Sound Pressure Level (dB ref 2 x 10^{-5} N/m^2) 63	125	250	500	1k	2k	4k	8k	dBA
LG ARUB060GSS4 (5 off) LG UU18W.UE4 (1 off) LG MU4M27.U44 (1 off)	71 53 56	69 55 56	64 56 52	62 48 52	60 47 49	59 42 44	55 39 40	45 34 35	
Overall SPL at 1m (free field) Reverberation of surroundings	71 +5	69 +5	65 +5	63 +5	61 +5	59 +5	55 +5	46 +5	
Unattenuated SPL at 1 metre from condensers	76	74	70	68	66	64	60	51	71
Attenuation of distance to nearest office windows at 4m (10 log A_3/A_1)	-7	-7	-7	-7	-7	-7	-7	-7	
Attenuation of Emtec LAAC15 Acoustic louvres	-5	-7	-9	-12	-18	-19	-15	-15	
Attenuated SPL at 1 metre from office windows in lightwell	64	60	54	49	41	38	38	29	51

Table QF/9100/D9 – Noise Level of Toilet Extract Fan and Natural and Necessary Attenuation to Allow Operating Between 7am and 11pm for Adjacent Residential Property and Offices

Source/Attenuation	Sound Pressure Level (dB ref 2 x 10^{-5} N/m^2) 63	125	250	500	1k	2k	4k	8k	dBA
Nuaire Quietscroll EST2 discharge Sound Power Level	-	69	53	48	45	43	37	29	
End Reflection of Louvre	-6	-2	0	0	0	0	0	0	
SWL to SPL at discharge	-5	-5	-5	-5	-5	-5	-5	-5	
Distance to office window (3m) 20 log 2	-6	-6	-6	-6	-6	-6	-6	-6	
Attenuation of Emtec LAAC15 Acoustic Louvre	-5	-7	-9	-12	-18	-19	-15	-15	
Attenuated SPL at 1 metre from office windows	-	49	33	25	16	13	11	3	34

Note: The residential windows are 17 metres from the fan's discharge louvre and will enjoy a distance loss of 24dB and achieve less than 20dBA at 1 metre from the nearest residential window.

Based upon the above calculations It will be possible to operate the seven new LG air cooled condensers on full duty between the hours of 7am and 7pm and on low noise mode between the hours of 7pm and 11pm. The lowest LA90 background noise level between 7am and 7pm was recorded at 47.2dBA during the time period starting at 7.02am. Therefore the achieved noise level, with all units running at full speed, of 37dBA, is 10dB below this lowest LA90 background noise level and will therefore still achieve a Green LOAEL noise level between 7am and 7pm.

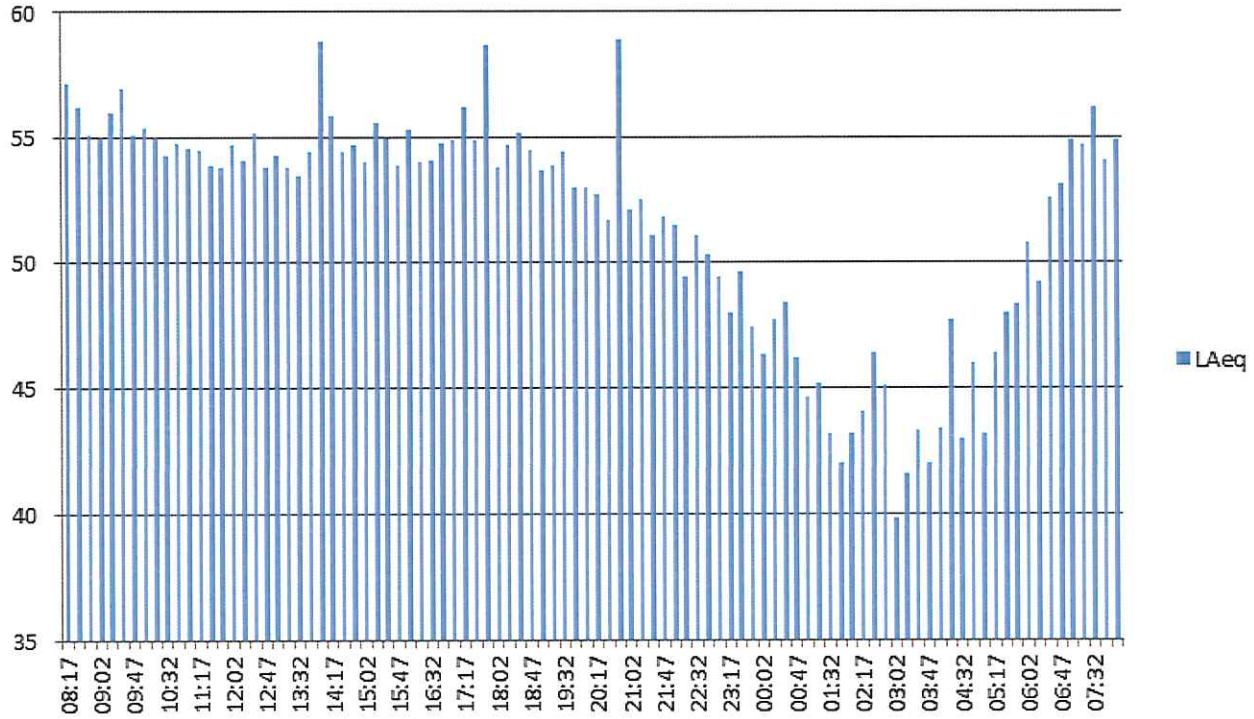
The condensers should be fitted with controls that ensure that they are only operated on full load between 7am and 7pm and that the low noise mode of operation is selected for operation of the condensers between 7pm and 11pm.

The attenuation that is required to operate between 7am and 7pm is detailed on the attached sketch No.QF/9100/SK1(A).

The required attenuation of the toilet extract fan exhaust and the screen in front of the five condensers will be provided by Emtec LAAC15 acoustic louvres as detailed on the attached data sheet No.108/03.

If these mitigation measures are installed then the new mechanical plant will operate within the recommended design rating levels listed in table QF/9100/D5 above and should be acceptable to the Camden planning authority.

EMTEC PRODUCTS LTD
3rd January 2018



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CLIENT: Peter Deer & Associates	*PF No: 6036*				*APPROVED BY:* MGR	*REVISION*							
PROJECT: 114-118 Parkway, Camden, London	*Q*	*A*	*M*	*I*	*DESIGN AUTH:* MGR	*SKETCH No. QF/9100/T1*							

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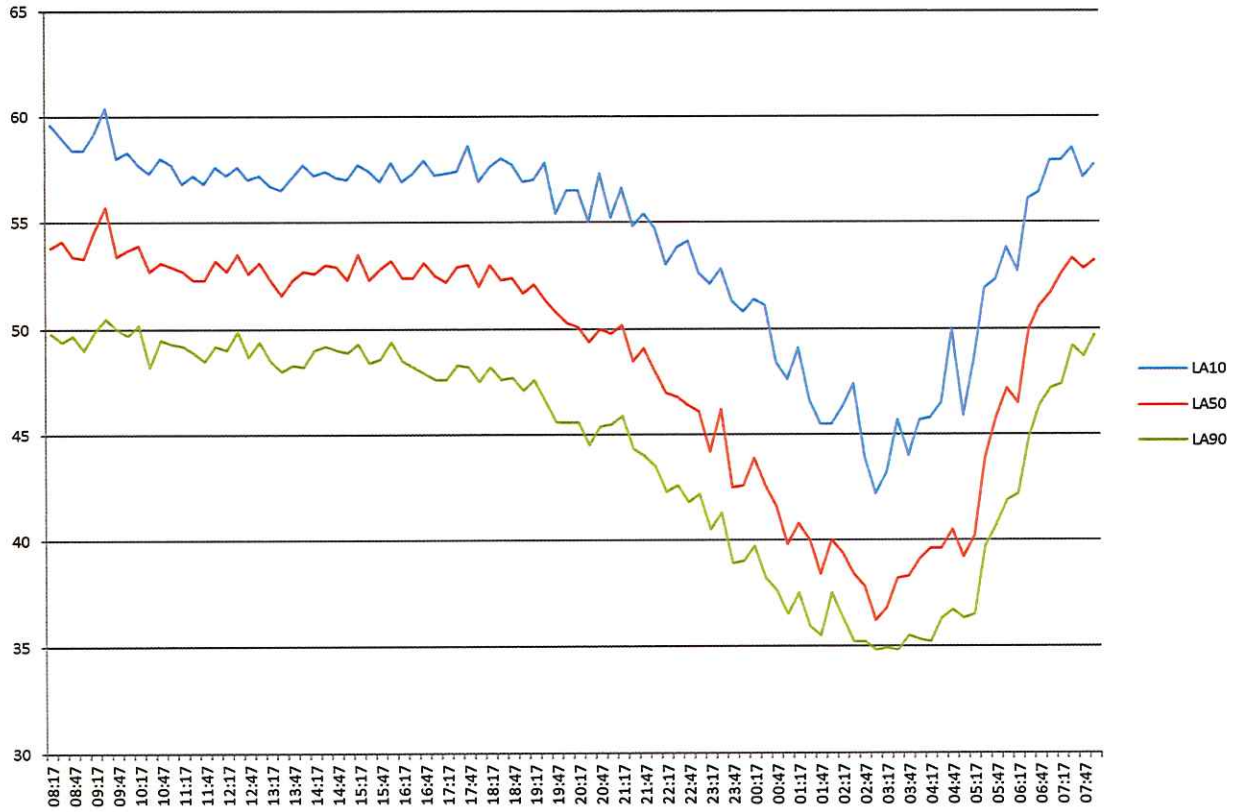

TITLE: LA10; LA50 & LA90 Levels	*ISSUE DATE:* 24/8/17				*DRAWN BY:* MGR	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*
CLIENT: Peter Deer & Associates	*PF No: 6036*				*APPROVED BY:* MGR	*REVISION*							
PROJECT: 114-118 Parkway, Camden, London	*Q*	*A*	*M*	*I*	*DESIGN AUTH:* MGR	*SKETCH No. QF/9100/T2*							

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APPENDIX 'A'

Raw Data – Noise Survey

21st to 22nd August 2017

RAW NOISE DATA - 114-118 Parkway, Camden, London NW1

Ref: QF9100/PF6127/RP2
Client: Peter Deer & Associates
Date: 21st to 22nd August 2017

Address	Start Time	LAeq	LE	Lmax	Lmin	LA1	LA10	LA50	LA90	LA99
1	08:17	57.2	86.8	83.4	47.1	64.2	59.6	53.8	49.8	48.4
2	08:32	56.2	85.8	79.9	46.7	62.3	59	54.1	49.4	47.6
3	08:47	55.1	84.7	66.4	46.8	62.1	58.4	53.4	49.7	47.7
4	09:02	55	84.6	73.3	45.8	61.9	58.4	53.3	49	47.1
5	09:17	56	85.6	71	47.1	62.6	59.2	54.6	49.9	47.9
6	09:32	57	86.6	65.9	48.1	63.5	60.4	55.7	50.5	48.9
7	09:47	55.1	84.7	70.4	47.4	62.8	58	53.4	50	48.6
8	10:02	55.4	85	71.3	46.7	62.6	58.3	53.7	49.7	47.6
9	10:17	55	84.6	68.8	47.3	61.3	57.7	53.9	50.2	48.5
10	10:32	54.3	83.9	66.3	45.5	61.7	57.3	52.7	48.2	46.3
11	10:47	54.8	84.4	68.1	46.6	62	58	53.1	49.5	47.8
12	11:02	54.6	84.2	66.2	46	62.2	57.7	52.9	49.3	47.5
13	11:17	54.5	84.1	67	46.2	63	56.8	52.7	49.2	47.4
14	11:32	53.9	83.5	67.1	45.7	60.5	57.2	52.3	48.9	46.9
15	11:47	53.8	83.4	70.9	46.4	59.9	56.8	52.3	48.5	47.3
16	12:02	54.7	84.3	71.7	46.3	61.7	57.6	53.2	49.2	47.6
17	12:17	54.1	83.7	69.1	45.9	60.9	57.2	52.7	49	46.9
18	12:32	55.2	84.8	71.4	46.4	62.5	57.6	53.5	49.9	48.3
19	12:47	53.8	83.4	66.7	46	59.7	57	52.6	48.7	47
20	13:02	54.3	83.9	69.7	46.8	60.7	57.2	53.1	49.4	48.2
21	13:17	53.8	83.4	65.3	46.1	60.8	56.7	52.3	48.5	47.3
22	13:32	53.5	83.1	65.1	45.3	61.2	56.5	51.6	48	46.4
23	13:47	54.4	84	74.6	45.3	61.8	57.1	52.3	48.3	46.5
24	14:02	58.8	88.4	81.2	45.7	63.7	57.7	52.7	48.2	46.7
25	14:17	55.9	85.5	78.6	45.6	63.5	57.2	52.6	49	47.3
26	14:32	54.4	84	65.8	46.1	61.9	57.4	53	49.2	47.2
27	14:47	54.7	84.3	72.7	46.2	63.3	57.1	52.9	49	47
28	15:02	54	83.6	70	45.3	61.1	57	52.3	48.9	47.2
29	15:17	55.6	85.2	74.6	46.5	64.1	57.7	53.5	49.3	47.5
30	15:32	55	84.6	70.9	45.6	65.1	57.4	52.3	48.4	47
31	15:47	53.9	83.5	69.5	45.9	60	56.9	52.8	48.6	47.1
32	16:02	55.3	84.9	70.9	46.3	65.1	57.8	53.2	49.4	47.2
33	16:17	54	83.6	66.8	44.4	61.3	56.9	52.4	48.5	46.5
34	16:32	54.1	83.7	69.5	43.3	60.6	57.3	52.4	48.2	45.8
35	16:47	54.8	84.4	74.4	44.8	62.3	57.9	53.1	47.9	46.2
36	17:02	54.9	84.5	71.2	42	65.3	57.2	52.5	47.6	44
37	17:17	56.2	85.8	78.5	43.4	64.3	57.3	52.2	47.6	45.7
38	17:32	54.9	84.5	70	44.4	63.7	57.4	52.9	48.3	46.1
39	17:47	58.7	88.3	83.2	44.2	65.9	58.6	53	48.2	45.9
40	18:02	53.8	83.4	67.2	44.3	61.2	56.9	52	47.5	45.4
41	18:17	54.7	84.3	68.4	44	63	57.6	53	48.2	46
42	18:32	55.2	84.8	77.1	44	62.3	58	52.3	47.6	45.1
43	18:47	54.5	84.1	66.6	43.9	63.4	57.7	52.4	47.7	45.8
44	19:02	53.7	83.3	64	42.7	61.4	56.9	51.7	47.1	44.4
45	19:17	53.9	83.5	67.4	42.5	61.5	57	52.1	47.6	43.9
46	19:32	54.4	84	69.4	42.8	63.4	57.8	51.4	46.6	44.5
47	19:47	53	82.6	74.4	41.3	60.3	55.4	50.8	45.6	42.4
48	20:02	53	82.6	67.2	40.8	60.8	56.5	50.3	45.6	42.6
49	20:17	52.7	82.3	65.8	41.6	60.5	56.5	50.1	45.6	43.3
50	20:32	51.7	81.3	66.2	41.1	59.3	55	49.4	44.5	42.3

51	20:47	58.9	88.5	83.3	41.4	72.5	57.3	50	45.4	42.9
52	21:02	52.1	81.7	68.4	40.4	61.7	55.2	49.8	45.5	41.7
53	21:17	52.5	82.1	63.8	42	59.2	56.6	50.2	45.9	43.6
54	21:32	51.1	80.7	65.7	41	58.9	54.8	48.5	44.3	42
55	21:47	51.8	81.4	66.7	40.1	60.1	55.4	49.1	44	41.6
56	22:02	51.5	81.1	65.8	38.4	61.8	54.7	48	43.5	40.3
57	22:17	49.4	79	63.4	39	57.9	53	47	42.3	40.2
58	22:32	51.1	80.7	68.3	39.6	61.8	53.8	46.8	42.6	40.7
59	22:47	50.3	79.9	66.7	38.5	59.1	54.1	46.4	41.8	39.6
60	23:02	49.4	79	69.7	39.2	57.2	52.6	46.1	42.2	40.9
61	23:17	48	77.6	62	37.7	56.7	52.1	44.2	40.5	38.6
62	23:32	49.6	79.2	68.8	37.8	59.7	52.8	46.2	41.3	38.8
63	23:47	47.4	77	63.5	36	57.1	51.3	42.5	38.9	37.3
64	00:02	46.3	75.9	58	36.4	54.6	50.8	42.6	39	37.6
65	00:17	47.7	77.3	65.8	36.6	55.6	51.4	43.9	39.7	37.8
66	00:32	48.4	78	69.5	35.6	57.8	51.1	42.6	38.2	36.5
67	00:47	46.2	75.8	69.9	34.3	54.1	48.4	41.6	37.6	35.4
68	01:02	44.6	74.2	60.1	34.7	55.4	47.6	39.8	36.5	35.5
69	01:17	45.2	74.8	58.4	34.9	54.8	49.1	40.8	37.5	36.2
70	01:32	43.2	72.8	55.4	34.4	52.3	46.6	40	35.9	35
71	01:47	42	71.6	55.3	33.5	52.6	45.5	38.4	35.5	34.7
72	02:02	43.2	72.8	59.8	35.1	53.8	45.5	40	37.5	36
73	02:17	44.1	73.7	60.2	34.2	55.1	46.3	39.4	36.3	35.4
74	02:32	46.4	76	68.5	33.4	58.2	47.4	38.4	35.2	34.4
75	02:47	45.1	74.7	66.9	33.5	56.6	43.9	37.8	35.2	34.4
76	03:02	39.8	69.4	56.4	33.4	50.6	42.2	36.2	34.8	34.1
77	03:17	41.6	71.2	57.7	33.5	53.6	43.2	36.8	34.9	34.3
78	03:32	43.3	72.9	64.3	33.1	52.4	45.7	38.2	34.8	34.1
79	03:47	42	71.6	62.4	33.6	51.7	44	38.3	35.5	34.5
80	04:02	43.4	73	59.6	33.5	54.1	45.7	39.1	35.3	34.4
81	04:17	47.7	77.3	74.6	33.3	55.4	45.8	39.6	35.2	34.1
82	04:32	43	72.6	57.7	34	52.1	46.5	39.6	36.3	35.1
83	04:47	46	75.6	62.7	34.2	56.2	50	40.5	36.7	35.3
84	05:02	43.2	72.8	59.1	34.4	54.2	45.9	39.2	36.3	35.4
85	05:17	46.4	76	71.3	34.5	57.5	48.6	40.2	36.5	35.6
86	05:32	48	77.6	62.4	37.1	57.2	51.9	43.9	39.7	38
87	05:47	48.3	77.9	61.2	36.6	55.5	52.3	45.8	40.7	37.4
88	06:02	50.8	80.4	75.8	38	58.4	53.8	47.2	41.9	39
89	06:17	49.2	78.8	61.7	39.3	58	52.7	46.5	42.2	40.5
90	06:32	52.6	82.2	67.4	40	60.9	56.1	50	44.9	41.6
91	06:47	53.1	82.7	67	41.6	60.8	56.4	51.1	46.4	43.5
92	07:02	54.9	84.5	73	43.7	65.2	57.9	51.7	47.2	44.8
93	07:17	54.7	84.3	71.8	43.6	63.8	57.9	52.6	47.4	44.7
94	07:32	56.2	85.8	74.7	46.5	64	58.5	53.3	49.2	47.5
95	07:47	54.1	83.7	64.5	45.9	60.9	57.1	52.8	48.7	46.7
96	08:02	54.9	84.5	70	46.2	62.3	57.7	53.2	49.7	47.3

APPENDIX 'B'

Photos and Sketches

Photo A – Front of Office Building at 114-118 Parkway, Camden

Photo B – Rear of 114-118 Parkway with Large Flat Roof Area on the Second Floor

Photo C – Microphone Located at Rear of Second Floor Flat Roof Area with Offices Shown to Left of Site

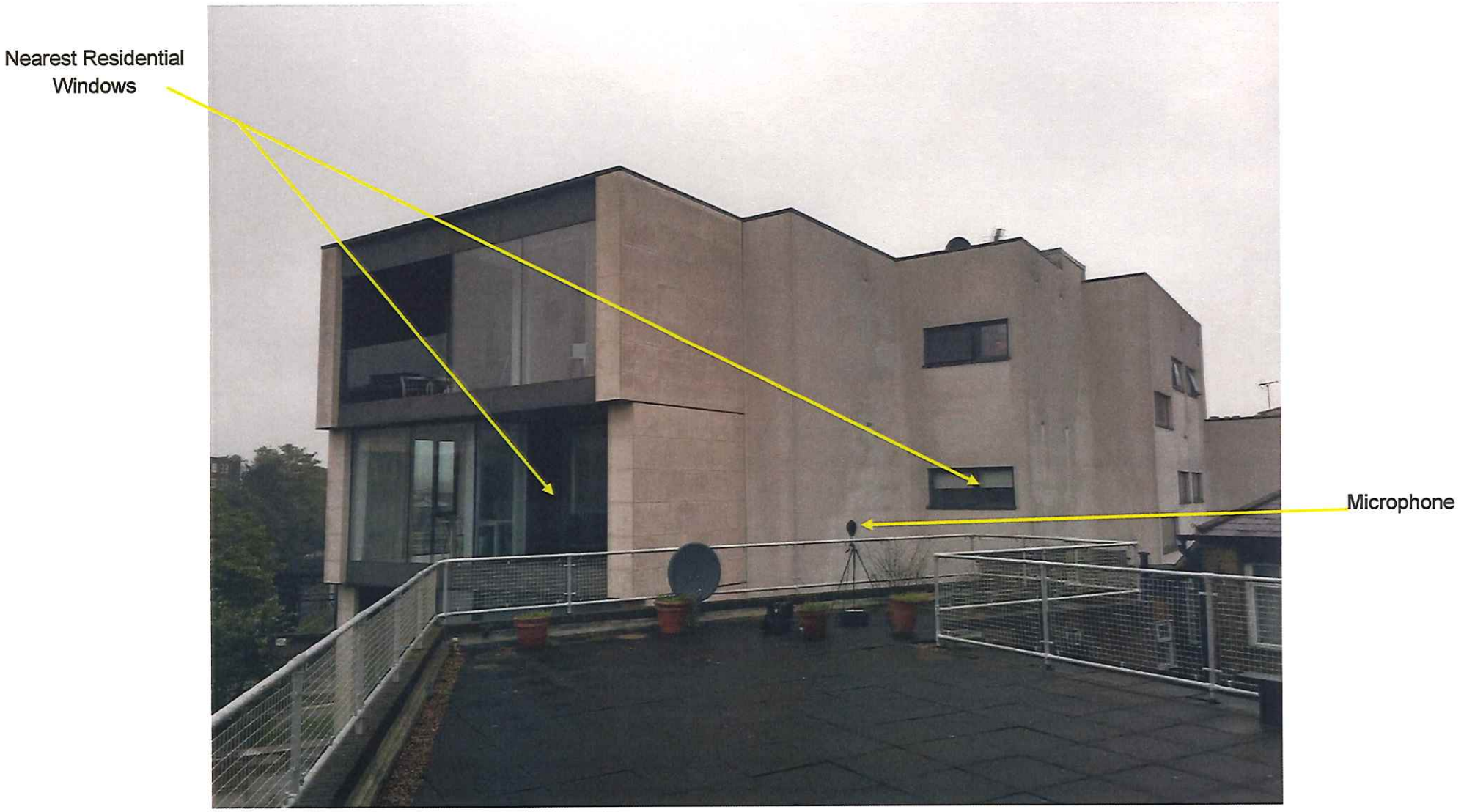


Photo D – Microphone Location with Residential Block of Flats Behind Site

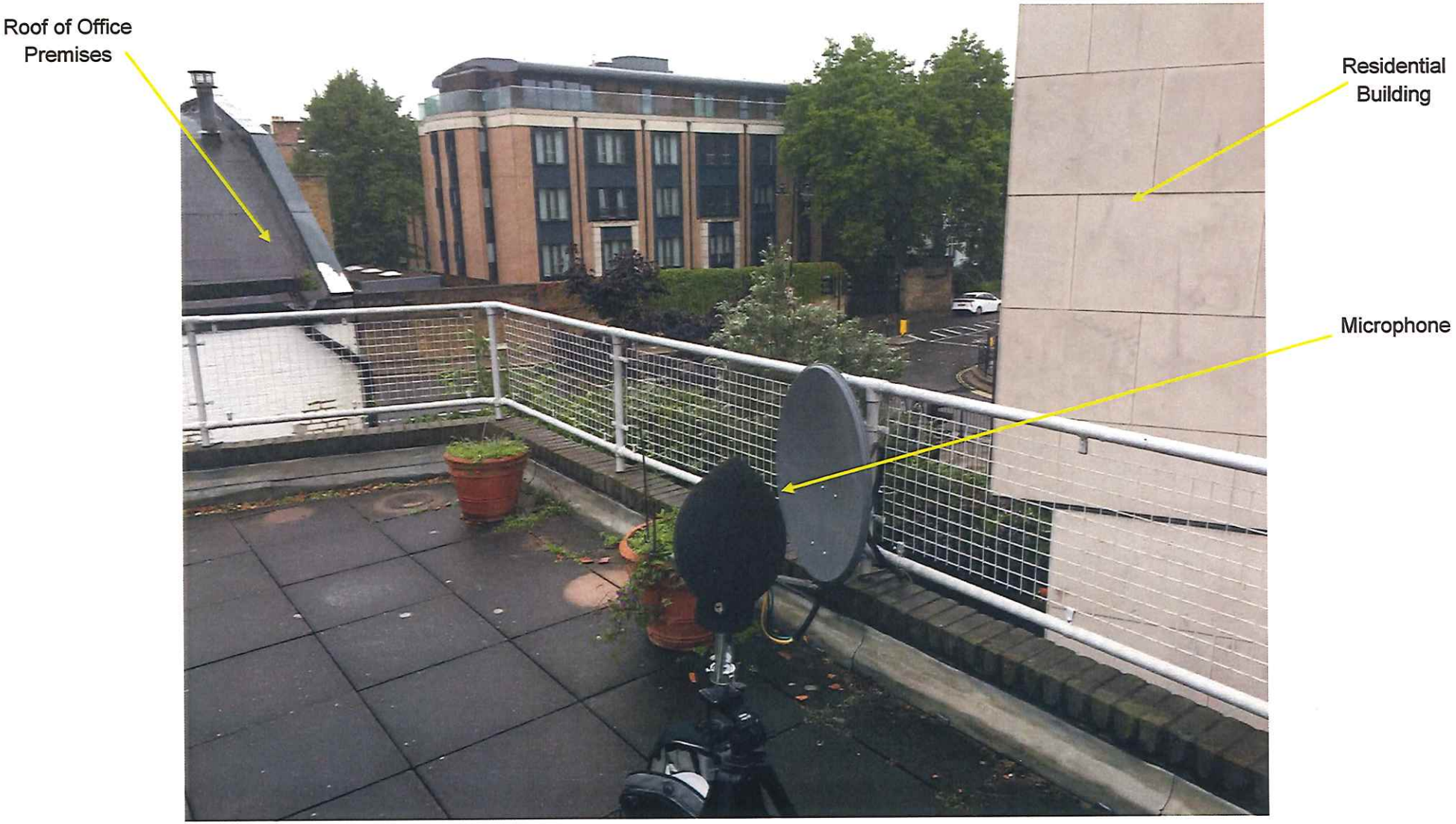


Photo E – Microphone Location with Oval Road/ Gloucester Avenue Intersection Behind

Photo F – Roof of Building to the Right Hand Side of Second Floor Roof Area. Roof of Office Premises

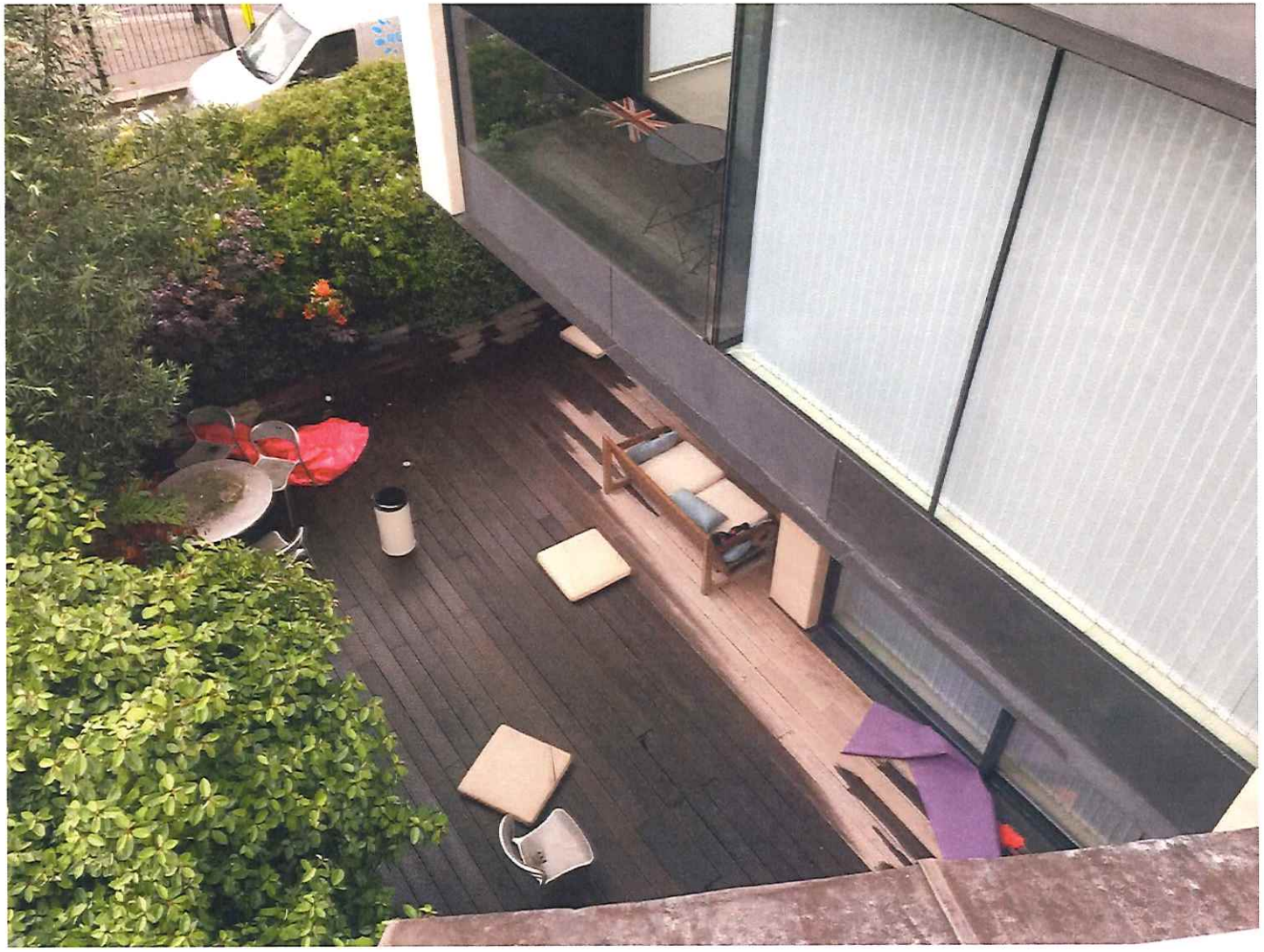


Photo G- Ground Floor Patio Area of Residential Building at Rear of Site

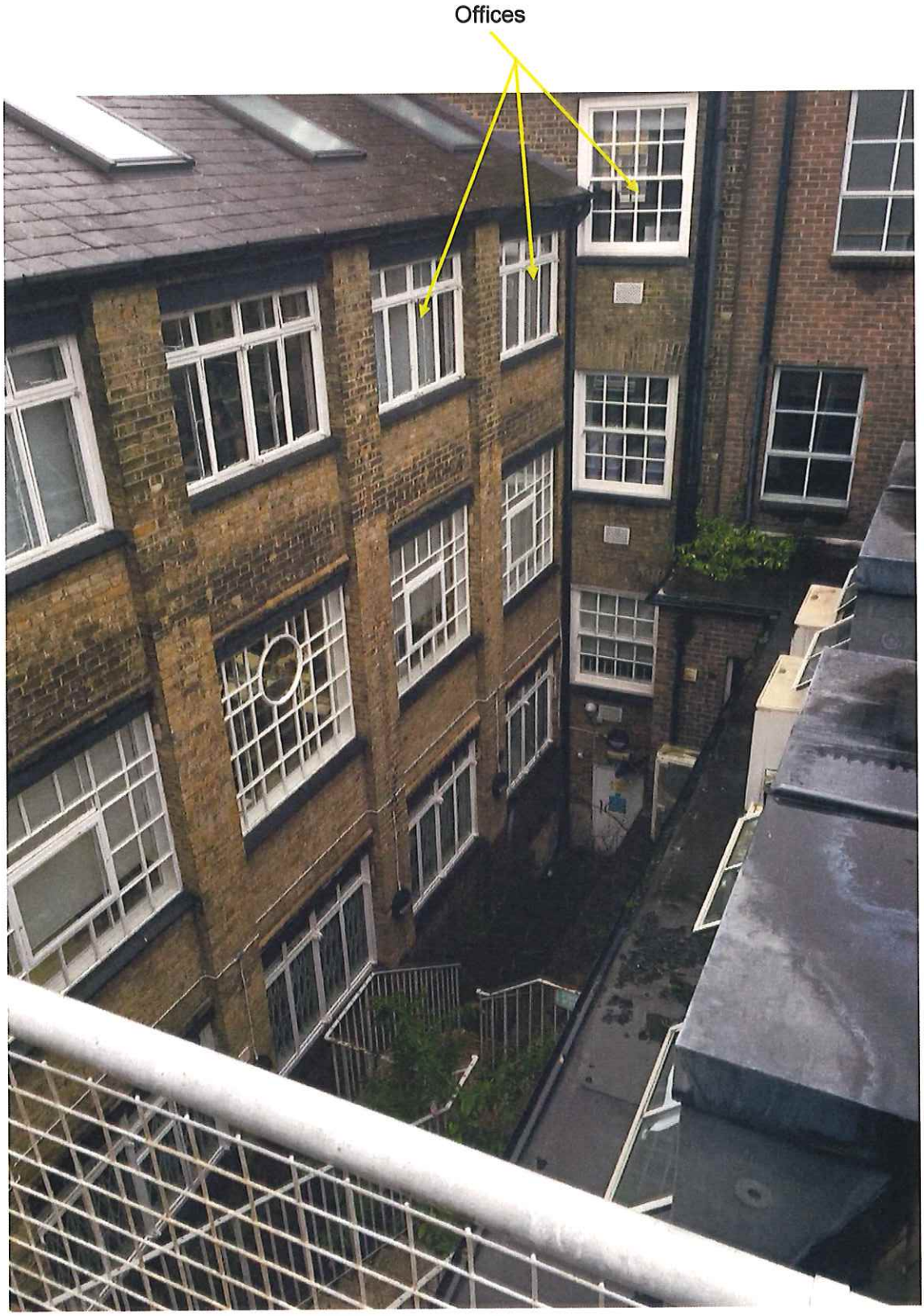
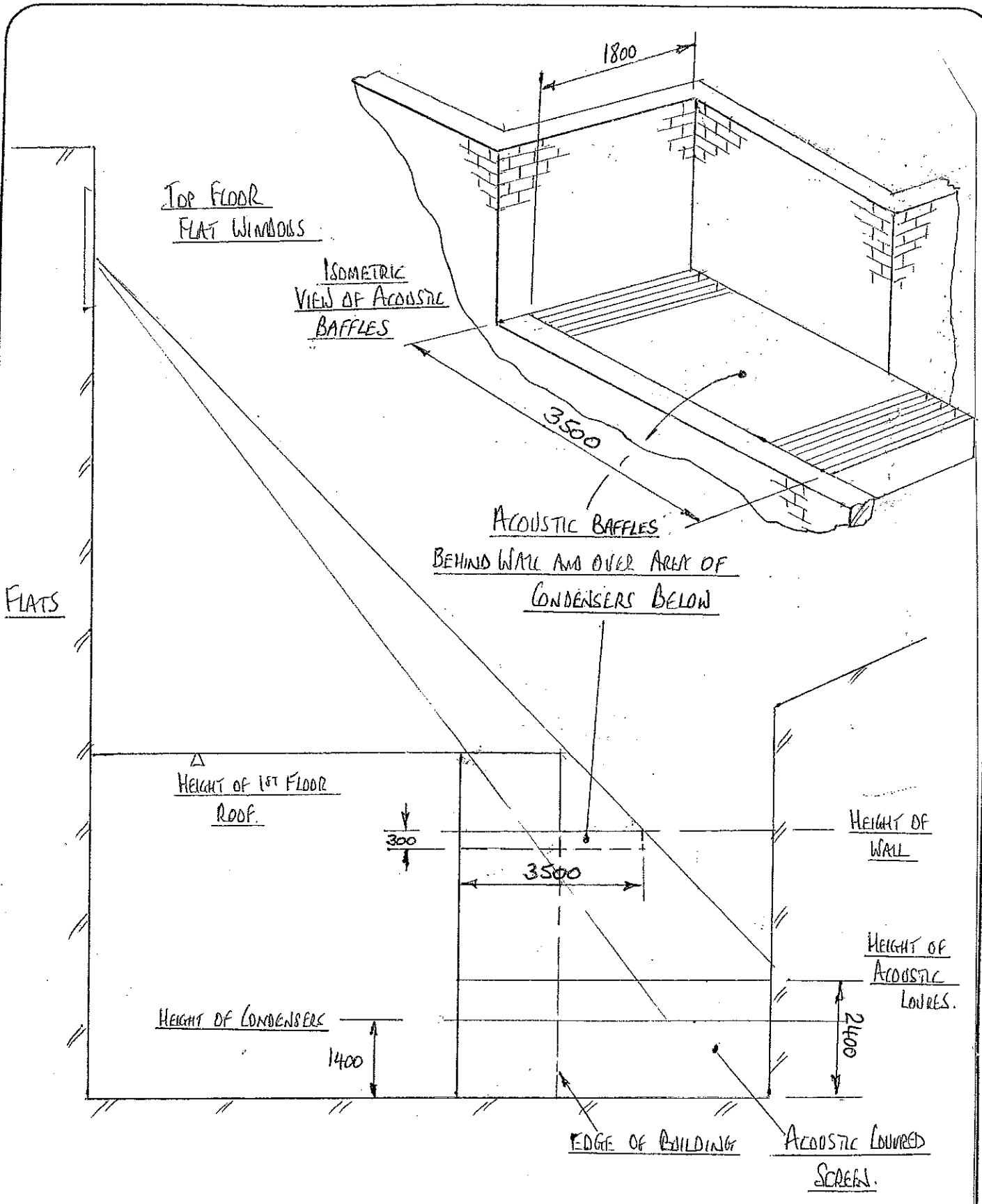


Photo H – Lightwell on Left Hand Side of Second Floor Roof



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CLIENT: PETER DEER & ASSOCIATES	Q A M I STATUS	EMTEC	
PROJECT: 114-118 PARKWAY, CAMDEN.	APPROVED BY:	Emtec Products Ltd., Enterprise House, Blyth Road, Hayes, Middx UB3 1DD. Tel: 0181-848 3031 Fax 0181-573 3535	
ISSUE DATE: 15/9/2017 | PF No. | DRAWN BY: MGR	DESIGN AUTH: MGR		