

RESULTS OF TWO 24-HOUR NOISE LEVEL SURVEYS CARRIED OUT AT THE
FRONT AND REAR OF THE RESIDENTIAL PREMISES LOCATED AT
35 TEMPLEWOOD AVENUE, LONDON NW3
AND A REPORT ON THE NOISE IMPACT OF THE PROPOSED NEW EXTERNAL PLANT

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Authorised for
Release by : I J Marchant

Client : Peter Deer & Associates
Project : 35 Templewood Avenue, London NW3
Emtec Ref. : QF10023/PF6655/RP1
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RESULTS OF TWO 24-HOUR NOISE LEVEL SURVEYS CARRIED OUT AT THE
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1.0. INTRODUCTION

This report details the results of two 24-hour noise surveys, carried out at the front and to the rear of the residential property located at 35 Templewood Avenue, London NW3. The two surveys were carried out concurrently, over the same 24-hour period.

The locations of the microphones were as follows,

- Location A - On the balcony at the front of the property adjacent to the southern boundary wall of the site.
- Location B - In the rear garden of the property adjacent to the western boundary hedge.

The objectives of the survey were as follows:

- To assess the proposal to install new air cooled condensers at the front of the property and to install an extract fan and air handling units at the rear of the building.
- To identify the nearest residential and commercial properties that might be affected by noise from the new plant.
- To establish the existing background noise level outside the nearest affected properties.
- To recommend noise limits and any necessary mitigating measures to ensure that the operation of the new plant does not disturb the occupants of the nearest affected properties and meets the planning directives of the local authority with regard to noise.

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

- 1.0. INTRODUCTION
- 2.0. SITE DESCRIPTION
- 3.0. TEST INSTRUMENTATION
- 4.0. TEST PROCEDURE
- 5.0. RESULTS AND EVALUATION OF NOISE CRITERIA
- 6.0. DISCUSSION OF RESULTS

2.0. SITE DESCRIPTION

The property located at 35 Templewood Avenue is a large, three storey, detached residential house with basement, ground and one upper floor. The building occupies a corner plot fronting onto Templewood Avenue to the east and West Heath Road to the north.

The front façade of the house can be seen on the attached Photo A.

The neighbouring residential properties to the south and west can be seen in the attached Photos B and D respectively.

An aerial overview of the site can be seen in the attached Photo 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 Meters fitted with Rion type UC-59 ½ inch condenser microphones. Serial Nos.: 01232569, 01232570
Statistical Analysis Modules:	Built in module capable of computing the percentile levels LA ₁ , LA ₁₀ , LA ₅₀ , LA ₉₀ and LA ₉₉ and also the LA _{eq} level.
Acoustic Calibrator:	Brüel & Kjær type 4231 electronic calibrator. Serial No.: 1934160

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

3.1. Existing Noise Climate

Road traffic travelling on surrounding roads could be heard at the start and 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.

Construction works were not observed being carried out in the vicinity during the manned periods at the start and end of the survey so the sound levels recorded should be typical of normal daytime background noise levels.

4.0. TEST PROCEDURE

The survey was conducted during a continuous 24-hour period from 10:36 am on Monday the 6th of January 2020 to 11:31 am on Tuesday the 7th of January 2020.

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: -

- LA₁ - The Sound Pressure Level exceeded for 1% of the measurement period.
- LA₁₀ - The Sound Pressure Level exceeded for 10% of the measurement period.
- LA₅₀ - The Sound Pressure Level exceeded for 50% of the measurement period.
- LA₉₀ - The Sound Pressure Level exceeded for 90% of the measurement period. LA₉₀ is considered to represent the "background noise level" during the measurement period and is used for the assessment of noise to determine the likelihood of complaints (See BS 4142:2014).
- LA₉₉ - 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

Location A - The microphone was mounted on a tripod and positioned above the box planter at the front of the balcony at the front of the building. The microphone was oriented vertically and was positioned approximately two metres above the level of the balcony. The location of the microphone can be seen on the attached Photos C and F.

Location B - The microphone was mounted on a tripod and positioned in the rear garden of the property. The microphone was oriented vertically and was positioned approximately 1.5 metres above ground level. The location of the microphone can be seen on the attached Photos E and F.

Both of the microphones were connected by low impedance cables to their associated instrumentation which was contained within individual weatherproof housings.

4.2 Weather Conditions

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

Weather daytime: -	Overcast	Weather night time: -	Overcast
Wind daytime: -	Calm	Wind night time: -	Calm

The microphones were protected throughout the survey by acoustically transparent wind balloons.

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 L_{eq} levels measured over each 15 minute interval throughout the 24-hour period, denoted by LA_{eq} (15 mins), are displayed as bar graphs on the attached Sketches No QF/10023/T1 and -/T3 at the back of this report.

The 'A' Weighted percentile levels measured over each 15 minute interval throughout the 24-hour period, denoted by LA_{10} (15 mins), LA_{50} (15 mins) and LA_{90} (15 mins) are displayed as line graphs on the attached Sketches No QF/10023/T2 and -/T4 at the back of this report.

5.1. Summary of Results

The table QF/10023/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/10023/D1 – Summary of Maximum and Minimum Noise Levels

	Location	LA_{eq}	LA_1	LA_{10}	LA_{50}	LA_{90}	LA_{99}
Minimum	A	42dBA	53dBA	43dBA	39dBA	38dBA	37dBA
	B	45dBA	50dBA	45dBA	38dBA	36dBA	35dBA
Maximum	A	64dBA	73dBA	69dBA	57dBA	52dBA	50dBA
	B	59dBA	64dBA	63dBA	58dBA	51dBA	50dBA

The table QF/10023/D2 below states the minimum LA_{90} noise levels recorded during the time periods of 7.00am to 23.00pm (Daytime / Evening) and between 23.00pm and 7.00am (Night time)

Table QF/10023/D2 – Minimum LA_{90} Noise Levels – Daytime/Evening and Night time

	Location	Minimum LA_{90}
Daytime/Evening (7am to 11pm)	A	42dBA
	B	42dBA
Night Time (11pm to 7am)	A	38dBA
	B	36dBA

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 57dB _{L_{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 88dB L _{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 L_{eq} (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 sound produced by the new plant will not be intermittent or contain tones as it will be inverter controlled. To comply with a green rating from the table above the new plant should therefore have a Sound Pressure Level 10dB below the lowest LA₉₀ background noise level at 1 metre from the nearest noise sensitive window.

The lowest recorded LA₉₀ background noise levels measured during the 24 hour survey period are given in Table QF/10023/D2 above.

Applying the above criteria gives limiting rating levels as listed in the following table QF/10023/D3:

Table QF/10023/D3 – Proposed Design Rating Levels (LA_{eq})

<i>Existing Noise sensitive receptor</i>	<i>Design Period</i>	<i>Location</i>	<i>Lowest measured background level</i>	<i>Proposed rating level</i>	<i>Proposed Local Authority criteria</i>
<i>Dwellings</i>	<i>Day</i>	<i>A</i>	<i>42dBA</i>	<i>32dBA</i>	<i>Green</i>
		<i>B</i>	<i>42dBA</i>	<i>32dBA</i>	<i>Green</i>
	<i>Night</i>	<i>A</i>	<i>38dBA</i>	<i>28dBA</i>	<i>Green</i>
		<i>B</i>	<i>36dBA</i>	<i>26dBA</i>	<i>Green</i>

5.4. Summary of external noise criteria

Based upon the lowest measured LA₉₀ background noise levels during the survey and the Council's requirements outlined above we summarise the design rating levels to be adopted for this project in table QF/10023/D4: -

Table QF/10023/D4 – recommended design rating levels L_{Ar,T}

Type of premises	Location	L_{Ar,T} (7am - 11pm)	L_{Ar,T} (11pm - 7am)
Noise sensitive	A	32dBA	28dBA
	B	32dBA	26dBA

6.0. DISCUSSION OF RESULTS

It is proposed to install three Air Handling Units in the Basement of the property and three air cooled condensers in the underground car park.

The three Air Handling Units will be inside the building and will provide supply and extract ventilation air to the Pool, the central doomed atrium and the other residential areas toilets. The condensers provide refrigerant to fan coil units within the house. The condensers will be contained within a separate enclosure within the underground car park.

All the ventilation systems will require silencers to be installed within the ductwork both on the atmospheric side and on the roomside of the units in order to achieve the daytime/evening external criteria of no more than 32dBA at 1 metre from the nearest residential window and NR35 in the Pool, NR30 within the other internal occupied residential areas and NR25 within the bedrooms.

The Sound Power levels of the individual fan units are listed in the table QF/10023/D5 below:

TABLE QF/10023/D5 - Sound Power Levels of Air Handling Units for 35 Templewood Avenue.

Ref	System		Make/Model	Airflow (m ³ /sec)	Sound Power Level (dB ref 10 ⁻¹² watts)							
					63	125	250	500	1k	2k	4k	8k
AHU01	House Supply & Extract	Fresh Air Exhaust Supply Extract	Swegon Gold F RX	1.00	76	73	70	60	51	49	44	45
					81	76	76	74	75	75	70	67
					81	76	76	74	75	75	70	67
					76	73	71	60	51	50	48	49
AHU02	Dome Supply & Extract	Fresh Air Exhaust Supply Extract	Swegon Gold F RX/HC	2.00	77	75	78	73	67	64	60	58
					76	71	73	75	72	71	69	69
					77	72	74	76	73	72	70	70
					77	75	79	73	67	65	64	62
AHU03	Pool Supply & Extract	Fresh Air Exhaust Supply Extract	Heatstar Pheonix EC2000	0.278	66	66	64	65	62	63	61	52
					68	70	68	69	66	68	65	56
					65	66	64	65	62	64	62	53
					68	69	67	68	65	67	64	55

The silencers required, within the ductwork, on either side of the above air movers are listed in Table QF/10023/D6 below and these silencers should be installed between the air mover and the external/internal space. These silencers have been selected using the above sound power levels and the ductwork layouts shown on the attached Peter Deer layouts No 4445-200207dl (sheets 1 to 5)

The grilles on the ductwork to the internal areas should be selected with a self-noise level of at least 10dB less than the room criteria (ie NR25 for the Pool, NR20 for the internal occupied areas and NR15 for bedrooms). Balancing dampers should also be selected to meet these self-noise levels and the ductwork should be designed, as far as is practical, to be self-balancing so as to reduce the need to damper back the airflows to individual grilles.

Table QF/10023/D6 – Dynamic Insertion Losses of Silencers required on Ventilation Systems

Ref.	System/Location	Silencer Type	Airflow (m ³ /s)	P.D (Pa)	Dynamic Insertion Loss (dB)							
					63	125	250	500	1k	2k	4k	8k
S1	House Supply Air	RAAC/33/1500	1.00	40	6	17	28	44	47	47	42	29
S2	House Extract	RAAC/33/1200	1.00	40	6	12	22	36	45	46	40	28
S3	House Fresh Air	RAAC/43/1800	1.00	30	5	13	23	39	45	41	32	17
S4	House Exhaust	RAAC/25/1500	1.00	35	9	18	30	48	50	50	50	50
S5	Dome Supply Air	RAAC/25/1200	2.00	45	8	14	26	39	49	47	45	36
S6	Dome Extract	RAAC/25/1500	2.00	45	9	18	30	48	50	50	50	50
S7	Dome Fresh Air	RAAC/43/2400	2.00	30	7	18	31	48	50	50	39	23
S8	Dome Exhaust	RAAC/43/1800	2.00	30	5	13	23	39	45	41	32	17
S9	Pool Supply Air	RAAC/43/1200	0.50	25	4	8	17	27	33	33	24	13
S10	Pool Extract	RAAC/43/2400M	0.50	30	11	20	20	24	34	31	24	14
S11	Pool Fresh Air	RAAC/38/1200	0.278	15	5	10	19	32	39	38	31	20
S12	Pool Exhaust	RAAC/25/2100M	0.278	30	15	29	23	22	29	30	31	31

Note: The silencers S10 and S12 have Melinex film to protect the acoustic infill from moisture from the Pool area.

With regard to the air cooled condensers it is proposed to install two Mitsubishi PURY-P600YSNW-A units and a single Mitsubishi PURY-P300YNW-A unit within the basement car park area. The air into the condensers will be taken from the car park and the discharge air will be through a grating in the rear garden next to the boundary with West Heath Road.

The table QF/10023/D7 below lists the sound pressure levels of the condensers and the natural and required attenuation between the nearest residential window and the condensers within the rear light well.

Table QF/10023/D7 – Noise Level of Mitsubishi Condensers, operating at full duty, and natural and required attenuation to 1 metre from the nearest residential neighbour's window

Equipment/Attenuation	Sound Pressure Level (dB ref $2 \times 10^{-5} \text{ N/m}^2$)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P600YSNW-A (x2)	82	69	69	66	60	56	51	46	67
Mitsubishi PURY-P300YNW-A	76	63	63	60	54	50	45	40	61
at 1m free field									
Combined SPL at 1 metre	83	70	70	67	61	57	52	47	
Reverberation of Car Park	+6	+6	+6	+6	+6	+6	+6	+6	
Distance loss 18 metres $10\log A_{17}/A_1$	-20	-20	-20	-20	-20	-20	-20	-20	
Barrier Effect of Car Park/Grating (100mm)	-6	-8	-9	-10	-11	-13	-16	-16	
Unattenuated SPL at 1 metre from nearest neighbour's window	63	48	47	43	36	30	22	17	45
Required attenuation – inlet Emtec RAAC/38/600S, WCAC30 Cladding & outlet RAAC/38/900LF	-6	-10	-18	-25	-32	-33	-29	-18	
Resultant SPL at 1 metre from nearest window	57	38	29	18	4	-	-	-	32

In order to attenuate the condensers they should be fitted with the inlet and discharge silencers itemised in table QF/10023/D8 below and the internal surfaces of the condenser plantroom should be clad with Emtec WCAC30 acoustic wall lining panels:

Table QF/9853/D7 – Dynamic Insertion Losses of Silencers required on Condensers

Ref	System/Location	Emtec Silencer Type	Airflow (m^3/sec)	p.d (pa)	Dynamic Insertion Loss (dB)							
					63	125	250	500	1K	2K	4K	8K
S13	Condenser Inlet	RAAC/38/900S	20	13	3	6	13	21	28	29	25	15
S14	Condenser outlet	RAAC/38/900LFP	20	10	6	10	18	25	32	33	29	18

If the above silencers are fitted as shown on the attached sketch No QF/10023/GA1, within a sealed subterranean plantroom, the acoustic wall cladding panels are fitted to the walls of the plantroom and an Emtec DAC33 acoustic access door is fitted next to the inlet silencer then the noise escaping out of the plantroom will be reduced to below the daytime/evening limiting LAeq noise level of 32dBA.

To eliminate recirculation of air from the condensers the outlet silencers should be connected to the condensers by suitable flexible connections.

To eliminate structural borne noise from entering the ground the condensers should be placed on neoprene-in-shear, anti-vibration mounts having a minimum static deflection of 6mm such as Emtec/VMC RD2 type mountings.

If the condensers are to be run at night then they should be controlled to run only on their low noise mode of operation, which will reduce the noise output of the condensers by 14dB and will mean the noise from the condensers will be substantially less than the limiting LAeq noise level of 26dBA at 1 metre from the neighbour's nearest window.

If the above recommendations are incorporated into the design of the project the requirements of the Local Authority's planning directives will be met and the requirements of BS8233:2014 will be met internally and justifiable complaints under the directives outlined in BS4142:2014 are unlikely to be justified.

Emtec Products Ltd
12th January 2020

APPENDIX 'A'

Raw Data – Noise Survey

6th of January 2020 to 7th of January 2020

Project: 35 Templewood Avenue, London NW3 (Location A)
 Client: Peter Deer & Associates
 Date: 6th to 7th January 2020
 Serial No: 01232569

Address	Start Time	LA _{eq}	LE	Lmax	Lmin	LA ₁	LA ₁₀	LA ₅₀	LA ₉₀	LA ₉₉
1	11:31	56	85	78	43	66	60	51	46	45
2	11:46	55	84	82	44	65	57	50	46	45
3	12:01	54	83	71	42	64	56	50	46	45
4	12:16	54	84	71	43	65	57	51	47	46
5	12:31	54	83	70	43	63	56	50	46	46
6	12:46	55	84	72	44	65	57	50	46	45
7	13:01	57	86	73	44	67	61	52	47	46
8	13:16	55	85	70	43	65	59	51	47	46
9	13:31	55	84	69	42	66	57	51	46	45
10	13:46	54	84	71	41	64	57	50	46	45
11	14:01	55	85	69	44	65	59	52	47	46
12	14:16	56	86	71	43	66	60	52	47	46
13	14:31	57	86	81	43	68	58	51	46	46
14	14:46	54	84	70	43	64	57	51	46	45
15	15:01	55	84	69	43	65	58	51	46	45
16	15:16	55	84	68	42	65	58	51	46	45
17	15:31	54	83	69	43	64	57	50	45	44
18	15:46	55	84	68	42	65	59	50	46	45
19	16:01	54	83	68	41	63	56	50	46	45
20	16:16	54	84	69	42	65	57	50	45	44
21	16:31	55	85	67	43	64	59	52	46	45
22	16:46	57	87	76	44	67	60	53	49	48
23	17:01	58	87	72	43	67	62	53	47	46
24	17:16	57	87	72	43	68	61	52	46	45
25	17:31	58	87	74	44	69	61	52	46	45
26	17:46	56	86	72	42	67	59	52	45	44
27	18:01	57	86	70	43	66	61	53	47	46
28	18:16	56	86	72	43	67	60	51	45	45
29	18:31	58	88	74	44	68	62	54	48	46
30	18:46	57	87	72	43	67	61	53	46	45
31	19:01	57	86	71	42	67	61	53	47	45
32	19:16	58	87	73	43	68	61	53	47	46
33	19:31	55	85	70	42	66	58	50	45	45
34	19:46	55	84	70	41	65	58	52	46	45
35	20:01	56	86	73	41	67	60	52	46	45
36	20:16	54	84	70	42	66	57	49	44	43
37	20:31	55	84	70	42	66	58	49	45	44
38	20:46	54	83	70	42	65	57	49	44	43
39	21:01	54	83	71	42	65	56	48	44	44
40	21:16	52	82	65	42	61	56	49	45	44
41	21:31	53	83	72	41	64	56	48	44	43
42	21:46	53	83	70	41	64	57	48	44	43
43	22:01	53	82	71	42	63	56	47	43	43
44	22:16	51	81	69	41	62	55	46	43	43
45	22:31	52	81	72	41	63	54	45	42	42
46	22:46	52	82	69	41	63	56	47	43	43
47	23:01	52	81	69	41	63	55	46	43	42
48	23:16	54	83	72	41	65	57	47	43	43
49	23:31	53	83	74	41	66	56	45	43	42

50	23:46	51	80	69	41	62	54	45	42	42
51	00:01	50	80	68	40	60	54	45	43	42
52	00:16	49	79	71	39	58	52	43	41	41
53	00:31	46	76	61	39	57	48	42	41	40
54	00:46	49	79	70	38	62	49	41	40	40
55	01:01	49	78	67	38	61	50	41	40	40
56	01:16	50	79	65	38	61	54	43	40	40
57	01:31	49	79	67	39	59	54	43	40	40
58	01:46	46	76	64	38	58	47	41	39	39
59	02:01	47	77	70	37	58	45	40	39	38
60	02:16	44	73	61	36	56	44	39	38	38
61	02:31	51	81	77	37	62	46	40	38	38
62	02:46	44	74	65	36	55	45	40	39	38
63	03:01	44	73	61	36	55	45	40	38	38
64	03:16	44	74	62	37	55	45	40	38	38
65	03:31	43	73	63	36	56	44	39	38	37
66	03:46	47	77	69	36	59	48	42	38	38
67	04:01	43	73	64	36	55	44	39	38	38
68	04:16	42	71	62	36	53	43	39	38	37
69	04:31	48	77	71	37	60	45	40	38	38
70	04:46	55	84	71	37	66	60	41	38	38
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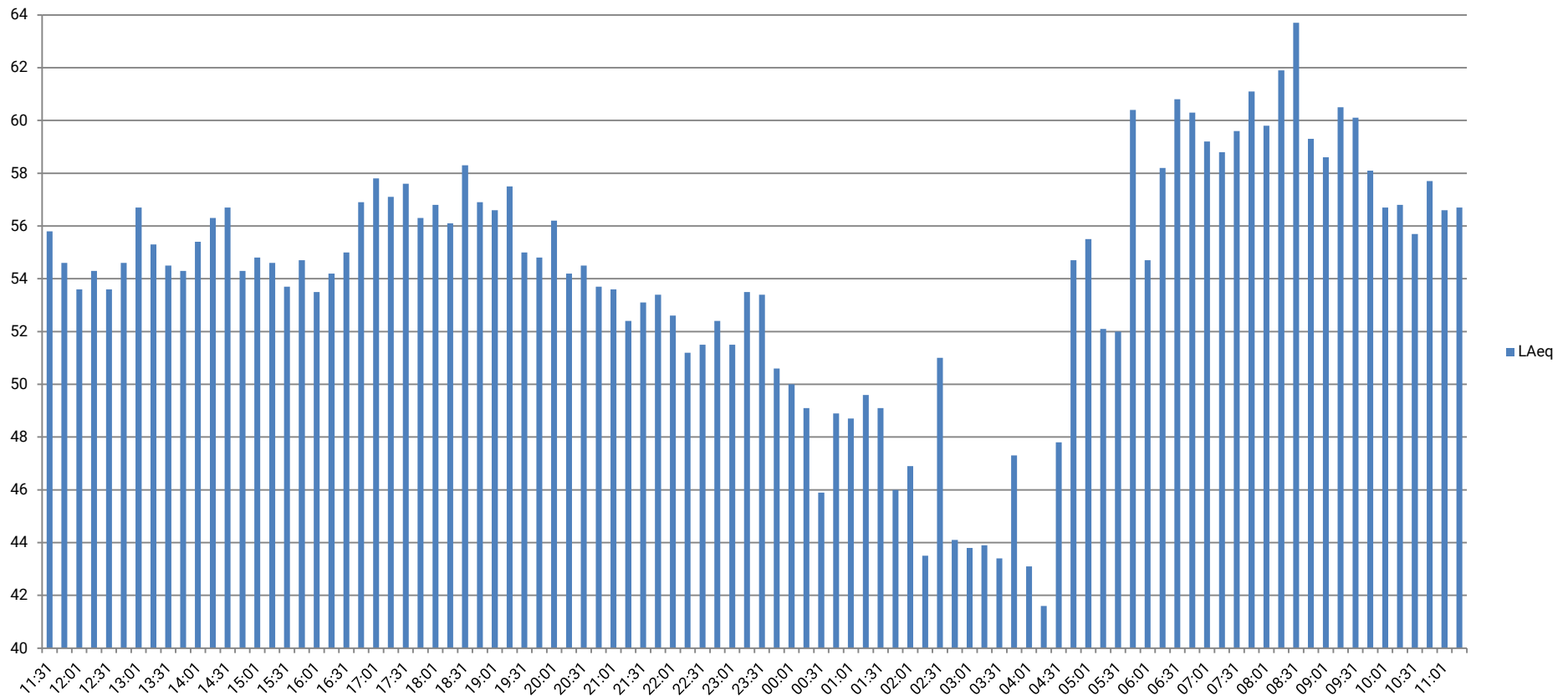
Project: 35 Templewood Avenue, London NW3 (Location B)
 Client: Peter Deer & Associates
 Date: 6th to 7th January 2020
 Serial No.: 01232570

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APPENDIX 'B'

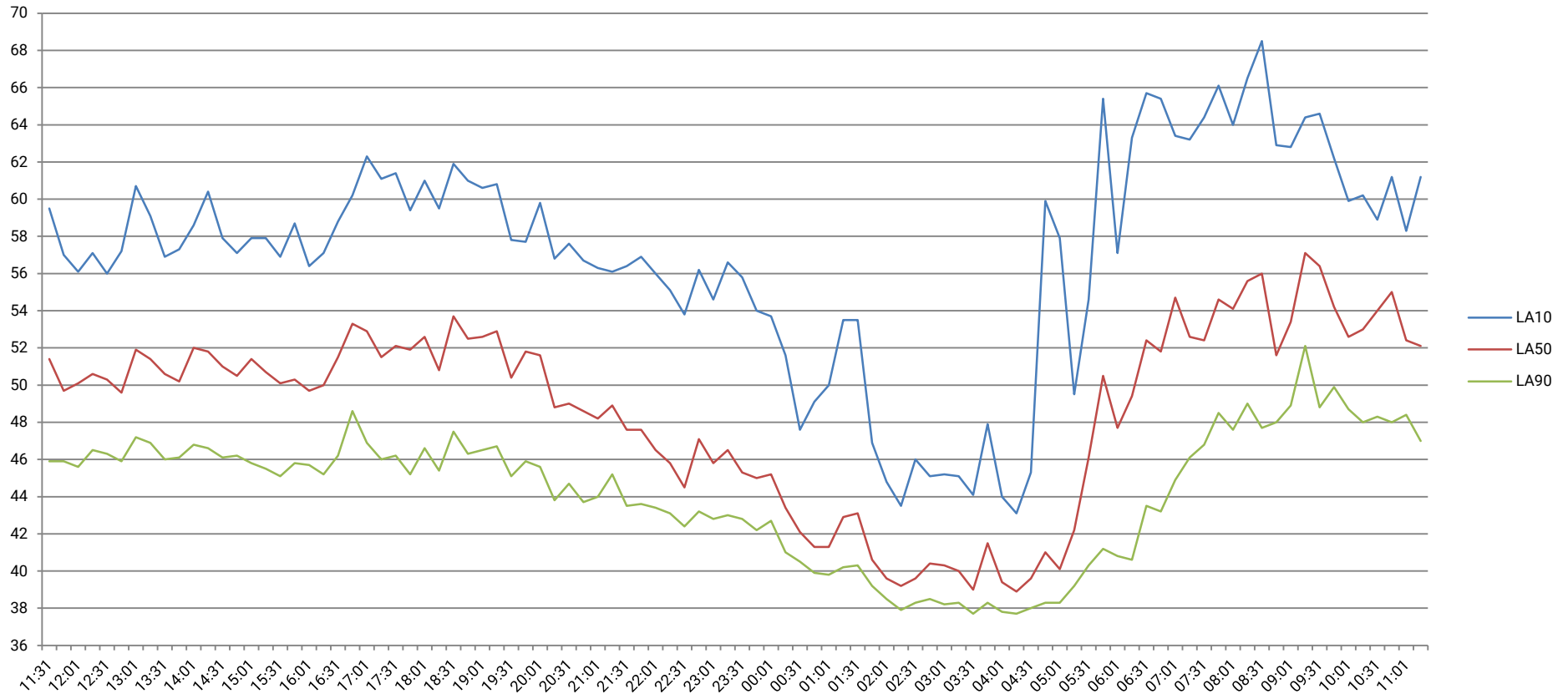
Photos and Drawing



TITLE: LAeq Levels (Location A)	ISSUE DATE: 8th January 2020	DRAWN BY: MGR	A	B	C	D	E	F	G	H
CLIENT: Peter Deer & Associates	PF No: 6655	APPROVED BY: MGR	REVISION							
PROJECT: 35 Templewood Avenue, London NW3	Q	A	M	I	DESIGN AUTH: MGR	SKETCH No. QF/10023/T1				



Unit L, Turnpike Way, High Wycombe,
Buckinghamshire, HP12 3TF
Telephone: 020 8848 3031
www.emtecproducts.co.uk



TITLE:
LA10; LA50 & LA90 Levels (Location A)

ISSUE DATE:
8th January 2020

DRAWN BY:
MGR

A B C D E F G H

CLIENT: Peter Deer & Associates

PF No: 6655

APPROVED BY:
MGR

REVISION

PROJECT: 35 Templewood Avenue, London NW3

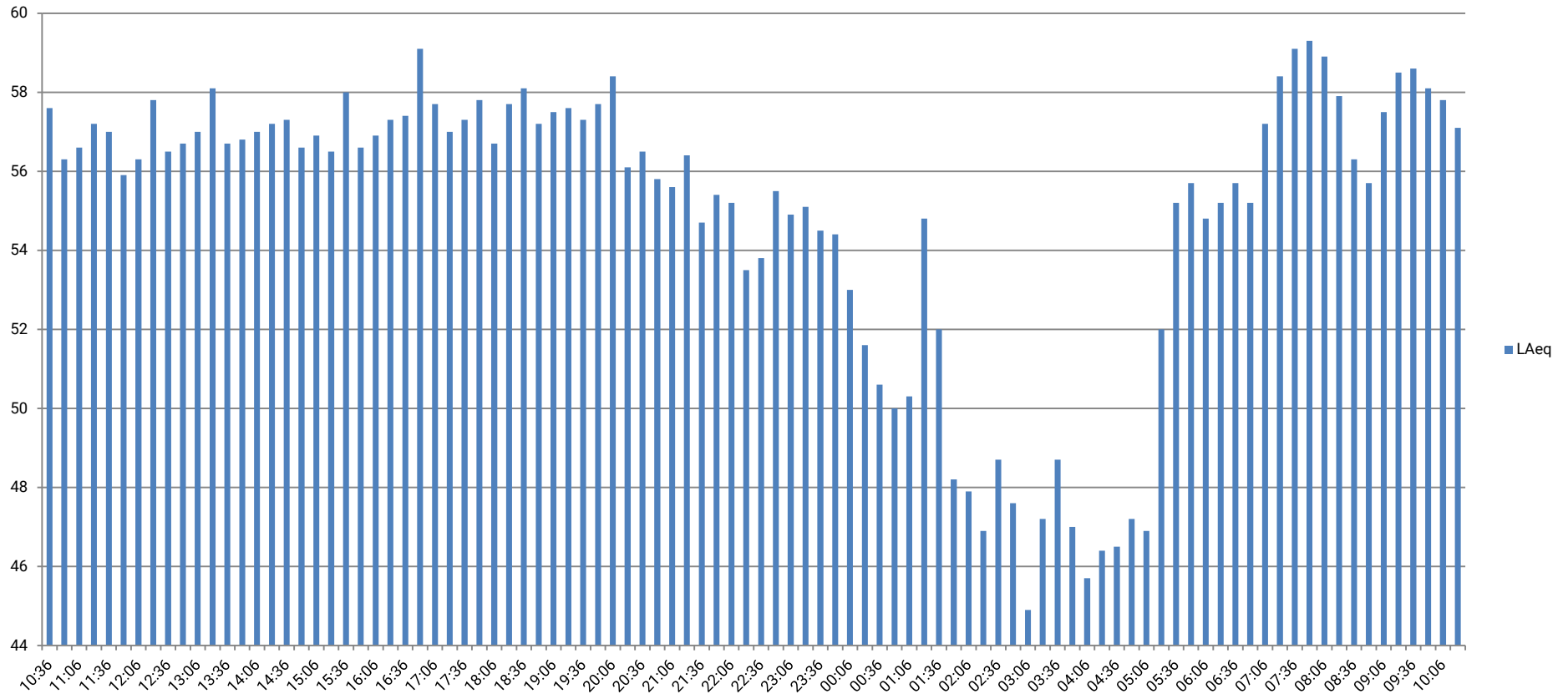
Q A M I

DESIGN AUTH:
MGR

SKETCH No. QF/10023/T2



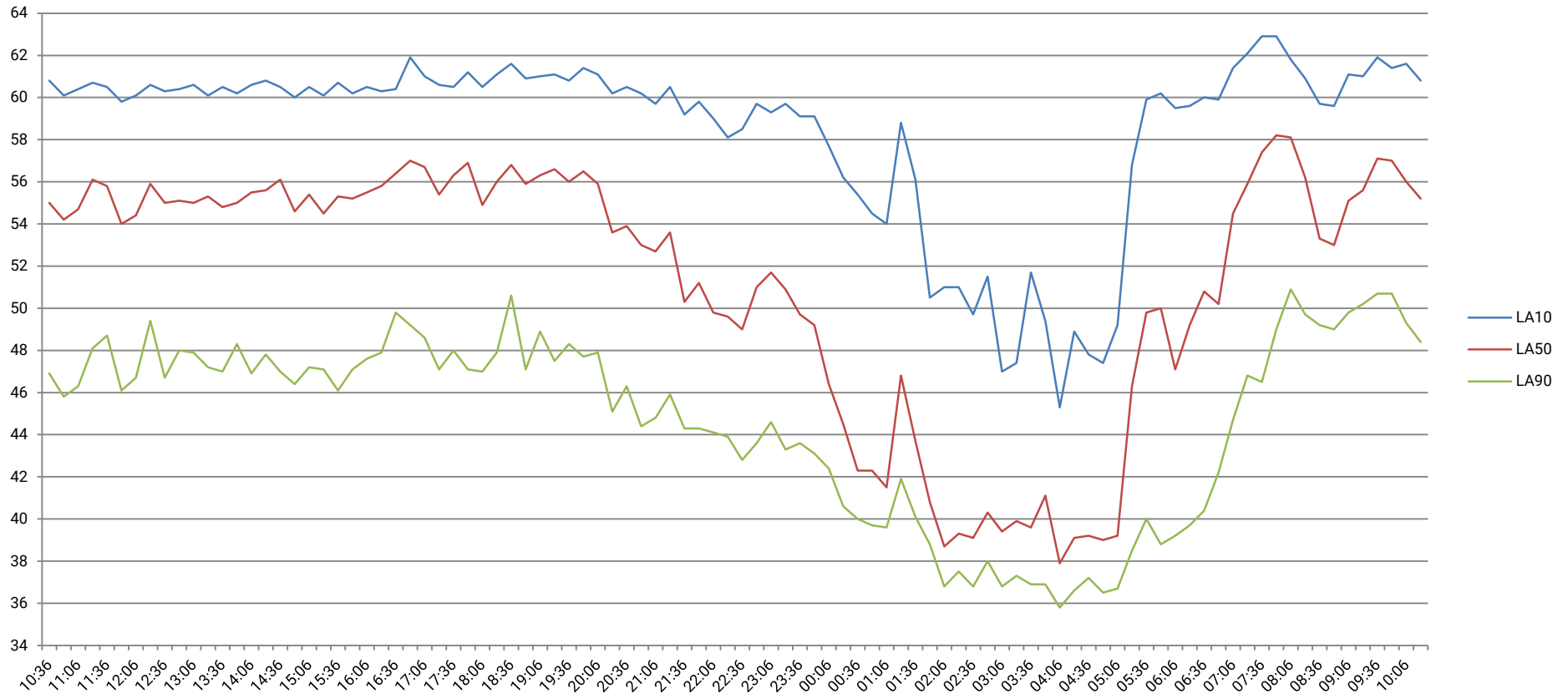
Unit L, Turnpike Way, High Wycombe,
Buckinghamshire, HP12 3TF
Telephone: 020 8848 3031
www.emtecproducts.co.uk



TITLE: LAeq Levels (Location B)	ISSUE DATE: 8th January 2020				DRAWN BY: MGR				A	B	C	D	E	F	G	H
	CLIENT: Peter Deer & Associates				APPROVED BY: MGR				REVISION							
	PROJECT: 35 Templewood Avenue, London NW3				Q	A	M	I	DESIGN AUTH: MGR				SKETCH No. QF/10023/T3			



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 Buckinghamshire, HP12 3TF
 Telephone: 020 8848 3031
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TITLE: LA10; LA50 & LA90 Levels (Location B)	ISSUE DATE: 8th January 2020	DRAWN BY: MGR	A B C D E F G H	<div data-bbox="1633 1263 1934 1377"> </div> <div data-bbox="1612 1390 1965 1490"> Unit L, Turnpike Way, High Wycombe, Buckinghamshire, HP12 3TF Telephone: 020 8848 3031 www.emtecproducts.co.uk </div>
CLIENT: Peter Deer & Associates	PF No: 6655	APPROVED BY: MGR	REVISION	
PROJECT: 35 Templewood Avenue, London NW3	Q A M I	DESIGN AUTH: MGR	SKETCH No. QF/10023/T4	



Photo A – View of front façade of property located at 35 Templewood Avenue, London NW3



Photo B – View of 33 Templewood Avenue, the neighbouring residential property to the south of 35 Templewood Avenue, London NW3



Photo C – View of the front of the house looking towards the southern boundary brick wall



Photo D – View of property at 9 West Heath Road to the west of 35 Templewood Avenue, London NW3

Position of microphone
(Location B)

Neighbouring residential
building

Proposed location of
condensers under
garden with grating
over



Photo E – Microphone B in rear garden looking west towards 9 West Heath Road

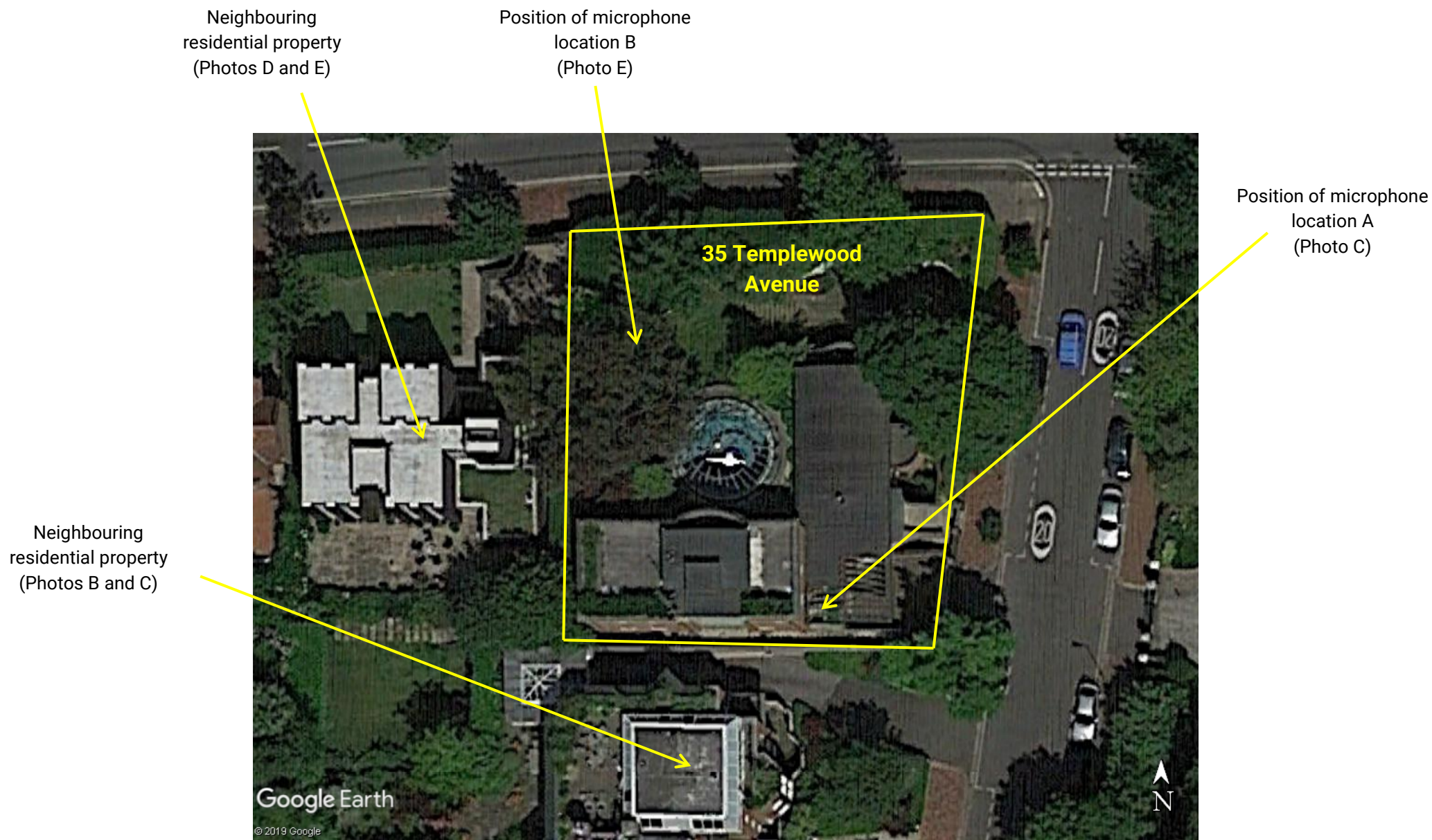


Photo F – Aerial view of the site and the surrounding properties adjacent to 35 Templewood Avenue, London NW3

REV	DATE	DESCRIPTION
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P1	28.10.19	First issue
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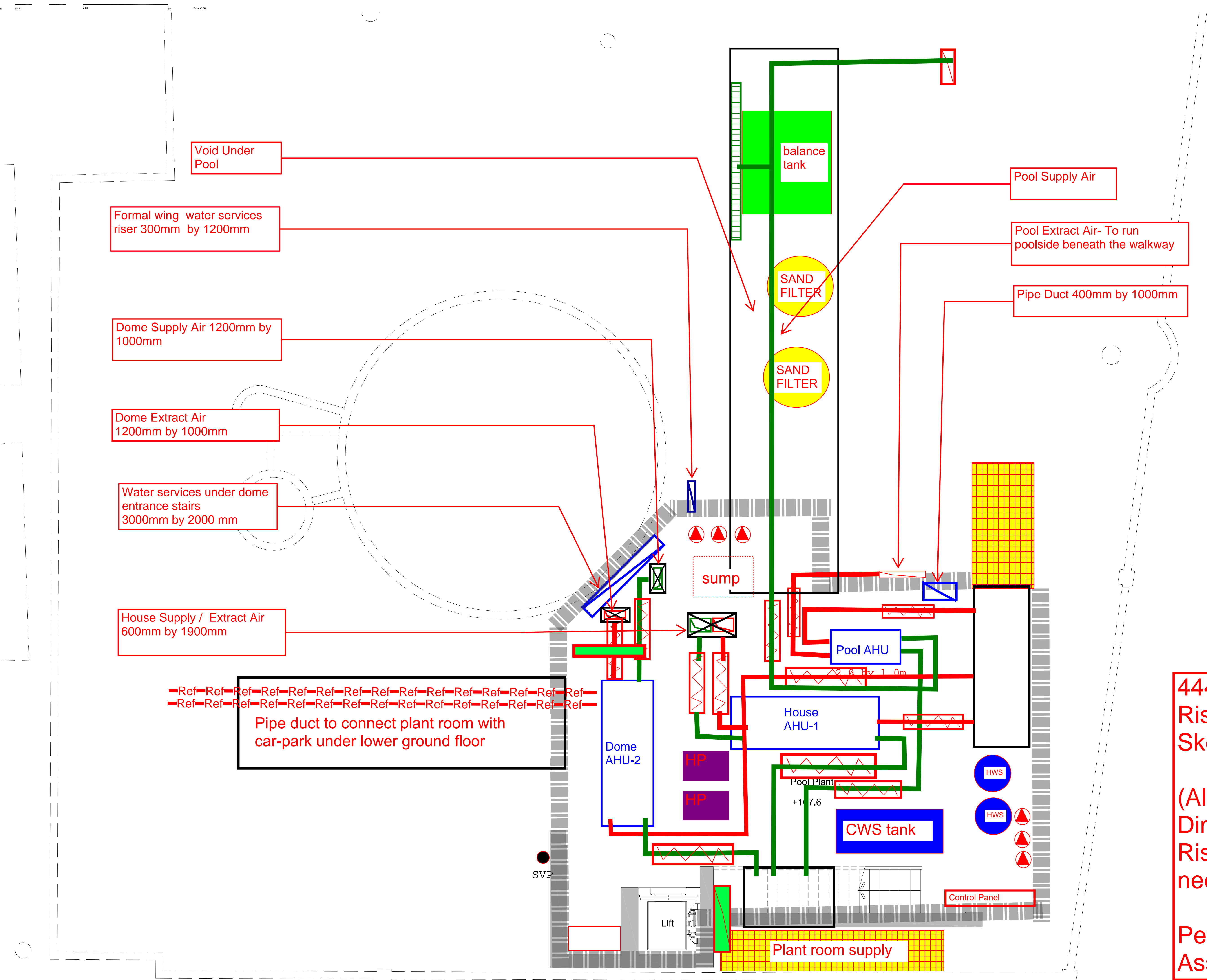
KEY PLAN

INFORMATION

4445-200207dI
Riser Basement
Sketch Plan

(All Riser
Dimensions Show
Riser Clear Space
needed)

Peter Deer and
Associates



Ventilated Garage Entrance Doors

Swimming Pool Supply air from floor Level-Slot Diffuser

Formal wing water services riser 300mm by 1200mm

Supply and Extract to Serve Dome 1000mm by 1200mm. Under Dome entrance stairs

Electrical Riser (2000mm by 250mm)

Kitchen water services riser 300mm by 1200mm

Riser for Supply and Extract at high level to rise to Upper Ground Floor above (600mm x 1200mm)

Under Floor Heating Manifold, approximately 1.5m x 1m

Distribution Board

Garage ventilation grille

Mechanical/ Electrical Service Riser From Basement to Second Floor

Condenser Pit

Juice Bar

Steam

Sauna

Changing

WC

UHF

DB

Gym

Cinema

Pool Plant

+107.6

+110.5

Lift

Lift

Plant room supply

Pool Supply air duct 150mm by 400mm

Swimming Pool Supply air from high level-Slot Diffuser

High Supply and Extract to formal room on ground floor 400mm by 1000mm

Riser for Supply and Extract (700mm by 1600mm)

Swimming Pool Extract through high level slot in pool wall. Concealed duct in wall. Duct 200mm by 600mm

Swimming Pool Supply air from high level-Slot Diffuser

Plant Room Extract ventilation

Mechanical and Electrical Services Riser

Basement Boundary

MVHR on Separate System for Staff

4445-200207dl
Riser Lower Ground Sketch

(All Riser Dimensions Show Riser Clear Space needed)

Peter Deer and Associates

REV DATE DESCRIPTION

P1 28.10.19 First Issue

KEY PLAN

INFORMATION

Formal wing water services
riser 300mm by 1200mm

Supply Duct diffusing air onto
the glass dome

Riser at Low level
underground. Supply and
Extract to Serve Dome
1000mm by 1200mm

Single Extract Grill position
TBC

Riser from high level
basement (cinema) to low
level Lower Ground to riser
Lower Ground Living Area
600mm by 1200mm

Riser high level to first floor
500mm by 1000mm

500mm by 800mm
supply only

Mechanical/ Electrical
Service Riser From
Basement to Second
Floor

Formal reception supply
& extract
400mm by 1000mm

Under Floor Heating
Manifold,
approximately 1.5m
x 1m

Electrical Riser

Mechanical Services and
Electrical

Electrical Riser

Electric cupboard
- access required

Second Electrical riser
500mm deep 1m fall
back zone

4445-200207dl
Upper Ground Floor
Sketch

(All Riser
Dimensions Show
Riser Clear Space
needed)

Peter Deer and
Associates

REV DATE DESCRIPTION

P1 28.10.19 First issue

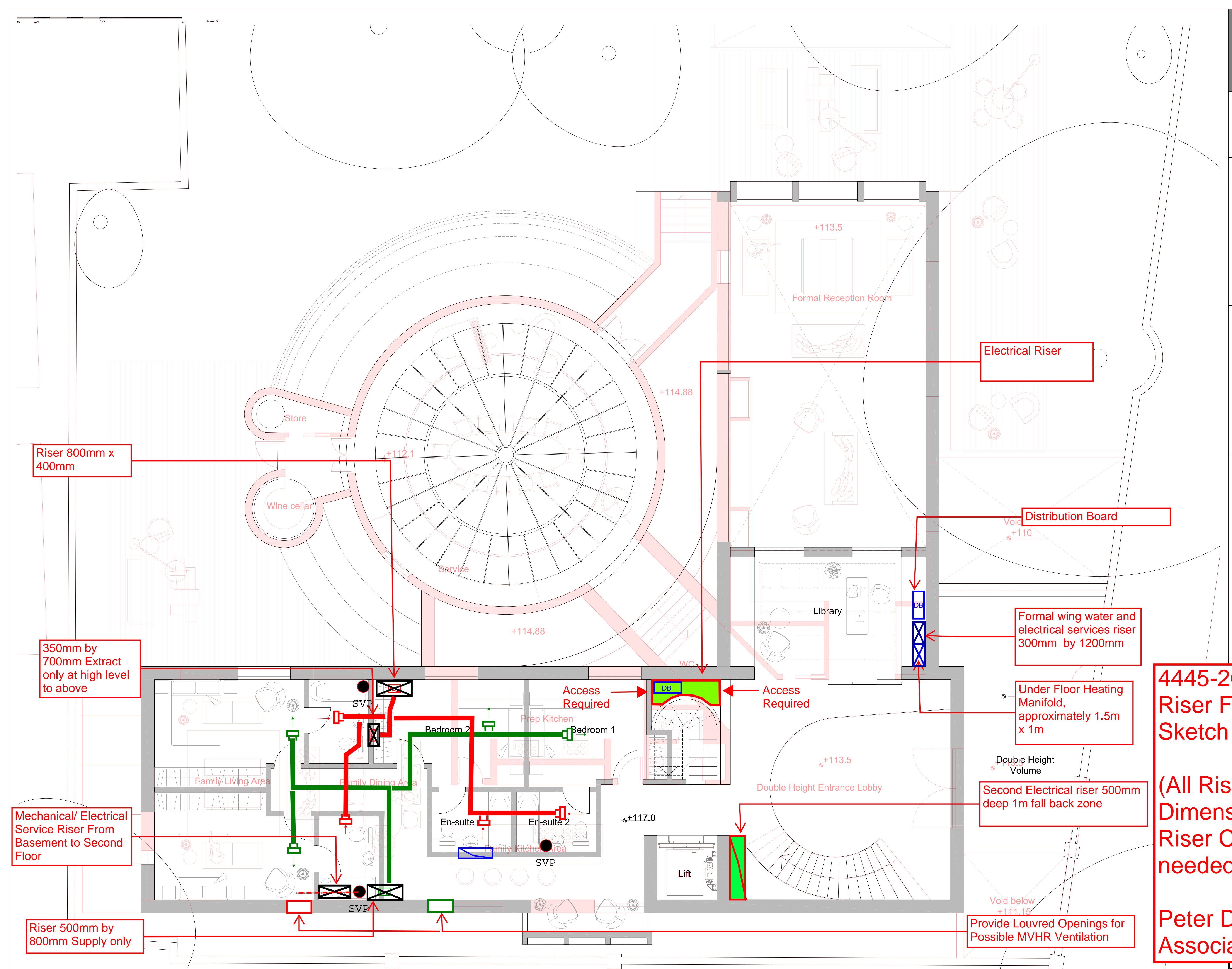
KEY PLAN

INFORMATION

4445-200207dl Riser First Floor Sketch

(All Riser
Dimensions Show
Riser Clear Space
needed)

Peter Deer and
Associates

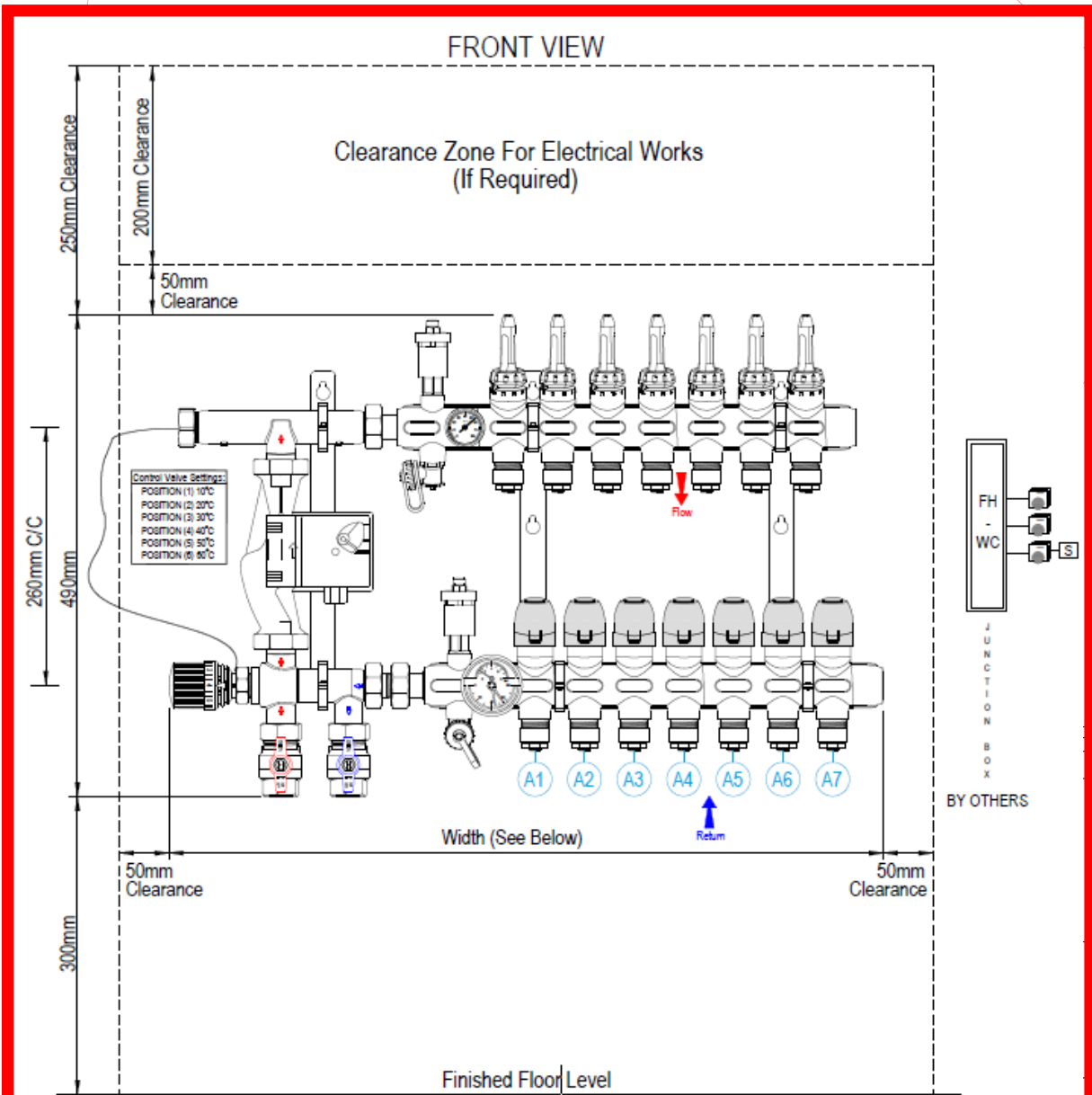


REV	DATE	DESCRIPTION
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P1	28.10.19	First issue
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KEY PLAN

INFORMATION



Typical Under Floor Heating Manifold

Extract Riser
350mm x 700mm

Supply Riser
350mm x 700mm

Under Floor
Heating Manifold,
approximately
1.5m x 1m

Mechanical/ Electrical
Service Riser From
Basement to Second Floor
400mm x 1500mm

SVPs and Bathrooms to be
coordinated for vertical stacks

Electric Riser
access required

Second Electrical riser
500mm deep 1m fall back
zone external access

+113.5

Double Height
Volume

Roof Terrace
+120.5

+120.5

+117.0

DB

Lift

Distribution Board

4445-200207dI
Riser Second Floor
Sketch

(All Riser
Dimensions Show
Riser Clear Space
needed)

Peter Deer and
Associates