

RESULTS OF A 24-HOUR NOISE LEVEL SURVEY CARRIED OUT AT THE
REAR OF THE RESIDENTIAL PROPERTY KNOWN AS "DERWEN" LOCATED IN
COMPTON ROAD, LONDON N6
AND A REPORT ON THE NOISE IMPACT OF THE PROPOSED NEW EXTERNAL PLANT

Test Engineer : O Cawley



Report Author : M G Roberts



Authorised for
Release by : I J Marchant

Client : Carnell Warren Associates
Project : "Derwen", Compton Avenue, London N6
Emtec Ref. : QF11961/PF7953/RP1
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Emtec Products Ltd
T: +44(0)20 8848 3031
E: sales@emtecproducts.co.uk
W: emtecproducts.co.uk

Unit 8, Merlin Centre
High Wycombe
Buckinghamshire
HP12 3QL

Registered in England N° 03164658 VAT Reg. N° GB675017042



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RESULTS OF A 24-HOUR NOISE LEVEL SURVEY CARRIED OUT AT THE
REAR OF THE RESIDENTIAL PROPERTY KNOWN AS "DERWEN" LOCATED IN
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1.0. INTRODUCTION

This report details the results of a 24-hour noise survey carried out at the rear of the residential property known as "Derwen" located in Compton Avenue, London N6.

The objectives of the survey were as follows:

- To assess the proposal to install two new air cooled heat pump condensers in the basement light well at the rear of the property.
- To identify the nearest residential 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 house known as "Derwen" in Compton Avenue in north London is a substantial, detached, private residential property in a large plot. The house is brick built with casement windows and a tiled roof. The front of the house can be seen in the attached Photo A.

At the rear of the house is a large garden and there are similar large, detached houses on either side of property. To the right is a large, newly developed, house known as "Tree Tops" and to the left is slightly older house known as "Woodlea". These properties can be seen in the attached Photos A, B, C and D.

When the property at "Derwen" is redeveloped there will be two basement light wells at the rear of the house and the new heat pump condensers will be located within the light well behind the swimming pool. This layout is shown on the attached Wolf Architect's drawings No PL-202 0 and PL-209 0.

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 01232570

Statistical Analysis Modules: Built in module capable of computing the percentile levels LA₁, LA₁₀, LA₅₀, LA₉₀ and LA₉₉ and also the LA_{eq} level.

Acoustic Calibrator: Bruel & Kjaer type 4231 electronic calibrator. Serial No 1934160

Calibration was performed before and after the survey and was +/- 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 9:28 am on Tuesday the 30th of June 2026 to 9:28 am on Wednesday the 1st of July 2026.

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. LA ₉₀ 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

The microphone was mounted on a tripod and positioned in the rear garden of the property behind the conservatory on the side closest to "Tree Tops". The location of the microphone can be seen on the attached Photos B and D.

The microphone was oriented vertically and was approximately 1.5metres above ground level.

The microphone was connected by a low impedance cable to the associated instrumentation which was contained within a weatherproof housing.

4.2 Weather Conditions

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

Weather daytime: -	Sunny	Weather night time: -	Clear
Wind daytime: -	Calm	Wind night time: -	Calm

The microphone was protected during the survey 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 L_{eq} 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/11961/T1 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 Sketch No QF/11961/T2 at the back of this report.

5.1. Summary of Results

The table QF/11961/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/11961/D1 – Summary of Maximum and Minimum Noise Levels

	LA_{eq}	LA_1	LA_{10}	LA_{50}	LA_{90}	LA_{99}
Minimum	34dBA	37dBA	36dBA	33dBA	32dBA	32dBA
Maximum	70dBA	76dBA	74dBA	65dBA	56dBA	55dBA

The table QF/11961/D2 below states the minimum LA_{90} noise levels recorded during the time periods of 7.00am to 23.00pm (Daytime / Evening) and 23.00pm and 7.00am (Night time)

Table QF/11961/D2 – Minimum LA_{90} Noise Levels – Daytime/Evening and Night time

	Minimum LA_{90}
Daytime/Evening (7am to 11pm)	38dBA
Night Time (11pm to 7am)	32dBA

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 Haringey.

Haringey Council publishes a Sustainable design and construction supplementary planning document which was adopted in March 2013. Section 7.2 of this document, 'Noise', reads as follows:-

Mechanical systems should only be used as a complement to natural ventilation to ensure a constant standard of indoor air quality. Systems should not create a noise nuisance and should be efficient, where possible including technology to recover heat energy for other uses. Where mechanical systems are used, careful consideration will need to be given to ensure air intakes are positioned appropriately. Mechanical ventilation should be designed to ensure no noise nuisance is caused to occupiers of other properties and that noise disturbance does not affect the property in which ventilation is situated.

Section 7.2 of the same document also stipulates the use of BS 4142:1997 "Method for rating industrial noise affecting mixed residential and industrial areas".

The Mayors Ambient Noise Strategy, under section 4E.11, describes two main goals of industrial noise control:

...avoiding exceeding desirable absolute noise levels, such as set out in guidelines produced for the World Health Organisation, PPG24 and BS 8233; and avoiding noise which is considered likely to give cause for complaint, as set out in BS 4142:1997.

We propose that to satisfy the criteria of the local authority, any plant, machinery or equipment should not lead to an increase in the existing background noise levels. In order for there to be no increase in ambient noise levels the maximum external noise level, emitted by any plant, machinery or equipment should be at least 10dB below the lowest existing LA90 background noise level during the period of the plants normal operation. This noise level should not be exceeded at a position 1 metre from any neighbouring residential property.

For tonal or intermittent noise, a 5dB correction should be added, leading to a total of 15dB below the existing LA90

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. Based on the local authority's planning requirements outlined above, the new plant should therefore be designed to be 10dB below the minimum existing LA₉₀ background noise level during the relevant operational period of the plant.

The lowest recorded LA₉₀ noise levels measured during the 24 hour survey period are given in Table QF/11961/D2 above.

It may be possible to run the new plant on a low noise setting at night and any plant should therefore be designed to achieve 22dBA at 1 metre from the nearest noise sensitive window, if the plant is to be operated on a 24 hour basis, and 28dBA if operated during the daytime hours of 7am to 11pm.

5.4. Summary of external noise criteria

Based upon the lowest measured LA_{90} 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/11961/D3: -

Table QF/11961/D3 – recommended design rating levels $L_{Ar,T}$

Type of premises	$L_{Ar,T}$ (24 hour)	$L_{Ar,T}$ (7am - 11pm)
Noise sensitive	22dBA	28dBA

6.0. DISCUSSION OF RESULTS

It is proposed to install two number Mitsubishi PUZ-HWM140YHA heat pump condensers in the light well that will be formed behind the basement swimming pool as shown on the attached Wolf Architects drawings No 2531-PL-202 0 And -209 0.

The noise level of these units plus the natural and required attenuation to achieve the limiting LA_{eq} noise level at 1 metre from the neighbouring houses is shown on the tables QF/11961/D4 and -/D5 below:

Table QF/11961/D4 – Noise Level of the condensers located in the light well and the natural and required attenuation to 1 metre from the nearest window of "Tree Tops"

Noise Level/ Attenuation	Sound Pressure Level (dB ref $2 \times 10^{-5} \text{ N/m}^2$)								dBA
	63	125	250	500	1k	2k	4k	8k	
2 off Mitsubishi PUZ-HWM140YHA condensers - SPL @ 1m free field	60	60	57	54	51	47	43	38	56 @ 1m
Reverberation	+5	+5	+5	+5	+5	+5	+5	+5	
Distance ($10\log A_{24}/A_1$) at 25 metres	-24	-24	-24	-24	-24	-24	-24	-24	
Barrier effect of Light Well – 300mm	-6	-8	-10	-12	-14	-16	-18	-20	
Unattenuated SPL at 1 metre from rear windows of "Tree Tops"	35	33	28	23	18	12	6	-	25

Table QF/11961/D5 – Noise Level of the condensers located in the light well and the natural and required attenuation to 1 metre from the nearest window of “Woodlea”

Noise Level/ Attenuation	Sound Pressure Level (dB ref $2 \times 10^{-5} \text{ N/m}^2$)								dBA
	63	125	250	500	1k	2k	4k	8k	
2 off Mitsubishi PUZ-HWM140YHA condensers - SPL @ 1m free field	60	60	57	54	51	47	43	38	56 @ 1m
Reverberation	+5	+5	+5	+5	+5	+5	+5	+5	
Distance ($10\log A_{19}/A_1$) at 20 metres	-22	-22	-22	-22	-22	-22	-22	-22	
Barrier effect of Light Well – 300mm	-6	-8	-10	-12	-14	-16	-18	-20	
Unattenuated SPL at 1 metre from rear windows of “Woodlea”	37	35	31	25	20	14	8	1	27

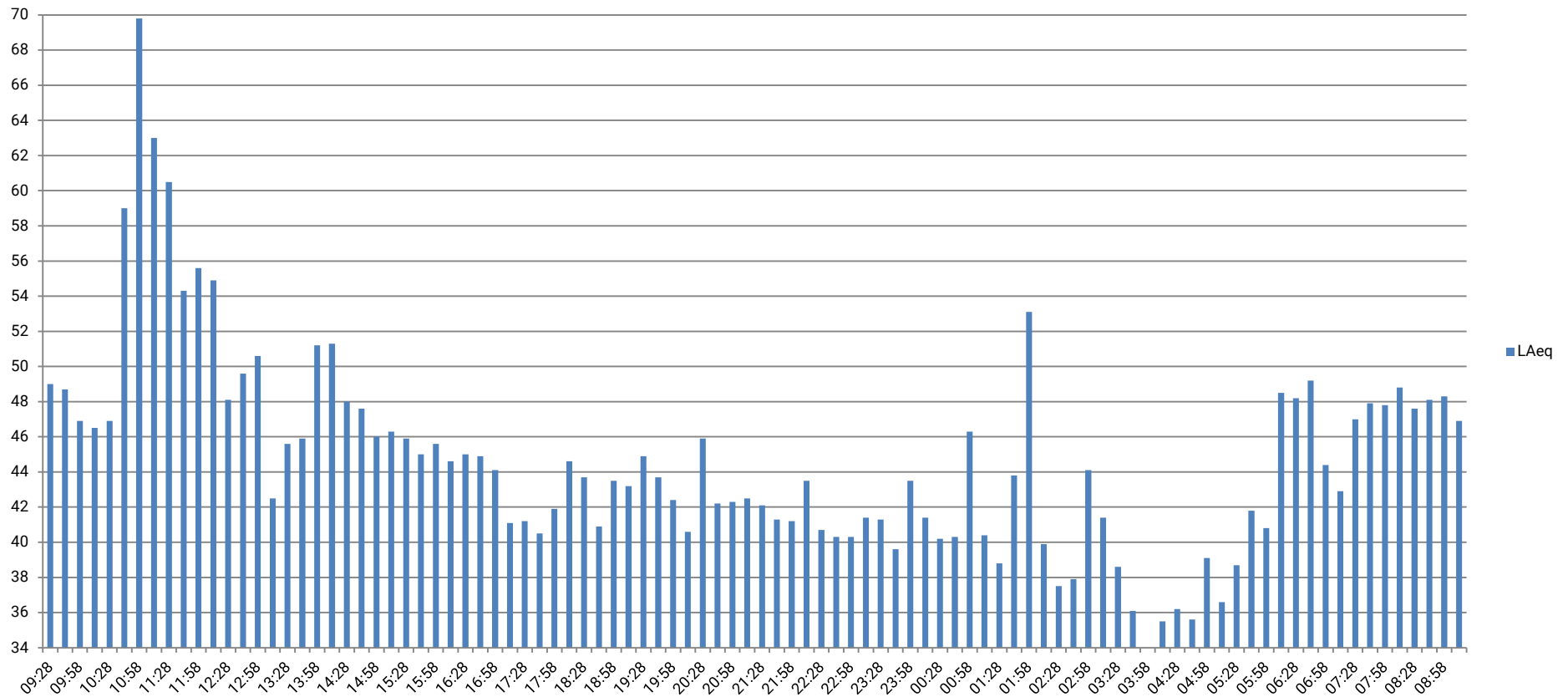
The above calculations show that installing the two Mitsubishi condensers in the light well behind the swimming pool the limiting LA_{eq} noise level of 28dBA for daytime/evening running of the units will not be exceeded at 1 metre from the adjacent residential properties.

If the two condensers are to be run on a 24 hour basis then the following attenuation will need to be introduced in order to achieve the night time limiting LA_{eq} noise level of 22dBA.

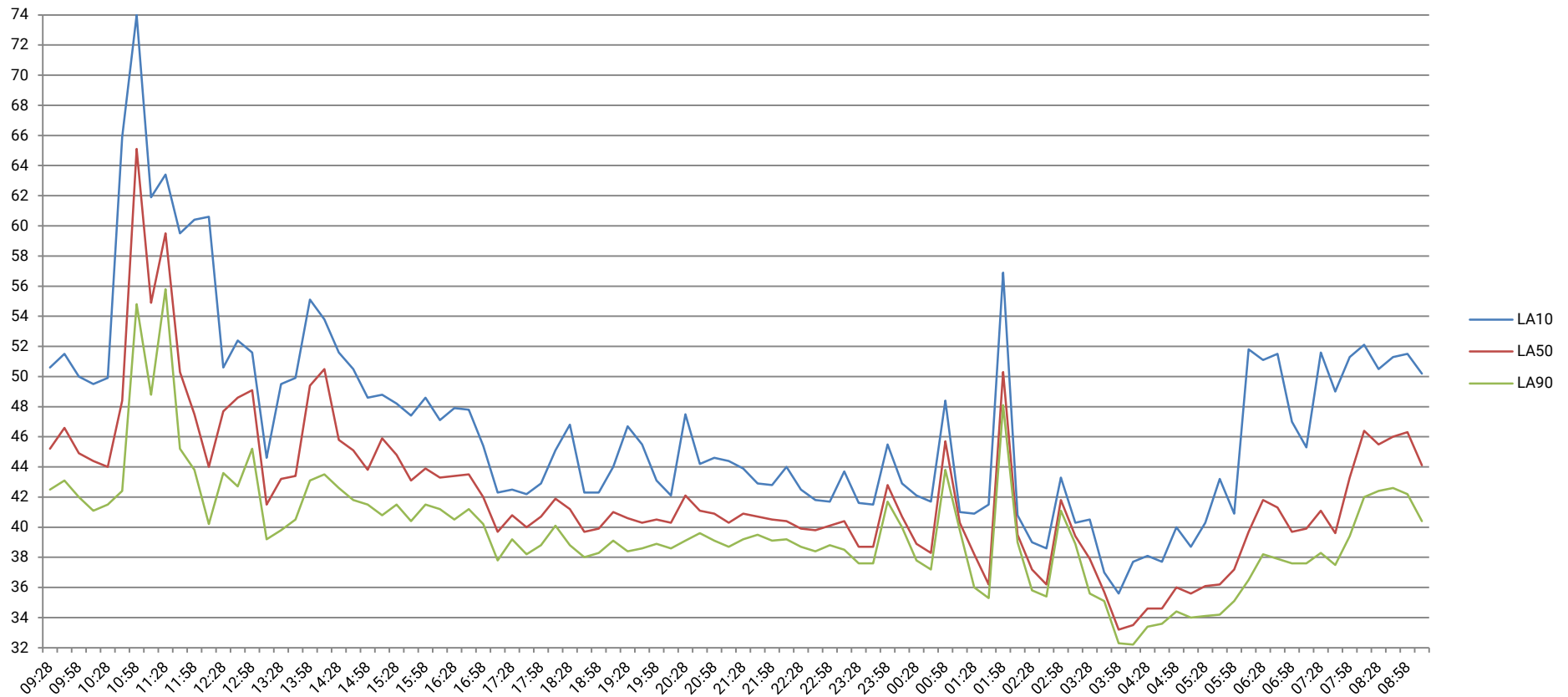
Noise Level/ Attenuation	Sound Pressure Level (dB ref $2 \times 10^{-5} \text{ N/m}^2$)								dBA
	63	125	250	500	1k	2k	4k	8k	
Unattenuated SPL at 1 metre from rear windows of “Woodlea”	37	35	31	25	20	14	8	1	27
Attenuation of Emtec LAH-150-105SF Acoustic Louvres	4	4	5	7	14	16	15	12	
Attenuated SPL at 1 metre from rear windows of “Woodlea”	33	31	26	18	6	-	-	-	21

The two condensers would need to be screened inside an Emtec LAH-150-105SF acoustic louvred enclosure within the light well generally as shown on the attached Emtec sketch No QF/11961/GA1. The condensers should be mounted onto anti-vibration mounts having a static deflection of 6mm and a flexible connection should be installed between the condensers and the outlet acoustic louvres in order to eliminate any structural borne noise.

If the above recommendations are implemented then the installation of the new air cooled condensers will meet the planning requirements of the local council and should evoke no justifiable complaints from the neighbours under the guideline of BS4142:2014 or BS8233:2014.



TITLE: L Aeq Levels	ISSUE DATE: 17th July 2026	DRAWN BY: MGR	A B C D E F G H	Unit 8, Merlin Centre, High Wycombe Buckinghamshire, HP12 3QL Telephone: 020 8848 3031 www.emtecproducts.co.uk
CLIENT: Carnell Warren Associates	PF No: 7953	APPROVED BY: MGR	REVISION	
PROJECT: "Derwen", Compton Avenue, London N6	Q A M I	DESIGN AUTH: MGR	SKETCH No. QF/11961/T1	



TITLE: LA10; LA50 & LA90 Levels	ISSUE DATE: 17th July 2026	DRAWN BY: MGR	A	B	C	D	E	F	G	H
CLIENT: Carnell Warren Associates	PF No: 7953	APPROVED BY: MGR	REVISION							
PROJECT: "Derwen", Compton Avenue, London N6	Q	A	M	I	DESIGN AUTH: MGR	SKETCH No. QF/11961/T2				



Unit 8, Merlin Centre, High Wycombe,
Buckinghamshire, HP12 3QL
Telephone: 020 8848 3031
www.emtecproducts.co.uk

APPENDIX 'A'

Raw Data – Noise Survey

30th of June 2026 to 1st of July 2026

Project: "Derwen", Compton Avenue, London N6
 Client: Carnell Warren Associates
 Date: 30th June to 1st July 2026
 Serial No: 01232570

Address	Start Time	LA _{eq}	LE	Lmax	Lmin	LA ₁	LA ₁₀	LA ₅₀	LA ₉₀	LA ₉₉
1	09:28	49	79	73	40	54	51	45	43	42
2	09:43	49	78	67	39	54	52	47	43	42
3	09:58	47	77	60	39	52	50	45	42	41
4	10:13	47	76	63	39	51	50	44	41	41
5	10:28	47	77	62	39	53	50	44	42	41
6	10:43	59	89	72	39	68	66	48	42	42
7	10:58	70	99	82	51	76	74	65	55	54
8	11:13	63	93	81	40	68	62	55	49	46
9	11:28	61	90	71	51	64	63	60	56	55
10	11:43	54	84	66	41	61	60	50	45	44
11	11:58	56	85	78	39	62	60	48	44	43
12	12:13	55	85	67	38	62	61	44	40	40
13	12:28	48	78	57	39	52	51	48	44	43
14	12:43	50	79	62	38	54	52	49	43	42
15	12:58	51	80	68	39	53	52	49	45	44
16	13:13	43	72	59	36	46	45	42	39	39
17	13:28	46	75	62	37	51	50	43	40	39
18	13:43	46	76	59	37	51	50	43	41	40
19	13:58	51	81	62	40	58	55	49	43	42
20	14:13	51	81	68	39	56	54	51	44	43
21	14:28	48	78	58	40	53	52	46	43	42
22	14:43	48	77	64	39	52	51	45	42	41
23	14:58	46	76	64	39	50	49	44	42	41
24	15:13	46	76	58	38	50	49	46	41	40
25	15:28	46	76	58	39	50	48	45	42	41
26	15:43	45	75	59	38	49	47	43	40	40
27	15:58	46	75	57	39	50	49	44	42	41
28	16:13	45	74	56	38	49	47	43	41	41
29	16:28	45	75	64	38	50	48	43	41	40
30	16:43	45	75	58	38	49	48	44	41	41
31	16:58	44	74	64	38	47	45	42	40	40
32	17:13	41	71	55	36	44	42	40	38	37
33	17:28	41	71	58	36	43	43	41	39	38
34	17:43	41	70	57	35	43	42	40	38	38
35	17:58	42	72	64	36	44	43	41	39	38
36	18:13	45	74	64	37	49	45	42	40	40
37	18:28	44	73	62	37	49	47	41	39	38
38	18:43	41	71	57	36	44	42	40	38	38
39	18:58	44	73	63	36	46	42	40	38	38
40	19:13	43	73	64	36	47	44	41	39	39
41	19:28	45	75	62	36	51	47	41	38	38
42	19:43	44	73	61	36	49	46	40	39	38
43	19:58	42	72	60	37	47	43	41	39	38
44	20:13	41	70	50	37	43	42	40	39	38
45	20:28	46	76	65	37	50	48	42	39	39
46	20:43	42	72	54	38	46	44	41	40	39
47	20:58	42	72	55	38	46	45	41	39	39
48	21:13	43	72	60	37	47	44	40	39	39
49	21:28	42	72	55	38	46	44	41	39	39

50	21:43	41	71	52	38	44	43	41	40	39
51	21:58	41	71	56	37	44	43	41	39	39
52	22:13	44	73	59	38	48	44	40	39	39
53	22:28	41	70	55	38	44	43	40	39	39
54	22:43	40	70	49	37	43	42	40	38	38
55	22:58	40	70	51	38	42	42	40	39	39
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60	00:13	41	71	51	39	44	43	41	40	40
61	00:28	40	70	52	37	44	42	39	38	38
62	00:43	40	70	56	36	44	42	38	37	37
63	00:58	46	76	56	40	49	48	46	44	43
64	01:13	40	70	45	39	41	41	40	40	40
65	01:28	39	68	46	35	42	41	38	36	36
66	01:43	44	73	63	35	46	42	36	35	35
67	01:58	53	83	61	39	58	57	50	48	48
68	02:13	40	70	46	38	42	41	40	39	39
69	02:28	38	67	47	35	40	39	37	36	36
70	02:43	38	68	59	34	41	39	36	35	35
71	02:58	44	74	64	39	44	43	42	41	41
72	03:13	41	71	60	38	41	40	39	39	39
73	03:28	39	68	47	33	42	41	38	36	35
74	03:43	36	66	50	33	38	37	36	35	35
75	03:58	34	64	46	31	37	36	33	32	32
76	04:13	36	65	51	31	40	38	34	32	32
77	04:28	36	66	50	32	40	38	35	33	33
78	04:43	36	65	48	33	39	38	35	34	33
79	04:58	39	69	60	33	42	40	36	34	34
80	05:13	37	66	50	33	40	39	36	34	34
81	05:28	39	68	60	33	42	40	36	34	34
82	05:43	42	71	59	33	48	43	36	34	34
83	05:58	41	70	59	34	45	41	37	35	35
84	06:13	49	78	66	34	56	52	40	37	36
85	06:28	48	78	76	36	54	51	42	38	37
86	06:43	49	79	75	34	55	52	41	38	37
87	06:58	44	74	67	36	50	47	40	38	37
88	07:13	43	73	61	35	48	45	40	38	37
89	07:28	47	77	63	36	54	52	41	38	38
90	07:43	48	78	67	36	56	49	40	38	37
91	07:58	48	77	66	37	55	51	43	39	39
92	08:13	49	78	68	38	54	52	46	42	41
93	08:28	48	77	62	40	53	51	46	42	42
94	08:43	48	78	63	40	53	51	46	43	42
95	08:58	48	78	59	39	53	52	46	42	41
96	09:13	47	77	63	38	52	50	44	40	40

QF11961/PF7953/RP1

EMTEC PRODUCTS LTD.

APPENDIX 'B'

Photos and Drawing

Derwen

Tree Tops



Photo A - Front of the property at Derwen, Compton Avenue, London N6

Windows of the adjacent
property Tree Tops

Derwen

Microphone
location



Photo B – Microphone in rear garden behind conservatory with Tree Tops behind boundary wall

Derwen

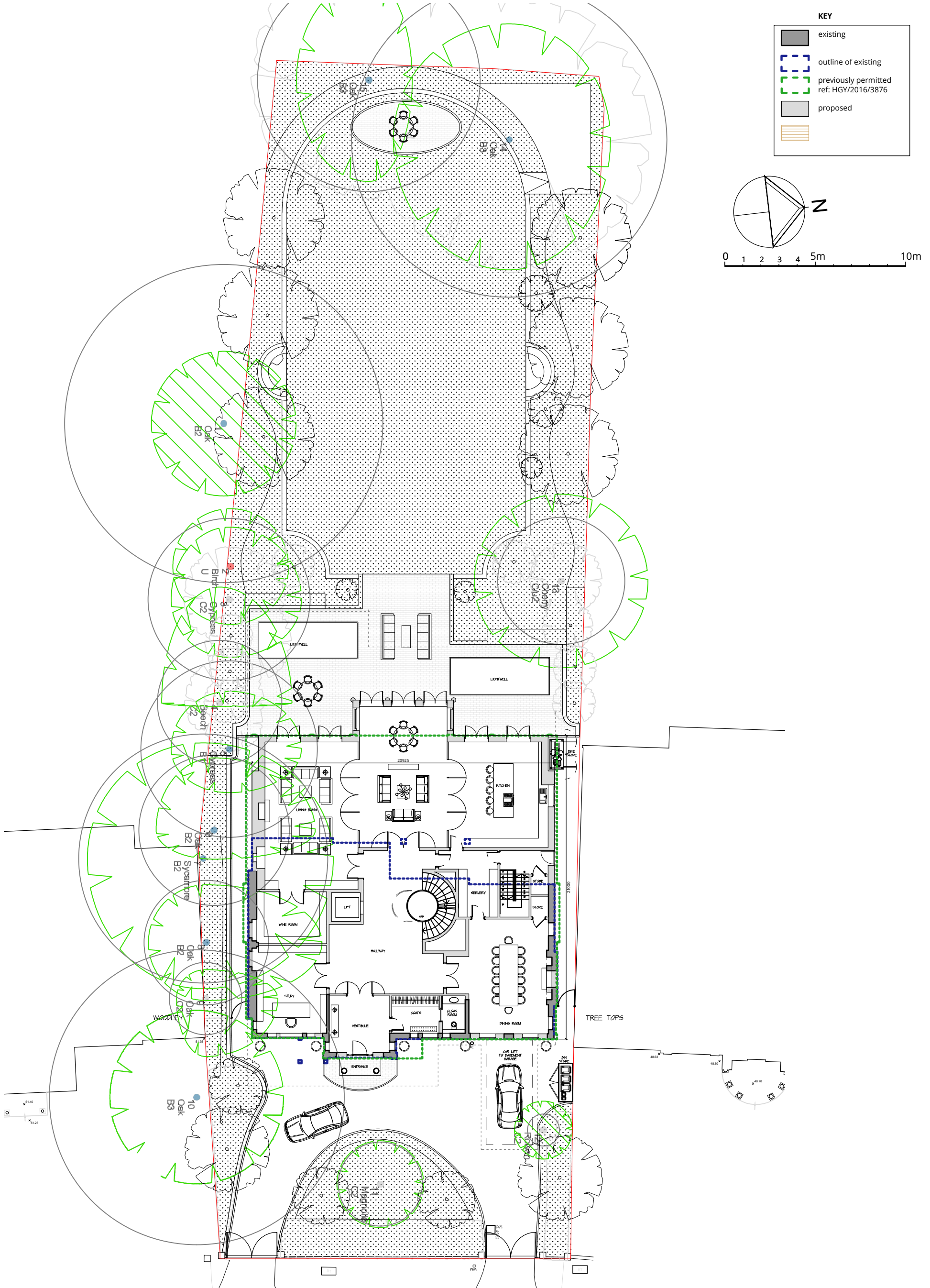
"Woodlea" behind
boundary fence



Photo C - View across rear garden towards neighbouring property "Woodlea"



Photo D - Aerial view of house showing microphone location in rear garden and adjacent residential properties



PROPOSED SITE PLAN
- Refer to Landscaping Plan by Cowley White
1:250 @ A3



WOLFF ARCHITECTS

London 16 Lambton Place Notting Hill
London W11 2SH T +44 (0)20 7229 3125
Oxford Chandos Yard 83 Bicester Road
Long Crendon HP18 9EE T +44 (0)1844 203310
W www.wolffarchitects.co.uk E info@wolffarchitects.co.uk

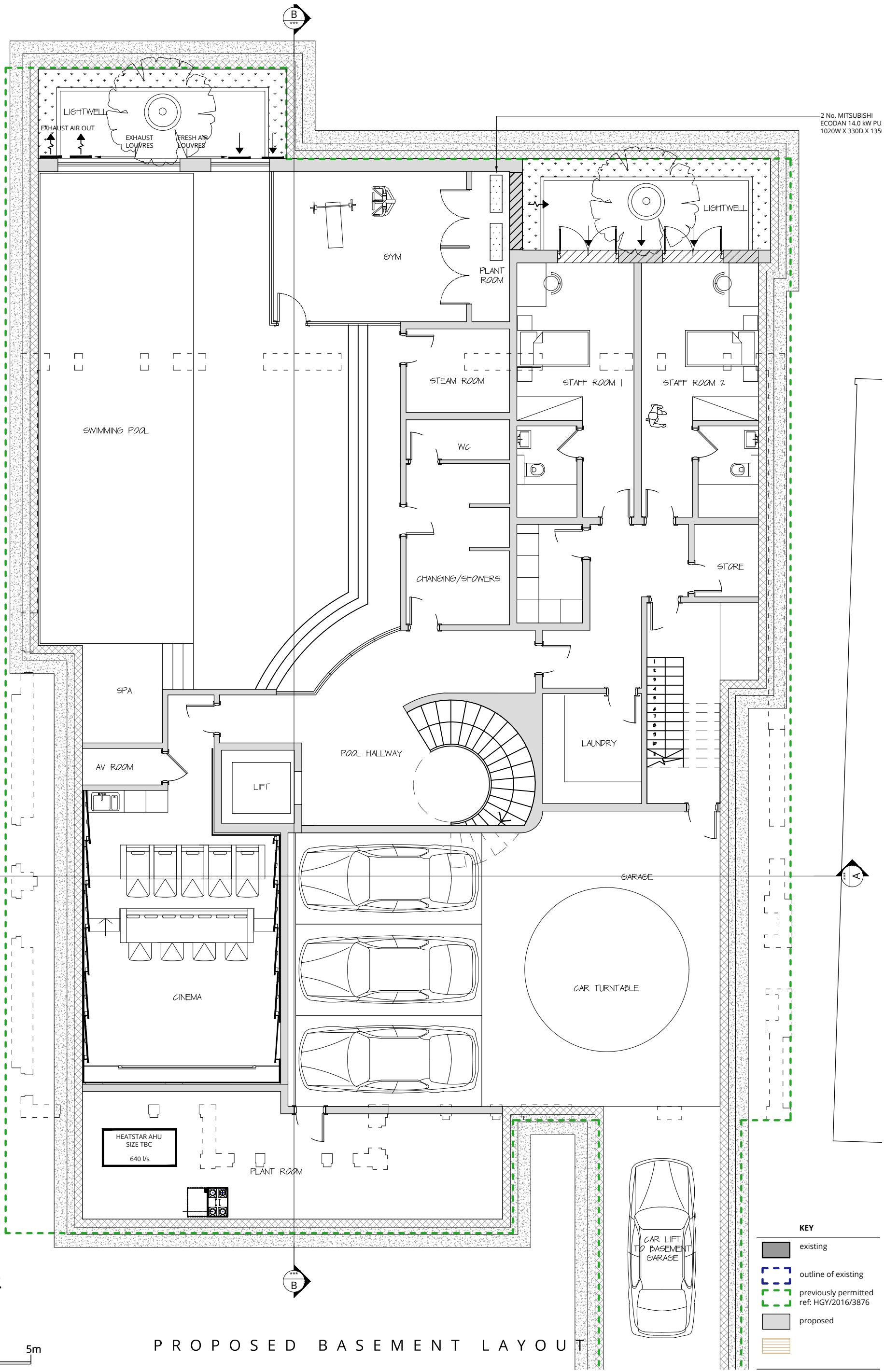
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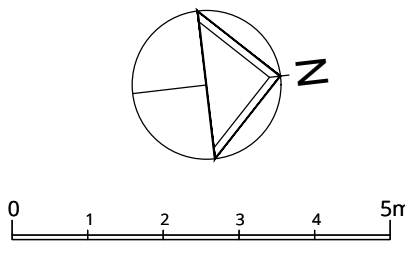
Rev.	Description	Date	Rev.	Description	Date
0	First issue.	12.05.26			

Project Title Derwen, Compton Avenue, London N6 4LH				
Drawing Title PROPOSED Site Plan 1:250				
Status PLANNING	Drawn by AW	Checked by		
Scale 1:250 @ A3	Project No. 2531	Work Stage PL	Dwg. No. 201	Rev. 0





2 No. MITSUBISHI
ECODAN 14.0 kW PU
1020W X 330D X 135I



PROPOSED BASEMENT LAYOUT



London 16 Lambton Place Notting Hill
London W11 2SH T +44 (0)20 7229 3125
Oxford Chandos Yard 83 Bicester Road
Long Crendon HP18 9EE T +44 (0)1844 203310
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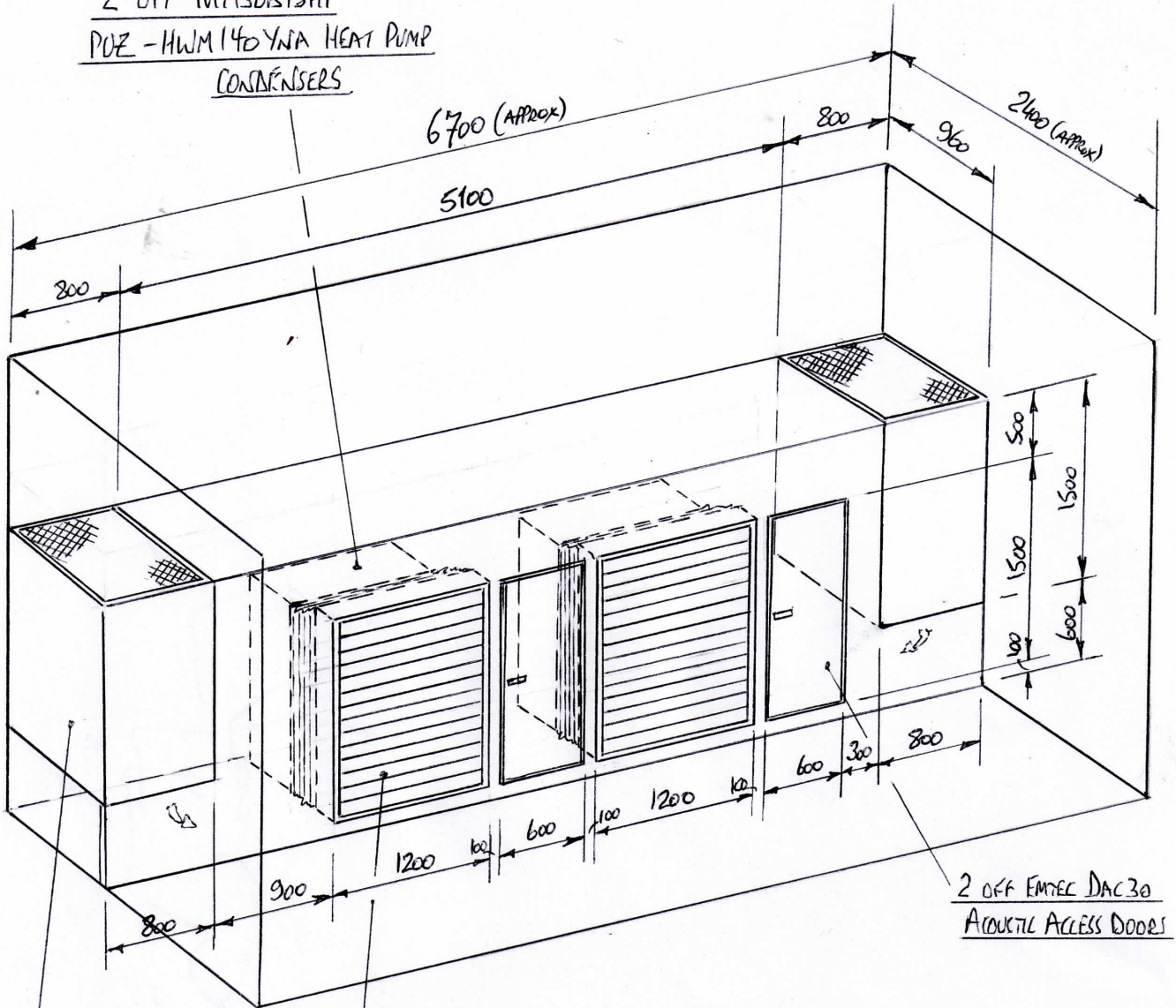
Rev.	Description	Date	Rev.	Description	Date
0	First issue.	07.04.26			

Project Title					
Derwen, Compton Avenue, London N6 4LH					
Drawing Title					
PROPOSED Basement Layout					
Status		Drawn by		Checked by	
PLANNING		AW			
Scale	Project No.	Work Stage	Dwg. No.	Rev.	
1:100 @ A3	2531	PL	209	0	



All dimensions in mm unless stated

2 OFF MITSUBISHI
PDE-HWM140YNA HEAT PUMP
CONDENSERS



2 OFF EMTEC RAACKS/1500
INLET SILENCERS

CONDENSER SCREENING IN SWIMMING POOL LIGHT WELL

2 OFF EMTEC LAH-150-105SF
ACOUSTIC LOUVRES

2 OFF EMTEC DAC30
ACOUSTIC ACCESS DOORS

ACOUSTIC SCREENING LAYOUT TITLE	21/07/2026 ISSUE DATE:	MGR DRAWN BY:	A B C D E F G H	EMTEC
CLIENT <u>CARWELL WARREN ASSOCIATES</u> PROJECT <u>"DERWEN" COMPTON AVENUE, N.G.</u>	PF No. Q STATUS A M I	APPROVED BY: <i>[Signature]</i> DESIGN AUTH: <u>MGR.</u>	REVISION SK No. <u>QF/11961/GAL</u>	Unit 8, The Merlin Centre High Wycombe, HP12 3QL Tel: 020 8848 3031 Web: www.emtecproducts.co.uk