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REPORT No. 2106003-3

Chalcot House
59.5 Netherhall Gardens
London
NW3 5RE

ENVIRONMENTAL NOISE SURVEY REPORT

PREPARED: 22/06/2021

Presented by:

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CONTENTS

1.0 Introduction

1.1 E+M Tecnica has commissioned Noico Ltd to conduct an environmental noise survey at Chalcot House, 59.5 Netherhall Gardens, London, NW3 5RE.

1.2 The purpose of the survey is to obtain statistical noise data and to determine the background noise levels at the site. Based on the noise survey data, noise criteria are to be established for limiting noise emission from the mechanical plant installations serving the premises. The noise criteria are to be set in accordance with the requirements of the local planning authority (London Borough of Camden Council).

1.3 The development site comprises a two story, detached property which is set back from Netherhall Gardens and accessed via a driveway between 59 and 61 Netherhall Gardens. It is understood this structure will be demolished to make way for a new residential property. As part of the development plans, items of mechanical plant are to be installed externally. When plant details are available a noise assessment will be carried out to ensure compliance with the planning noise requirements

1.4 Properties surrounding the site are predominantly residential including: Bond Court, 5 Arkwright Road to the north, 61 Netherhall Gardens to the south. Devonshire House Pre-Preparatory School is located to the east.

2.0 Instrumentation

2.1 A precision grade Norsonic 140 ‘Type 1’ Integrating Sound Level Meter was used for the survey. This was equipped with an environmental microphone and extension cable. The instrument was powered by an external battery and stored in a weatherproof case.

2.2 The instrument was calibrated prior and subsequent to use, with no calibration drift recorded.

3.0 Survey Details

3.1 Location: The environmental noise analyser microphone was located externally, to the east of the property, fixed to a tripod and raised 1.5 metres from ground level. The equipment was approximately 2 metres from the property’s east and south boundary fences. This position was chosen as it was considered to be representative of the background noise environment that exists at the nearest noise-affected properties and is shown in Figure 2.

3.2 Period: Noise monitoring was carried out continuously from approximately 10:00 hrs on 16th June 2021 through to 17:15 hrs on 17th June 2021. The instrument was set up to monitor noise levels continuously and store data in fifteen-minute intervals.

3.3 Weather: The prevailing weather condition throughout the majority of the entire survey period was satisfactory for noise monitoring, being mostly dry, mild and with little to moderate breeze. Windspeed, although not recorded, was considered to be less than 5 m/s throughout the survey period.

3.4 Site Noise Characteristics: The ambient noise level was characterised by road traffic noise, in particular, along Arkwright Road to the north, B511 (Fitzjohn's Avenue) to the east and Netherhall Gardens to the south – shown in Figure 2. Some construction work was being carried out at 59 Netherhall Gardens and at the B511, Netherhall Gardens junction during the survey period, however, this will have no effect on the lowest background level recorded. It is thought that no unusual events occurred during the survey period. The data is considered a true representation of the area's background noise level.

4.0 Survey Results

4.1 The results of the environmental survey are presented in graphical and numerical format in the attached appendices, showing the recorded values of L_{Aeq} and L_{A90}.

4.2 See Appendix 1 for a glossary of terms.

4.3 With reference to the measured data, the minimum background noise level measured during the survey period was:

Daytime (07:00 to 23:00hrs)	- 35.7 dB L_{A90}
Night time (23:00 to 07:00hrs)	- 29.9 dB L_{A90}

5.0 Environmental Noise Level Criteria

5.1 Criteria for mechanical services noise emission are normally based upon the prevailing level of background noise in the period of concern and may be set against this to a level as normally defined by the local planning authority.

5.2 London Borough of Camden Council has advised that noise arising from fixed plant installations should not cause an increase in the existing minimum background noise level (as expressed as a L_{A90}) at the nearest noise affected property. In practical terms, this means that the noise arising from the plant should be at least 10 dB(A) below the minimum background noise level.

5.3 To conform to the above criteria, and in accordance with the minimum background noise levels measured during the survey (summarised in 4.3 above), noise from the plant installations should not exceed the following values. Note these have been rounded to the nearest whole number for practical purposes.

Daytime plant operation (07:00 to 23:00hrs)	- 26 dB L_{Aeq}
Night time (23:00 to 07:00hrs)	- 20 dB L_{Aeq}

Note: These levels must be achieved cumulatively with all plant operating, and as measured at 1 metre from the window of the nearest affected property.

6.0 Conclusion

6.1 A background noise level survey has been carried out at Chalcot House, 59.5 Netherhall Gardens, London, NW3 5RE.

6.2 Based upon the survey results and discussions with the local planning authority, criteria applicable to noise from the mechanical services plant have been established.

Appendix 1 - Glossary of Terms

Decibel, dB	A unit of level derived from the logarithm of the ratio between the value of a quantity and a reference value. For sound pressure level (Lp) the reference quantity is $2x10^{-5}$ N/m^2. The sound pressure level existing when microphone measured pressure is $2x10^{-5}$ N/m^2 is 0 dB, the threshold of hearing.
L	Instantaneous value of Sound Pressure Level (Lp).
Frequency	Is related to sound pitch; frequency equals the ratio between velocity of sound and wavelength.
A weighting	Arithmetic corrections applied to values of Lp according to frequency. When logarithmically summed for all frequencies, the resulting single "A weighted value" becomes comparable with other such values from which a comparative loudness judgement can be made, then, without knowledge of frequency content of the source.
$L_{eq,T}$	Equivalent continuous level of sound pressure which, if it actually existed for the integration time period T of the measurement, would possess the same energy as the constantly varying values of Lp actually measured.
$L_{Aeq,T}$	Equivalent continuous level of A weighted sound pressure which, if it actually existed for the integration time period, T, of the measurement would possess the same energy as the constantly varying values of Lp actually measured.
$L_{n,T}$	Lp which was exceeded for n% of time, T.
$L_{An,T}$	Level in dBA which was exceeded for n% of time, T.
$L_{max,T}$	The instantaneous maximum sound pressure level which occurred during time, T.
$L_{Amax,T}$	The instantaneous maximum A weighted sound pressure level which occurred during time, T.
Background Noise Level	The value of $L_{A90,T}$, ref. BS4142:2014.
Traffic Noise Level	The value of $L_{A10,T}$.
Specific Noise Level	The value of $L_{Aeq,T}$ at the assessment position produced by the specific noise source, ref. BS4142:2014.
Rating Level	The specific noise level, corrected to account for any characteristic features of the noise, by adding a 5 dBA penalty for any tonal, impulsive or irregular qualities, ref. BS4142:2014.
Specific Noise Source	The noise source under consideration when assessing the likelihood of complaint.
Assessment Position	Unless otherwise noted, is a point at 1 m from the façade of the nearest affected sensitive property.

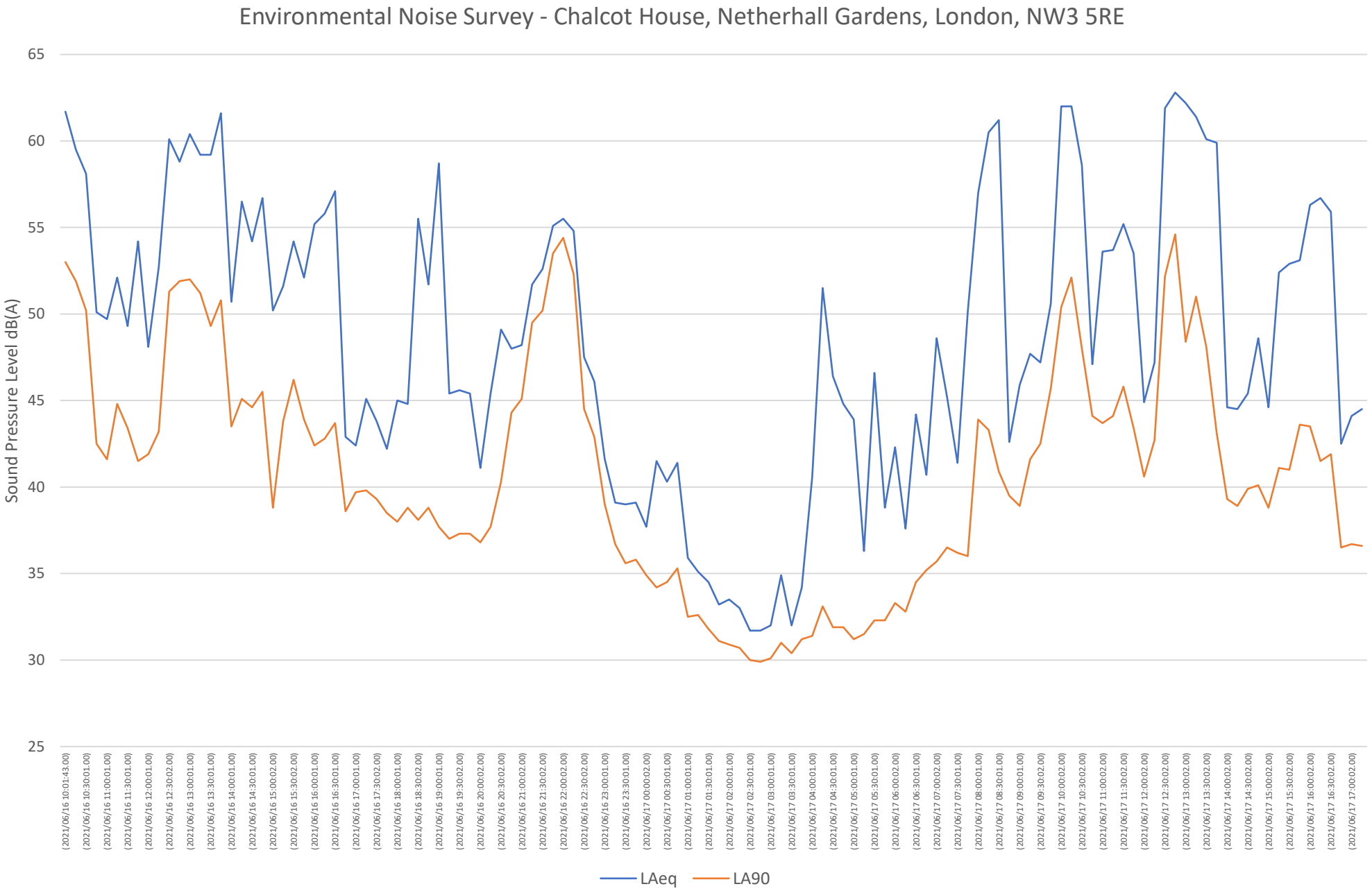
Appendix 1 - Environmental Noise Monitoring Data

Date	LAeq	LA90
(2021/06/16 10:01:43.00)	61.7	53
(2021/06/16 10:15:01.00)	59.5	51.9
(2021/06/16 10:30:01.00)	58.1	50.2
(2021/06/16 10:45:01.00)	50.1	42.5
(2021/06/16 11:00:01.00)	49.7	41.6
(2021/06/16 11:15:01.00)	52.1	44.8
(2021/06/16 11:30:01.00)	49.3	43.4
(2021/06/16 11:45:01.00)	54.2	41.5
(2021/06/16 12:00:01.00)	48.1	41.9
(2021/06/16 12:15:01.00)	52.7	43.2
(2021/06/16 12:30:02.00)	60.1	51.3
(2021/06/16 12:45:01.00)	58.8	51.9
(2021/06/16 13:00:01.00)	60.4	52
(2021/06/16 13:15:01.00)	59.2	51.2
(2021/06/16 13:30:01.00)	59.2	49.3
(2021/06/16 13:45:01.00)	61.6	50.8
(2021/06/16 14:00:01.00)	50.7	43.5
(2021/06/16 14:15:02.00)	56.5	45.1
(2021/06/16 14:30:01.00)	54.2	44.6
(2021/06/16 14:45:01.00)	56.7	45.5
(2021/06/16 15:00:02.00)	50.2	38.8
(2021/06/16 15:15:01.00)	51.6	43.8
(2021/06/16 15:30:02.00)	54.2	46.2
(2021/06/16 15:45:01.00)	52.1	43.9
(2021/06/16 16:00:01.00)	55.2	42.4
(2021/06/16 16:15:02.00)	55.8	42.8
(2021/06/16 16:30:01.00)	57.1	43.7
(2021/06/16 16:45:02.00)	42.9	38.6
(2021/06/16 17:00:01.00)	42.4	39.7
(2021/06/16 17:15:02.00)	45.1	39.8
(2021/06/16 17:30:02.00)	43.8	39.3
(2021/06/16 17:45:01.00)	42.2	38.5
(2021/06/16 18:00:01.00)	45	38
(2021/06/16 18:15:01.00)	44.8	38.8
(2021/06/16 18:30:02.00)	55.5	38.1
(2021/06/16 18:45:02.00)	51.7	38.8
(2021/06/16 19:00:01.00)	58.7	37.7
(2021/06/16 19:15:01.00)	45.4	37
(2021/06/16 19:30:02.00)	45.6	37.3
(2021/06/16 19:45:02.00)	45.4	37.3
(2021/06/16 20:00:02.00)	41.1	36.8
(2021/06/16 20:15:02.00)	45.4	37.7
(2021/06/16 20:30:02.00)	49.1	40.3
(2021/06/16 20:45:02.00)	48	44.3
(2021/06/16 21:00:02.00)	48.2	45.1
(2021/06/16 21:15:02.00)	51.7	49.5
(2021/06/16 21:30:02.00)	52.6	50.2
(2021/06/16 21:45:02.00)	55.1	53.5
(2021/06/16 22:00:02.00)	55.5	54.4
(2021/06/16 22:15:02.00)	54.8	52.3
(2021/06/16 22:30:02.00)	47.5	44.5
(2021/06/16 22:45:02.00)	46.1	42.9
(2021/06/16 23:00:01.00)	41.6	39
(2021/06/16 23:15:02.00)	39.1	36.7
(2021/06/16 23:30:01.00)	39	35.6
(2021/06/16 23:45:02.00)	39.1	35.8
(2021/06/17 00:00:02.00)	37.7	34.9

Date	LAeq	LA90
(2021/06/17 00:15:01.00)	41.5	34.2
(2021/06/17 00:30:01.00)	40.3	34.5
(2021/06/17 00:45:01.00)	41.4	35.3
(2021/06/17 01:00:01.00)	35.9	32.5
(2021/06/17 01:15:01.00)	35.1	32.6
(2021/06/17 01:30:01.00)	34.5	31.8
(2021/06/17 01:45:01.00)	33.2	31.1
(2021/06/17 02:00:01.00)	33.5	30.9
(2021/06/17 02:15:01.00)	33	30.7
(2021/06/17 02:30:01.00)	31.7	30
(2021/06/17 02:45:01.00)	31.7	29.9
(2021/06/17 03:00:01.00)	32	30.1
(2021/06/17 03:15:01.00)	34.9	31
(2021/06/17 03:30:01.00)	32	30.4
(2021/06/17 03:45:01.00)	34.2	31.2
(2021/06/17 04:00:01.00)	40.6	31.4
(2021/06/17 04:15:01.00)	51.5	33.1
(2021/06/17 04:30:01.00)	46.4	31.9
(2021/06/17 04:45:01.00)	44.8	31.9
(2021/06/17 05:00:01.00)	43.9	31.2
(2021/06/17 05:15:02.00)	36.3	31.5
(2021/06/17 05:30:01.00)	46.6	32.3
(2021/06/17 05:45:01.00)	38.8	32.3
(2021/06/17 06:00:02.00)	42.3	33.3
(2021/06/17 06:15:01.00)	37.6	32.8
(2021/06/17 06:30:01.00)	44.2	34.5
(2021/06/17 06:45:02.00)	40.7	35.2
(2021/06/17 07:00:02.00)	48.6	35.7
(2021/06/17 07:15:02.00)	45.2	36.5
(2021/06/17 07:30:01.00)	41.4	36.2
(2021/06/17 07:45:02.00)	50.1	36
(2021/06/17 08:00:01.00)	57	43.9
(2021/06/17 08:15:01.00)	60.5	43.3
(2021/06/17 08:30:01.00)	61.2	40.9
(2021/06/17 08:45:01.00)	42.6	39.5
(2021/06/17 09:00:01.00)	45.9	38.9
(2021/06/17 09:15:02.00)	47.7	41.6
(2021/06/17 09:30:02.00)	47.2	42.5
(2021/06/17 09:45:01.00)	50.6	45.7
(2021/06/17 10:00:02.00)	62	50.4
(2021/06/17 10:15:01.00)	62	52.1
(2021/06/17 10:30:02.00)	58.6	48
(2021/06/17 10:45:02.00)	47.1	44.1
(2021/06/17 11:00:02.00)	53.6	43.7
(2021/06/17 11:15:02.00)	53.7	44.1
(2021/06/17 11:30:02.00)	55.2	45.8
(2021/06/17 11:45:02.00)	53.5	43.4
(2021/06/17 12:00:02.00)	44.9	40.6
(2021/06/17 12:15:02.00)	47.2	42.7
(2021/06/17 12:30:02.00)	61.9	52.2
(2021/06/17 12:45:02.00)	62.8	54.6
(2021/06/17 13:00:02.00)	62.2	48.4
(2021/06/17 13:15:02.00)	61.4	51
(2021/06/17 13:30:02.00)	60.1	48.1
(2021/06/17 13:45:02.00)	59.9	43.1
(2021/06/17 14:00:02.00)	44.6	39.3
(2021/06/17 14:15:01.00)	44.5	38.9
(2021/06/17 14:30:02.00)	45.4	39.9
(2021/06/17 14:45:02.00)	48.6	40.1

Date	LAeq	LA90
(2021/06/17 15:00:02.00)	44.6	38.8
(2021/06/17 15:15:02.00)	52.4	41.1
(2021/06/17 15:30:02.00)	52.9	41
(2021/06/17 15:45:02.00)	53.1	43.6
(2021/06/17 16:00:02.00)	56.3	43.5
(2021/06/17 16:15:02.00)	56.7	41.5
(2021/06/17 16:30:02.00)	55.9	41.9
(2021/06/17 16:45:02.00)	42.5	36.5
(2021/06/17 17:00:02.00)	44.1	36.7
(2021/06/17 17:15:02.00)	44.5	36.6

Figure 1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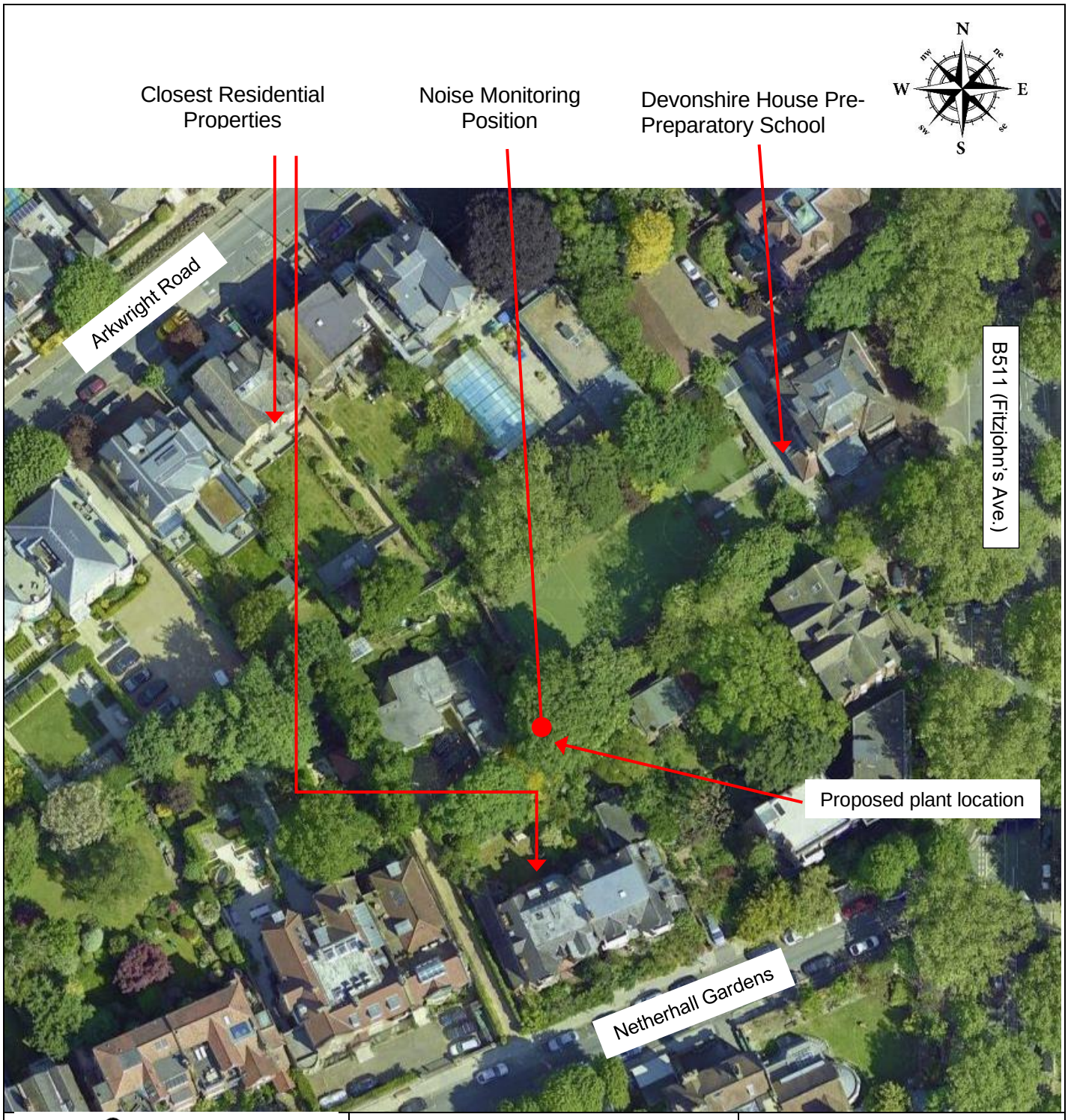
Sound Pressure Level dB(A)
65
60
55
50
45
40
35
30
25
LAeq
LA90

Figure 2



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