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REPORT No. 2301061-3_v1

Utopia Village
Chalcot Road
Primrose Hill
London
NW1 8LH

ENVIRONMENTAL NOISE SURVEY REPORT

PREPARED: 10/02/2023

Presented by:

Martyn Ayling BSc MIOA

CONTENTS

1.0 Introduction

1.1 Noico Ltd has been commissioned by Jackson Coles Construction Consultancy to conduct an environmental noise survey at the site of Utopia Village, Primrose Hill, London NW1 8LH.

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

1.3 The development site comprises a number of individual two and three storey small to medium sized business units located in the predominantly residential area of Primrose Hill. It is understood as part of the development plans, new items of mechanical plant (air cooled condensers and heat pumps) are to be installed externally. The exact positions have not yet been confirmed however it is likely to be a combination of external plant areas (ground and roof level) and internal plantrooms whereby any ventilation ducts will be ducted to atmosphere through the external walls of the plantrooms.

1.4 The site is surrounded by residential properties (primarily three and four storey Victorian terraced town houses) with the rear elevations facing onto the development site: The closest residential properties (and hence noise sensitive) being as follows:

No's 1 to 13 Chalcot Street to the south
No's 1 to 13 Egbert Street to the west
No's 79 to 109 Gloucester Road to the north
No's 1 to 14 Edis Street to the east

2.0 Instrumentation

2.1 Due to the number of potential plant locations, noise monitoring was carried out in three separate locations using three precision grade Norsonic 140 'Type 1' Integrating Sound Level Meters. They were equipped with a Norsonic outdoor microphone protection kit Nor-1212 and LEMO extension cable. The instruments were powered by an external battery and stored in a weatherproof case.

2.2 The instruments were calibrated prior and subsequent to use, with no calibration drift recorded.

2.3 Equipment serial numbers and calibration certification can be found in the table below.

Equipment Combination Code	Equipment Type	Serial number	Calibration Certificate	Calibration Date
140 Yellow (SD7)	Norsonic Type 140 Sound Level Meter	1406334	39865	Tested: 06/01/2022
	Norsonic Type 1225 Microphone	225498	39864	
	Norsonic Type 1209A Preamplifier	12537	39865	
140 Green (SD8)	Norsonic Type 140 Sound Level Meter	1404895	40602	Tested: 29/03/2022
	Norsonic Type 1225 Microphone	151323	40601	
	Norsonic Type 1209A Preamplifier	14369	40602	
140 Orange (SD9)	Norsonic Type 140 Sound Level Meter	1402996	STD179944	Tested: 25/07/2022
	GRAS Type 40AF Microphone	190436	STD179944	
	Norsonic Type 1209 Preamplifier	12265	STD179944	
Field Calibrator	Norsonic Type 1251 Calibrator	28311	28311	Tested: 25/07/2022

Table-1: Equipment list including calibration certification

3.0 Survey Details

3.1 Measurement Location 1: The '140 Yellow' environmental noise analyser microphone was located externally at 2nd floor level on the small section of flat roof facing onto the rear of No. 13 Egbert Street. The microphone was attached to a tripod, raised 1.5 metres above roof level, and positioned approximately 2.5 metres from the façade of the building. This location was chosen as it was considered to be representative of the background noise environment that exists at the nearest noise-affected properties in Egbert Street, and is shown in Figure 2.

3.2 Measurement Location 2: The '140 Green' microphone was located externally, attached to a 1st floor window frame within Unit 19, facing onto the rear of the No. 10 and No. 11 Edis Street. The microphone was attached to an extended tripod arm protruding approximately 1 metre out from the building façade. This location was chosen as it was considered to be representative of the background noise environment that exists at the nearest noise-effected properties in Edis Street, and is shown in Figure 2. We also consider this location to be representative of the background noise environment at the rear of the nearest noise affected properties in Gloucester Road where it was not possible to set up noise monitoring equipment due to lack of access.

3.1 Measurement Location 3: The '140 Orange' environmental noise analyser microphone was located externally at 1st floor level above the fire escape stairway at the rear of Unit 16, directly opposite No.3 Chalcot Road. The microphone was attached to a tripod arm and clamped to the top of the stairway support framework, positioned approximately 2 metres from the façade of the building. This location was chosen as it was considered to be representative of the background noise environment that exists at the rear of the nearest noise affected properties in Chalcot Road, and is shown in Figure 2.

3.3 Period: Noise monitoring was carried out continuously from approximately 12.15 hrs on Wednesday 25th January 2023 through to early hours of Tuesday 31st January 2023. Each instrument was set up to monitor noise levels continuously and store data in fifteen-minute intervals.

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

3.5 Site Noise Characteristics: Although the survey was un-manned it is expected that the ambient noise level was characterised by distant road traffic noise, in particular along Chalcot Road, and Gloucester Road. No other significant sources of noise were identified during the site visits, and 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 format in the attached appendix 2, showing the recorded values of L_{Aeq} and L_{A90}.

4.2 See Appendix 1 for a glossary of terms.

4.3 To determine a representative (typical) background noise level at the noise monitoring positions, the $L_{A90,15min}$ recorded values are rounded to the nearest decibel and plotted against percentage occurrence for daytime, evening, and night-time periods, shown in figure-1, figure-2, figure-3. This statistical analysis methodology is in line with BS 4142 *Methods for rating and assessing industrial and commercial sound*.

4.4 With reference to the measured data and background noise level statistical analysis in figures-1, 2 and 3 the environmental noise levels are summarised in table-2 below.

Monitoring location	Monitoring period	Equivalent noise level	Typical background noise level	Minimum background noise level
SD7	Daytime (07:00 - 19:00 hours)	50.2dB $L_{Aeq,12hr}$	41dB $L_{A90,15min}$	35dB $L_{A90,15min}$
	Evening (19:00 - 23:00 hours)	45.2dB $L_{Aeq,4hr}$	39dB $L_{A90,15min}$	32dB $L_{A90,15min}$
	Night-time (23:00 - 07:00 hours)	42.4dB $L_{Aeq,8hr}$	35dB $L_{A90,15min}$	30dB $L_{A90,15min}$
SD8	Daytime (07:00 - 19:00 hours)	53.3dB $L_{Aeq,12hr}$	40dB $L_{A90,15min}$	32dB $L_{A90,15min}$
	Evening (19:00 - 23:00 hours)	44.6dB $L_{Aeq,4hr}$	40dB $L_{A90,15min}$	32dB $L_{A90,15min}$
	Night-time (23:00 - 07:00 hours)	44.2dB $L_{Aeq,8hr}$	32dB $L_{A90,15min}$	29dB $L_{A90,15min}$
SD9	Daytime (07:00 - 19:00 hours)	48.5dB $L_{Aeq,12hr}$	44dB $L_{A90,15min}$	33dB $L_{A90,15min}$
	Evening (19:00 - 23:00 hours)	46.8dB $L_{Aeq,4hr}$	40dB $L_{A90,15min}$	36dB $L_{A90,15min}$
	Night-time (23:00 - 07:00 hours)	44.1dB $L_{Aeq,8hr}$	35dB $L_{A90,15min}$	30dB $L_{A90,15min}$

Table-2: Summary of noise monitoring data.

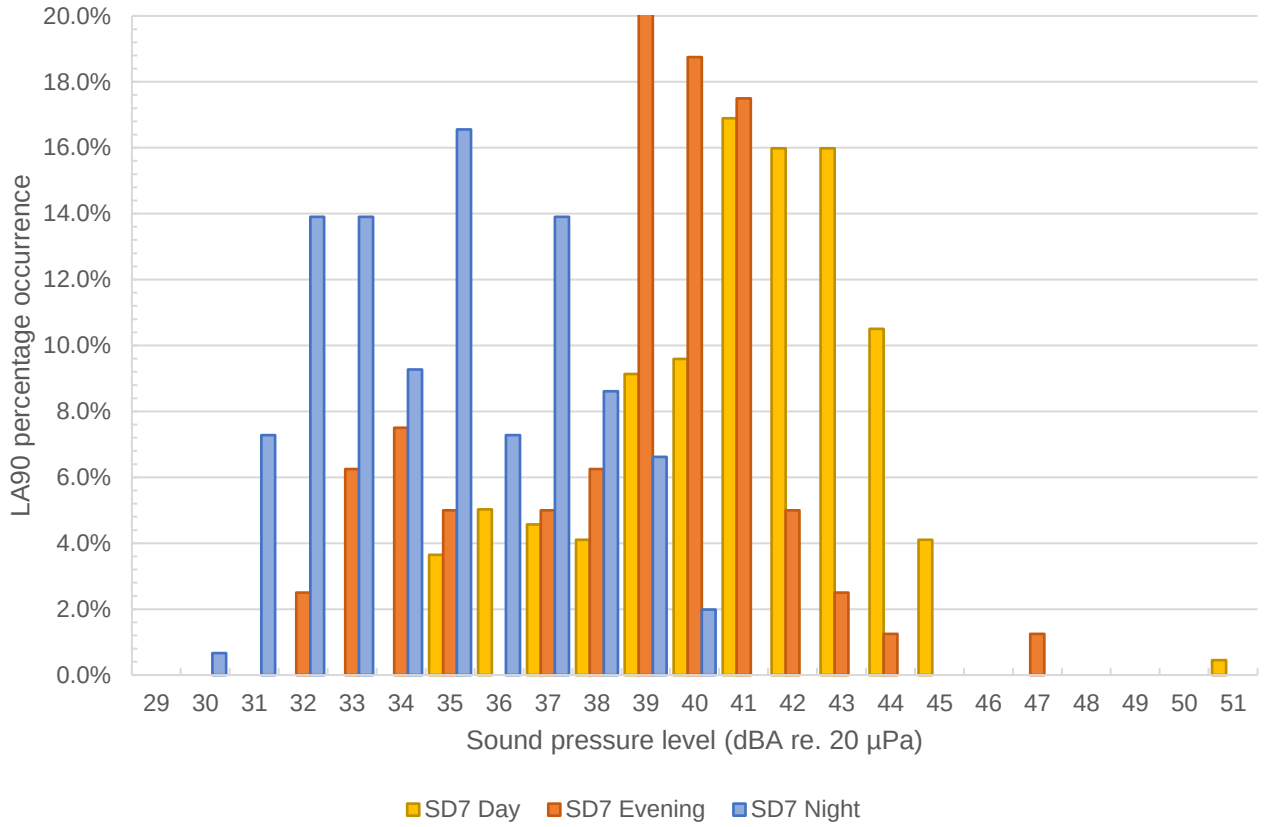


Figure-1: Statistical analysis of L_{A90} values to determine a representative background noise level at measurement position 1.

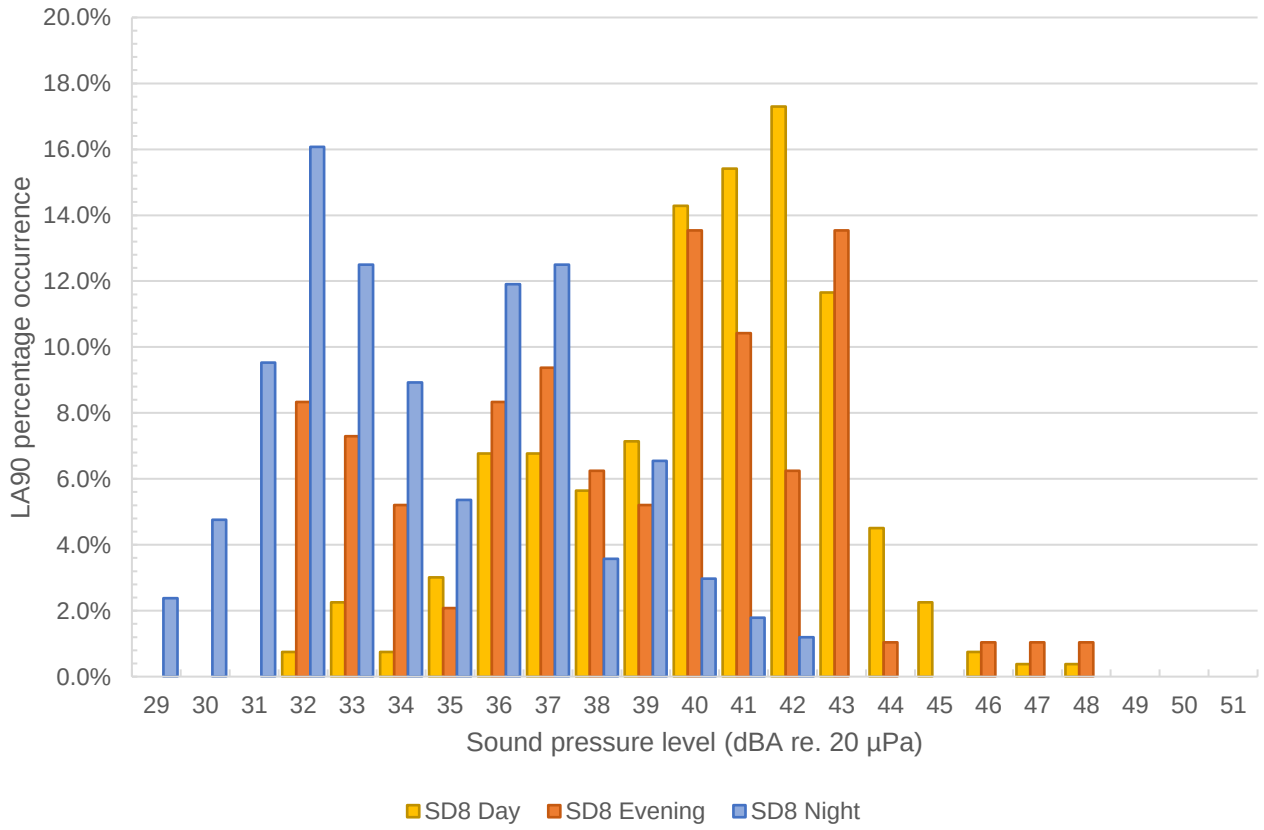


Figure-2: Statistical analysis of L_{A90} values to determine a representative background noise level at measurement position 2

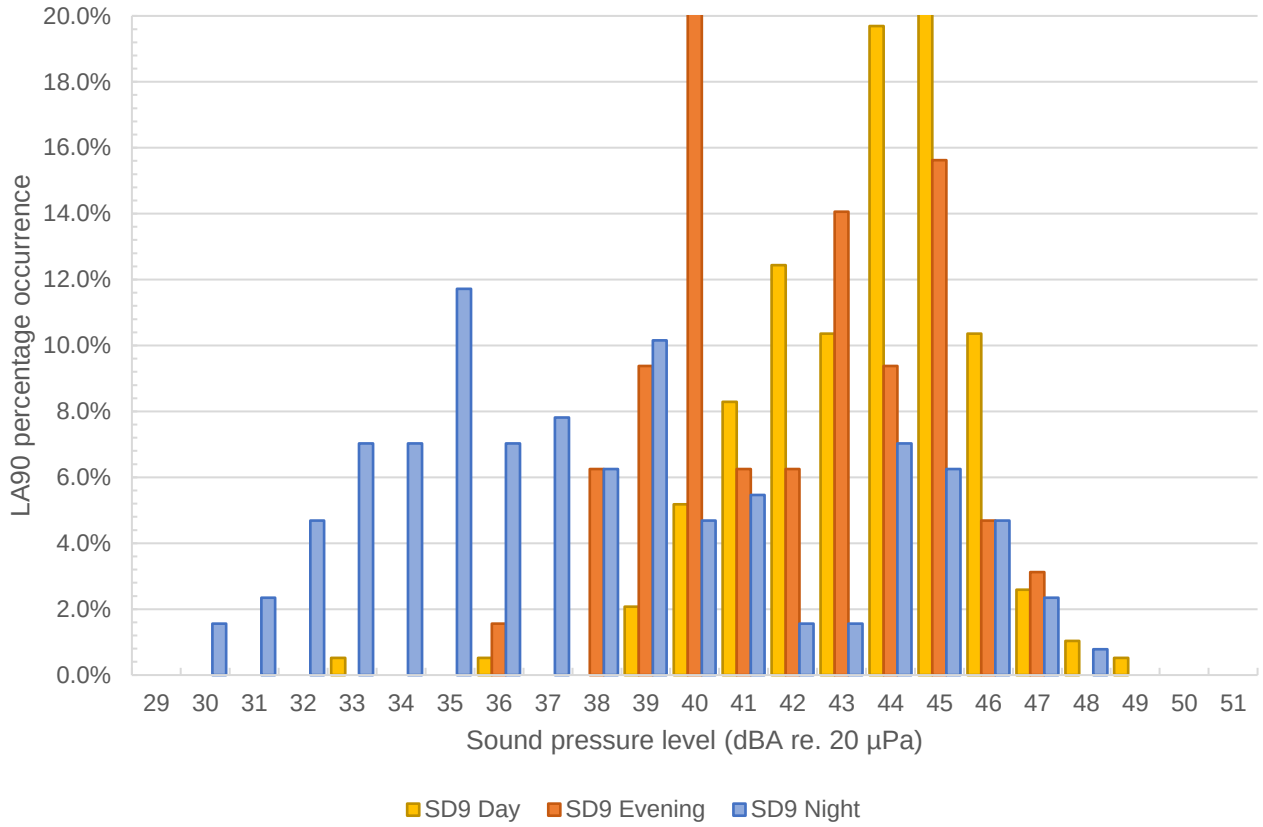


Figure-3: Statistical analysis of L_{A90} values to determine a representative background noise level at measurement position 3.

5.0 Planning Authority 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 In terms of an appropriate external design noise criteria, Camden London Borough Council advise the following within Appendix 3 of the local plan - *it is expected that BS4142:2014 'Methods for rating and assessing commercial and industrial noise' will be used. For such cases a 'rating level' of 10dB below the background noise level (15dB if tonal elements are present) should be considered as the design criteria.*

5.3 To conform to the above criteria, and in accordance with the typical background noise levels measured during the survey (summarised in 4.4 above), noise from the plant installations should not exceed the following values.

Location 1 – Properties in Egbert Street

Operation period	Sound pressure level
Daytime (07:00 to 19:00 hours)	31dB $L_{Aeq,15min}$
Evening (19:00 to 23:00 hours)	29dB $L_{Aeq,15min}$
Night time (23:00 to 07:00 hours)	25dB $L_{Aeq,15min}$

Table-3: Design noise level criteria specification

Location 2 – Properties in Edis Street and Gloucester Road

Operation period	Sound pressure level
Daytime (07:00 to 19:00 hours)	30dB $L_{Aeq,15min}$
Evening (19:00 to 23:00 hours)	30dB $L_{Aeq,15min}$
Night time (23:00 to 07:00 hours)	22dB $L_{Aeq,15min}$

Table-3: Design noise level criteria specification

Location 3 – Properties in Chalcot Road

Operation period	Sound pressure level
Daytime (07:00 to 19:00 hours)	34dB $L_{Aeq,15min}$
Evening (19:00 to 23:00 hours)	30dB $L_{Aeq,15min}$
Night time (23:00 to 07:00 hours)	25dB $L_{Aeq,15min}$

Table-3: Design noise level criteria specification

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

6.0 Conclusions

8.1 A background noise level survey has been carried out at Utopia Village, Chalcot Road, London NW1 8LH in accordance with BS 4142 methodology.

8.2 Based upon the survey results, with knowledge of relevant environmental design standards and the planning requirements of Camden London Borough Council, criteria applicable to noise from the mechanical services plant have been established.

8.3 When mechanical plant details have been confirmed together with confirmation of the proposed plant locations, a noise impact assessment, in line with BS 4142, will be carried out to determine whether the design noise criteria will be met, or whether noise control measures will be required. If it is deemed that noise control measures will be required, recommendations will be given for suitable noise mitigation measures necessary to achieve the design noise criteria, and meet the planning noise requirements of the local planning authority.

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 2

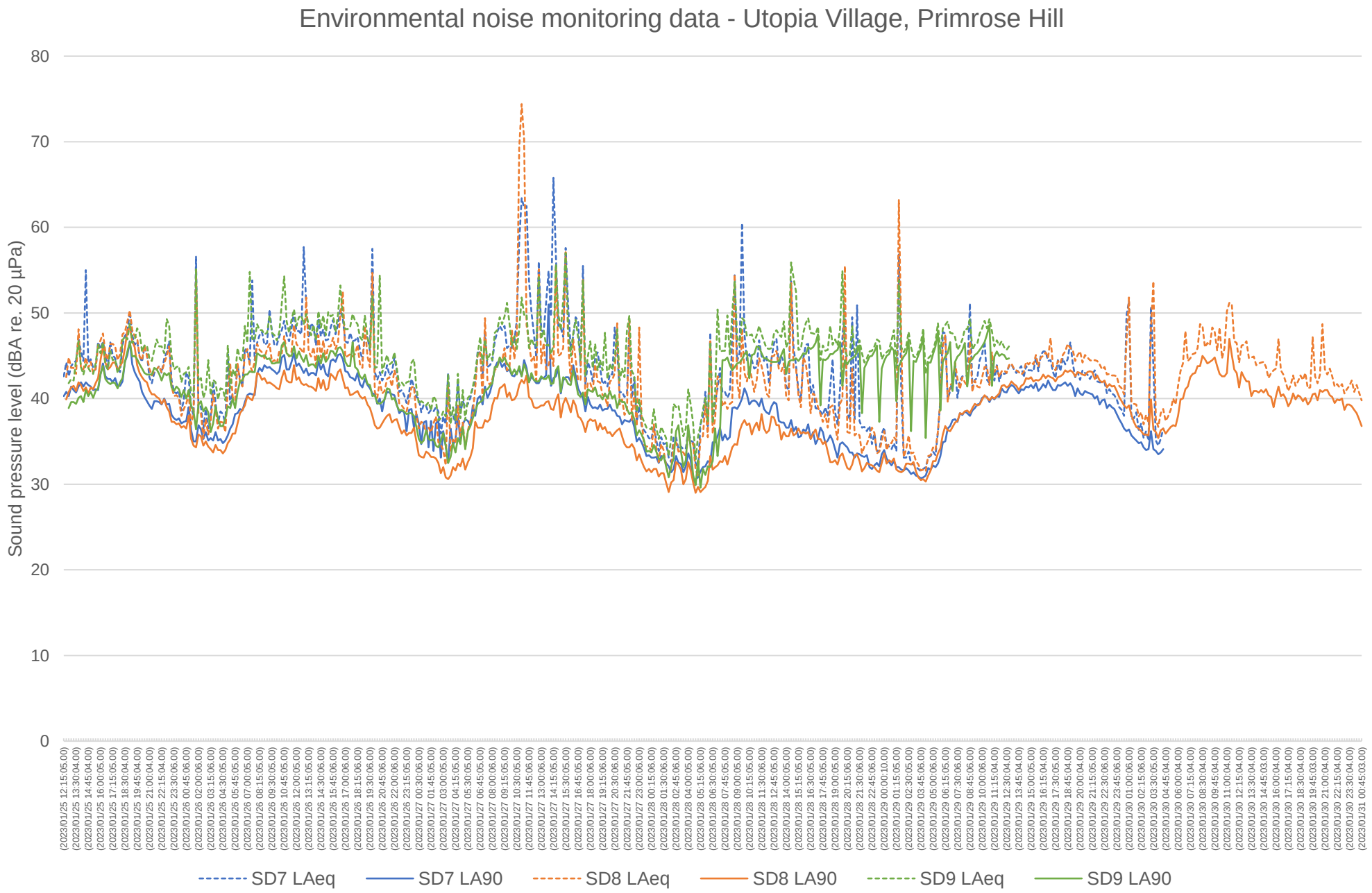
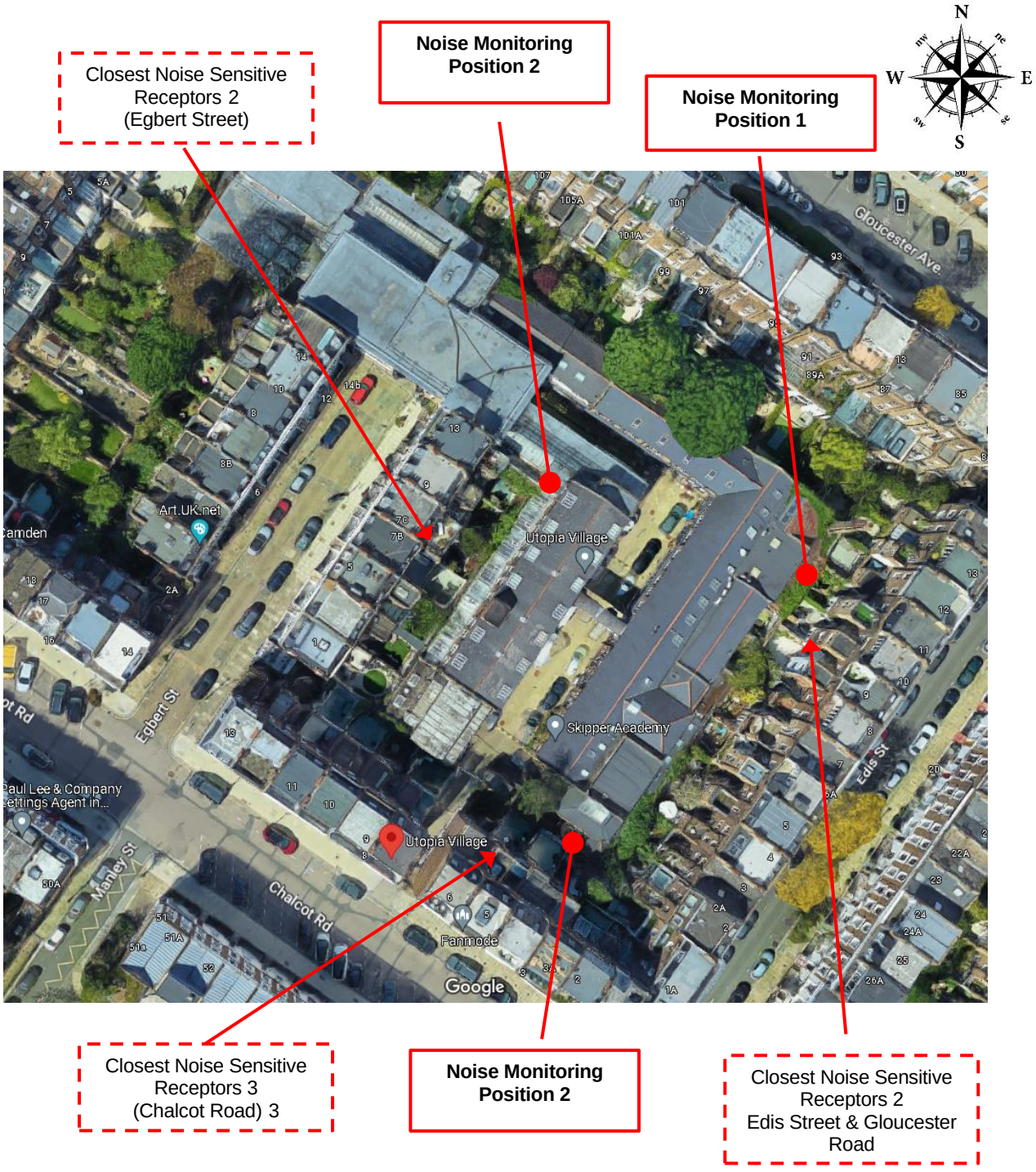

Environmental noise monitoring data - Utopia Village, Primrose Hill
Sound pressure level (dBA re. 20 µPa)
80
70
60
50
40
30
20
10
0
SD7 LAeq
SD7 LA90
SD8 LAeq
SD8 LA90
SD9 LAeq
SD9 LA90

Figure A1



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