ACOUSTICS CENTRAL

Templewood Avenue

Plant Noise Assessment

20230609-0 R1

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Templewood Avenue

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Document History and Version Control

Version	Purpose/Change	Author	Date
V1.0	First Issue	**Lee Montague** BEng(Hons)	27th June 2023
V1.1	Minor revision	**Lee Montague** BEng(Hons)	29th June 2023

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Executive Summary

Planning permission is sought for a new residential house at Templewood Avenue. As part of the development a new Air Source Heat Pump (ASHP) is proposed to be installed to provide central heating and hot water to the property.

The local planning authority, The London Borough of Camden (LB Camden), have policy placing limits on the level of noise that can be generated by any mechanical services plant installed as part of new development.

Acoustics Central has been instructed to undertake a noise assessment of the proposed plant item to determine whether they would be expected to comply with any relevant planning requirements.

An assessment of atmospheric noise emissions has been undertaken of the single new external ASHP unit, accounting for the requirements of LB Camden planning policy and the existing background noise levels which were measured as part of a noise survey carried out at the site.

The assessment has found that in the proposed location, including the use of an acoustic enclosure, the noise emissions from the proposed plant is calculated to fall within the most stringent noise limits. The plant proposals therefore satisfy Camden's Planning policy.

ACOUSTICS CENTRAL

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Attachments

1 Introduction

1.1 Planning permission is sought for a new residential house at Templewood Avenue. As part of the development a new energy efficient Air Source Heat Pump (ASHP) is proposed to be installed to provide central heating and hot water to the property (rather than a less sustainable gas powered boiler).

1.2 The local planning authority, The London Borough of Camden (LB Camden), have policy placing limits on the level of noise that can be generated by any mechanical services plant installed as part of new development. The limits are relative to the existing background noise levels at sensitivities within the vicinity of the proposed plant location.

1.3 Acoustics Central has been instructed to undertake a noise assessment of the proposed plant to determine whether they would be expected to comply with any relevant planning requirements.

1.4 This report provides details of a noise survey undertaken on site to determine the current noise climate and the corresponding plant noise emission limits at the nearest noise sensitive receptors. Calculations of the noise emissions from the proposed plant to the nearest noise sensitive receptors are set out.

1.5 The report is necessarily technical in nature, however every effort has been made to make it as clear as possible. In this regard, the Glossary of Acoustics Terms attached as Appendix A gives further explanation on relevant acoustics terminology used within the report.

2 Site Layout

2.1 General

2.1.1 The site is located in the existing garden space of 1 Templewood Avenue, London, NW3 7UY towards the east side of the plot, adjacent to flats at 3 Templewood Avenue. The site is illustrated in the figure below.

2.1.2 The proposed building is to be partially sunk into the ground, as the ground level rises significantly from the south end of the site at the road.

2.1.3 The ASHP is proposed to be installed at ground level towards the front of the proposed new property, slightly south of the southern elevation of the adjacent building at 3 Templewood Avenue. The unit is to be approximately 12m away from those existing flats.

F1 Figure indicating the location of the site

2.2 Site Context

2.2.1 Templewood Avenue is located to the south of the site. This road is regularly used by vehicles, but not heavily.

2.2.2 To the east is 3 Templewood Avenue which comprises a number of flats.

2.2.3 To the west is 1 Templewood Avenue, with the reduced sized garden that will be directly adjacent to the proposed site.

2.2.4 To the north of the site is the gardens of 46 Redington Road.

2.3 Noise Climate

2.3.1 The noise climate at the site is primarily controlled by traffic on the surrounding roads. During the setup and collection of the equipment there was no noticeable plant equipment operating.

3 Design Requirements

3.1 The site is located within the London Borough of Camden. The current version of the Local Plan was adopted in 2017. Policy A4 relates specifically to noise:

"We will only grant permission for noise generating development, including any plant and machinery, if it can be operated without causing harm to amenity.

Planning conditions will be imposed to require that plant and equipment which may be a source of noise is kept working efficiently and within the required noise limits and time restrictions.

Conditions may also be imposed to ensure that attenuation measures are kept in place and are effective throughout the life of the development."

3.2 Appendix 3 goes on to provide the following guidance on noise limits for industrial and commercial noise sources:

"A relevant standard or guidance document should be referenced when determining values for LOAEL and SOAEL for non-anonymous noise. Where appropriate and within the scope of the document it is expected that British Standard 4142:2014 'Methods for rating and assessing industrial and commercial sound' (BS 4142) will be used. For such cases a 'Rating Level' of 10 dB below background (15 dB if tonal components are present) should be considered as the design criterion)."

3.3 We note that although the Camden guidance suggests 10dBA below background should be considered the criterion, BS4142[1] does contain other advice for instances when background noise levels or the assessed rating levels are low.

3.4 The primary methodology of BS 4142 compares the rating level of the noise of the plant to the existing background noise level (during the relevant period of operation).

3.5 The greater the excess of rating level over background noise level, the greater the likelihood of an adverse noise impact. On this comparison of rating level to background noise, BS 4142:2014 notes:

a) Typically, the greater this difference, the greater the magnitude of the impact.

b) A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.

c) A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.

d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

3.6 We would therefore suggest that point c) of the above guidance may consider a level 5dB above background as a LOAEL; although we acknowledge some local authorities, including Camden suggest levels below background. However, the 'relative' design standard against the prevailing background is not always the most appropriate for certain contexts. Some contexts include if the receptor is new or existing and also of importance is how low the existing background noise is in absolute terms.

[1] BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'

3.7 With regard to low noise levels, BS 4142 notes in section 11 (1):

Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.

3.8 The plant will operate at night and based on the location of the site, the background noise level may be low (as will be discussed in the survey below). Given this context, we would suggest other guidance and standards are considered and absolute noise limits are more relevant for this particular scheme.

3.9 When assessing whether the existing sound levels are low, it is relevant to refer to other standards which provide absolute thresholds for suitable noise levels inside and outside of buildings, such as BS 8233:2014[2]. Also of relevance is the former 1997 edition of BS 4142.

3.10 BS 4142:1997 stated background sound levels below 30dBA (L_{A90}) and rating levels below 35dB L_{Ar} are considered *"very low"*. A rating level of 35dB L_{Ar} externally outside a receptor would be equivalent to approximately 20-25dB L_{Ar} internally via a partially opened window. When windows are closed (for example when it is cold and ASHPs are more likely to be working at duty), internal noise levels would be lower still.

3.11 BS 8233 sets noise levels internally for bedroom at night to 30dBA (L_{eq}). Although this is based upon more 'anonymous' environmental noise sources, one can apply corrections for the character of the noise, so for example comparing a rating noise level (L_{Ar}) to this standard (or alternatively one can lower the noise standard to account for the character corrections that would otherwise have given a rating level; effectively the same outcome). This is in keeping with section 6.5.2 of BS 8233 which states "*Where industrial noise affects residential or mixed residential areas, the methods for rating the noise in BS 4142 should be applied*". This guidance therefore adds some context as to the appropriateness of setting an external noise limit of 35dB L_{Ar}; this approach would suggest that potentially higher noise levels could also be appropriate.

3.12 Further evidence to support this approach is found in BS 4142:2014 in two separate aspects. Firstly, it cites BS 8233:2014 when considering the noise effects, including noting what the internal noise level would be (see BS 4142 Annex A worked examples). Additionally, BS 4142 states (in section 11) that in terms of a receptors sensitivity (and if the receptors include design measures that secure good internal acoustic conditions) *"façade insulation treatment"* is also a relevant consideration which inherently requires the internal noise levels to be considered.

3.13 On the above basis, where the existing background noise levels or assessed plant noise rating levels are considered to be low, we suggest a suitable external noise limit in absolute terms would be 35dB L_{Ar}. This is especially pertinent in the context of new receptors, but also applies to existing receptors. We would suggest that this level is considered a LOAEL, even if the councils preferred level of 10dBA below background is not met.

3.14 In order to address the Council's suggested requirement and to clarify if the noise climate is low or not, the existing background noise levels representative of sensitive facades must first be quantified. The environmental noise survey described in Section 4 sets out the exercise to measure these. This allows noise limits to be established, be them 10dBA below background or an absolute limit of 35dB L_{Ar}. These noise limits are detailed in Section 4.8.

[2] BS 8233:2014: Guidance on sound insulation and noise reduction for buildings

3.15 Following this, calculations of the noise from the proposed plant items need to be undertaken for comparison with the limits. The atmospheric-side plant noise assessment described in Section 5 sets out the details of the exercise undertaken to calculate these.

4 Noise Survey

4.1 General

4.1.1 In order to quantify the noise levels at and around the site, an environmental noise survey was carried out, commencing at 11h30 on Thursday 22nd June 2023 and concluding at 09h00 on Monday 26th June 2023.

4.2 Guidance and Standards

4.2.1 The survey instrumentation, methodology and reporting of results has been carried out following guidance contained within British Standard 7445-1:2003 - *'Description and measurement of environmental noise - Part 1: Guide to quantities and procedures'*,

4.3 Measurement Positions

4.3.1 Noise measurements were made for a period of 93 hours at a single position (MP1) located at the southern point of the existing garage on site, in line with the front façade of 3 Templewood Avenue. This location is illustrated on the following figure and described below):

F2 Figure indicating the environmental noise survey measurement position

MP1 Front of existing garage, on a pole 3m above local ground level, in clear view of the road, in line with and at approximate height of ground floor windows at the front façade of 3 Templewood Avenue.

4.3.2 The location was suitably representative of the receptors at 3 Templewood Avenue and more generally of the receptors in the surrounding area.

4.3.3 As the microphone was above the roof level of the existing garage and in view of the road, the measurement location can be considered free field.

4.4 Noise Monitoring Equipment

4.4.1 All noise measurements were made with the equipment detailed in the following table.

Item	Manufacturer	Type
Sound Level Analyser	NTi	XL2-TA
Acoustic Calibrator	NTi	CAL200

T1 Equipment used during unattended external noise measurements

4.4.2 The sound level analyser presented in the above table conforms to the Type 1 specification as given in BS EN 61672-1:2003 - *'Electroacoustics - Sound level meters - Part 1: Specifications'*. The calibrator presented in the above table conforms to the Class 1 specification as specified in IEC 60942:2003 – *'Electroacoustics - Sound calibrators'*.

Traceable Calibration

4.4.3 The measurement instrumentation, including sound level analyser, preamplifier and microphone as well as the acoustic calibrator has undergone traceable calibration by either a competent laboratory or the equipment manufacturer within the last two years.

4.4.4 The calibration certificates for the above equipment can be provided on request.

4.4.5 A field calibration check was undertaken on the noise measurement equipment before and after the survey to ensure a consistent and acceptable level of accuracy is maintained. No significant drift (of more than 0.1dB) was noted to have occurred.

4.5 Data Recorded

4.5.1 Noise data was recorded over consecutive 15-minute periods in all relevant indices, including L_{Aeq}, L_{A90}, and $L_{AMax,F}$. See attached Appendix A for an explanation of noise units used.

4.5.2 Octave band data for each of the above indices was also recorded at all positions, the filters for which met the requirements of BS EN 61260:1996, Class 1.

4.5.3 Audio recordings were also made throughout the duration of the survey for the purposes of identification of any atypical noise conditions occurring during the measurements.

4.6 Meteorological Conditions

4.6.1 During the survey temperatures were generally hot, with daytime temperate reaching up to 30°c, reducing to 15°c overnight.

4.6.2 Publicly available weather data suggest wind speeds were generally low, typically < 5m/s and that there was no rain.

4.7 Results

4.7.1 The attached time-history figures TH1.1 to TH1.5 present the noise levels measured at MP1. A summary of relevant results is presented in the following table.

Period / Index	Representative $L_{A90,15min}$
Daytime (07h00 – 23h00	38
Night-time (23h00 – 07h00)	29

T2 Summary of Noise Survey Results

4.7.2 The representative values have been derived from statistical analysis in line with BS4142 guidance.

4.7.3 It can be seen that the background noise levels at night can be considered "very low".

4.8 Limits

4.8.1 As set out in Section 3, LB Camden suggests setting noise limits to a level 10 dB below the existing background noise levels; but when the noise climate is low, BS4142 suggests absolute limits may be more appropriate (and 35dB L_{Ar} has been shown to be suitable in such instances).

4.8.2 As the measured noise levels are low, we suggest the absolute noise limit of 35dB L_{Ar} apply to the scheme at night and that would be a suitable level considered the LOAEL.

4.8.3 For completeness and comparison, using the measured noise levels along with the LB Camden suggested criteria of 10dBA below background, the following plant noise emission limits would apply to apply at the nearest noise sensitive premises:

Location	Plant Noise Emission Limits, L_{Ar} dB	
	Daytime *07h00-23h00*	Night-time *23h00-07h00*
Surrounding Residences	28	19

T3 Plant Noise Emission Limits

4.8.4 The above limits (absolute or below background) apply to the cumulative noise emissions from all new plant items under normal operating conditions, and are to apply at 1 m from the outside of the windows of the nearest noise sensitive receptors.

4.8.5 The noise limits are to apply at 1m from the outside of nearby noise sensitive windows. Any plant with a tonal or other component out of character with the existing noise environment would be subject to a further penalty in line with the guidance set out above.

5 Plant Noise Assessment

5.1 General

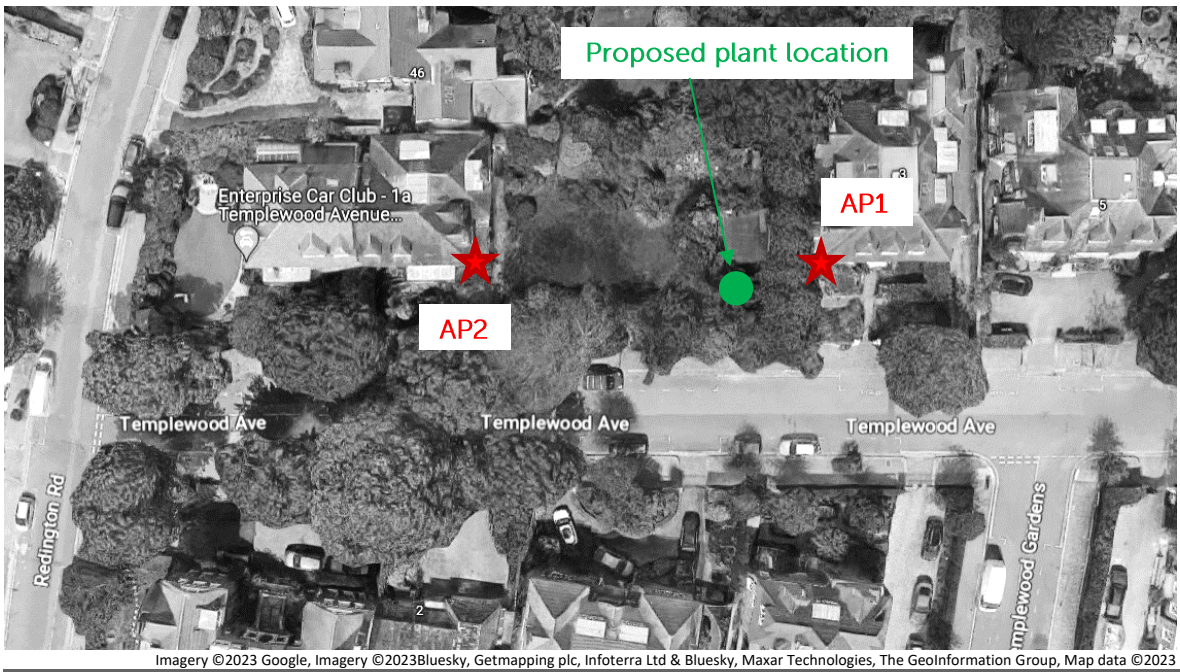
5.1.1 To address the requirements of LB Camden planning policy, an atmospheric plant noise assessment has been carried out.

5.1.2 In essence, the assessment starts with plant noise levels, takes account of any system or propagation losses, and compares the resultant levels with the plant noise limits established in the previous section.

5.2 Assessment Locations

5.2.1 The closest and/or most exposed noise sensitive properties are the flats at 3 Templewood Avenue to the east of the proposed plant. Residences at 1 Templewood Avenue are the next closest. Residences at 46 Redington Road and those on the opposite (south) side of Templewood Avenue are either further away or less exposed as those to the east and west; therefore the noise limits will be met at these locations by default when they are already met at the closest / most exposed receptors.

5.2.2 The above noted locations are represented as two assessment positions as illustrated in the following figure and described below:



F3 Figure indicating the noise assessment receiver positions

- AP1: 3 Templewood Avenue; 12m from the ASHP
- AP2: 1 Templewood Avenue; 20m from the ASHP

5.3 Proposed Scheme

5.3.1 The proposed plant is to be installed is a single energy efficient Air Source Heat Pump (ASHP) which is to provide central heating and hot water to the property instead of a less sustainable gas boiler. The unit proposed is as follows:

- 1 no. Vaillant aroTHERM plus (7kw)

5.3.2 The manufacturer's datasheet for the unit indicates a sound power level of 56dB(A) when operating at full duty. Vaillant have also provided a sound power noise spectrum for the unit, as follows:

Unit	SWL (dB) @ Octave Band Center Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Vaillant aroTHERM plus (7kw)	-	44	47	50	50	48	50	46

T4 Sound Power Level (SWL) for plant equipment

5.3.3 The manufacturer has not provided a 63Hz value, so for the purpose of calculation we have assumed it is the same as the 125Hz value.

5.3.4 The manufacturer also provided 1/3 octave band data for a typical duty point which confirms that the unit is not tonal as per BS4142 objective methods of tonality assessment.

5.3.5 Therefore, the levels noted in the assessment are considered rating levels (L_{Ar}), but penalties for character are not applicable in this case.

5.3.6 Although it may not necessarily be required to meet the planning noise limits to the neighbouring residences, to reduce noise to the proposed property itself, the unit will be located inside an acoustic enclosure.

5.3.7 The performance specified below is the minimum that would be necessary to meet the most stringent noise limit of 10dBA below background at the neighbouring residence; however, no enclosure would be necessary to meet a limit of 35dB L_{Ar}.

5.3.8 The below performance can be achieved with a basic 150mm deep acoustic louvre enclosure or otherwise proprietary enclosures by companies such as *Environ Technologies Ltd* also provide the required performance.

Item	Insertion Loss (dB) @ Octave Band Center Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Acoustic Enclosure	2	2	3	6	7	9	9	9

T5 Acoustic Enclosure Minimum Performance Requirements

5.4 Hours of Operation

5.4.1 The plant is to be available for use 24 hours a day so the night time noise limits form the target for the assessment.

5.5 Assessment Results

5.5.1 By utilising the methodology set out above we calculate noise levels at the aforementioned assessment positions as presented in the following table. The noise limits are also reproduced for ease of comparison.

Location	Calculated Noise Level, dB L_{Ar}	Night Time Noise Limit, dB L_{Ar}
AP1: 3 Templewood Avenue	19	35/19*
AP2: 1 Templewood Avenue	14	35/19*

T6 Noise assessment results *absolute limit / 10dBA below background

5.5.2 As the above table shows, the noise emissions from the proposed plant are calculated to fall within the relevant noise limits with the noise mitigation measures proposed. The noise can therefore be considered not to exceed the LOAEL[3] in planning terminology and meets the specific requirements of LB Camden planning policy.

5.5.3 Calculations undertaken as part of this assessment are detailed in attached Calculation Sheets CS1 to CS4.

5.5.4 Given the size, duty and location of the unit, structure borne noise is not expected to be an issue to any surrounding residents.

5.5.5 For reference, we note that if the acoustic enclosure was not used, then the noise level at AP1 would be 28dB L_{Ar}. This would therefore still meet the absolute noise limit of 35dB L_{Ar} and be considered a LOAEL.

[3] Lowest Observable Adverse Effect Level

6 Conclusions

6.1 Planning permission is sought for a new residential dwelling at Templewood Avenue. As part of the development an Air Source Heat Pump (ASHP) is proposed to be installed to provide central heating and hot water to the new property.

6.2 An assessment of atmospheric noise emissions from the unit has been undertaken, accounting for the requirements of The London Borough of Camden planning policy and the existing background noise levels which were measured as part of a noise survey carried out at the site.

6.3 The assessment has found that in the proposed location the noise emissions from the proposed plant, including the effects of an acoustic enclosure, are calculated to fall within the relevant noise limits. Therefore, LB Camden's planning policy is satisfied.

Figure 20230609-0 R1 TH1.1

Noise Levels Recorded at Position MP1, 22 June 2023

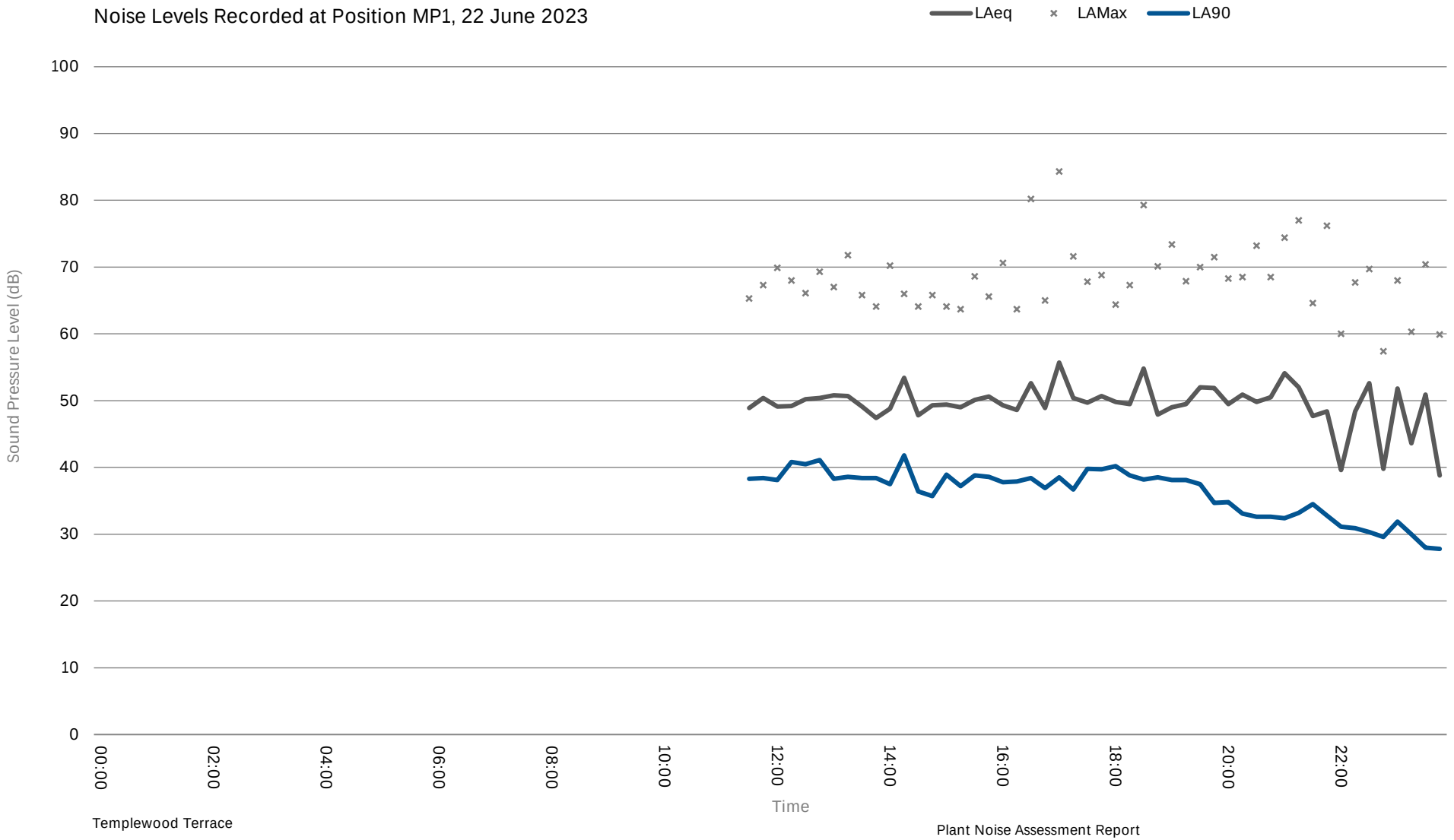


Figure 20230609-0 R1 TH1.2

Noise Levels Recorded at Position MP1, 23 June 2023

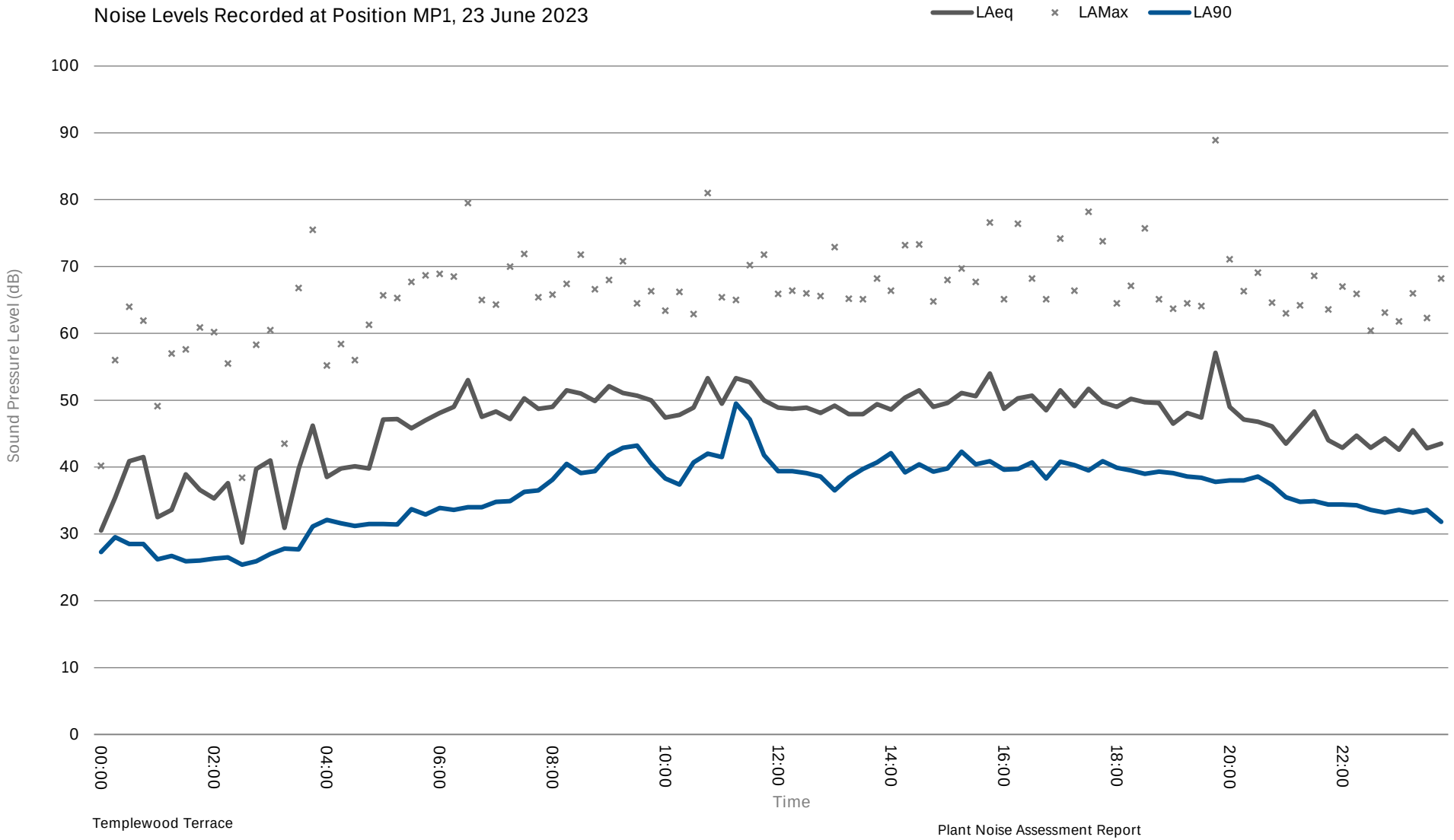


Figure 20230609-0 R1 TH1.3

Noise Levels Recorded at Position MP1, 24 June 2023

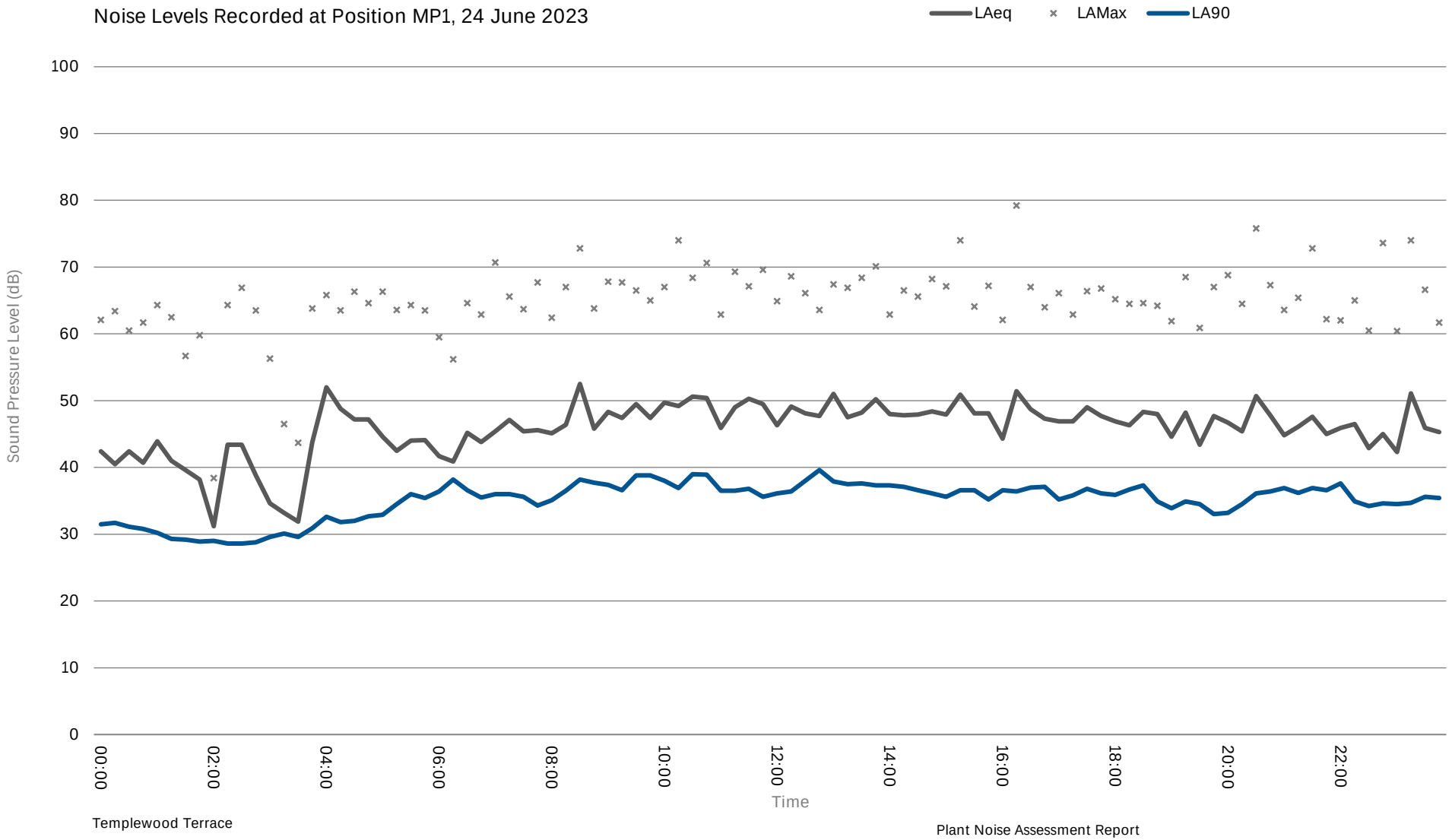


Figure 20230609-0 R1 TH1.4

Noise Levels Recorded at Position MP1, 25 June 2023

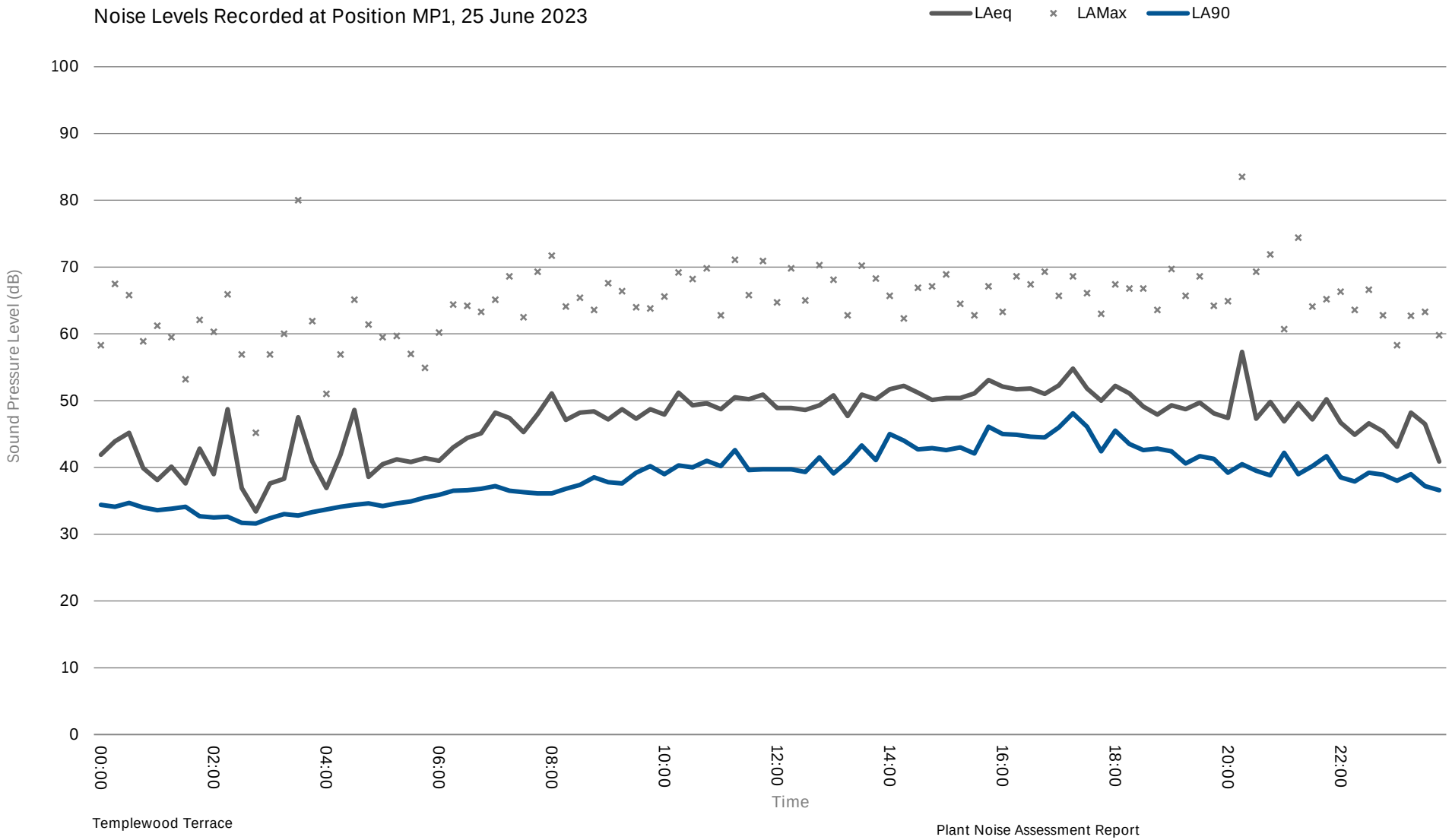
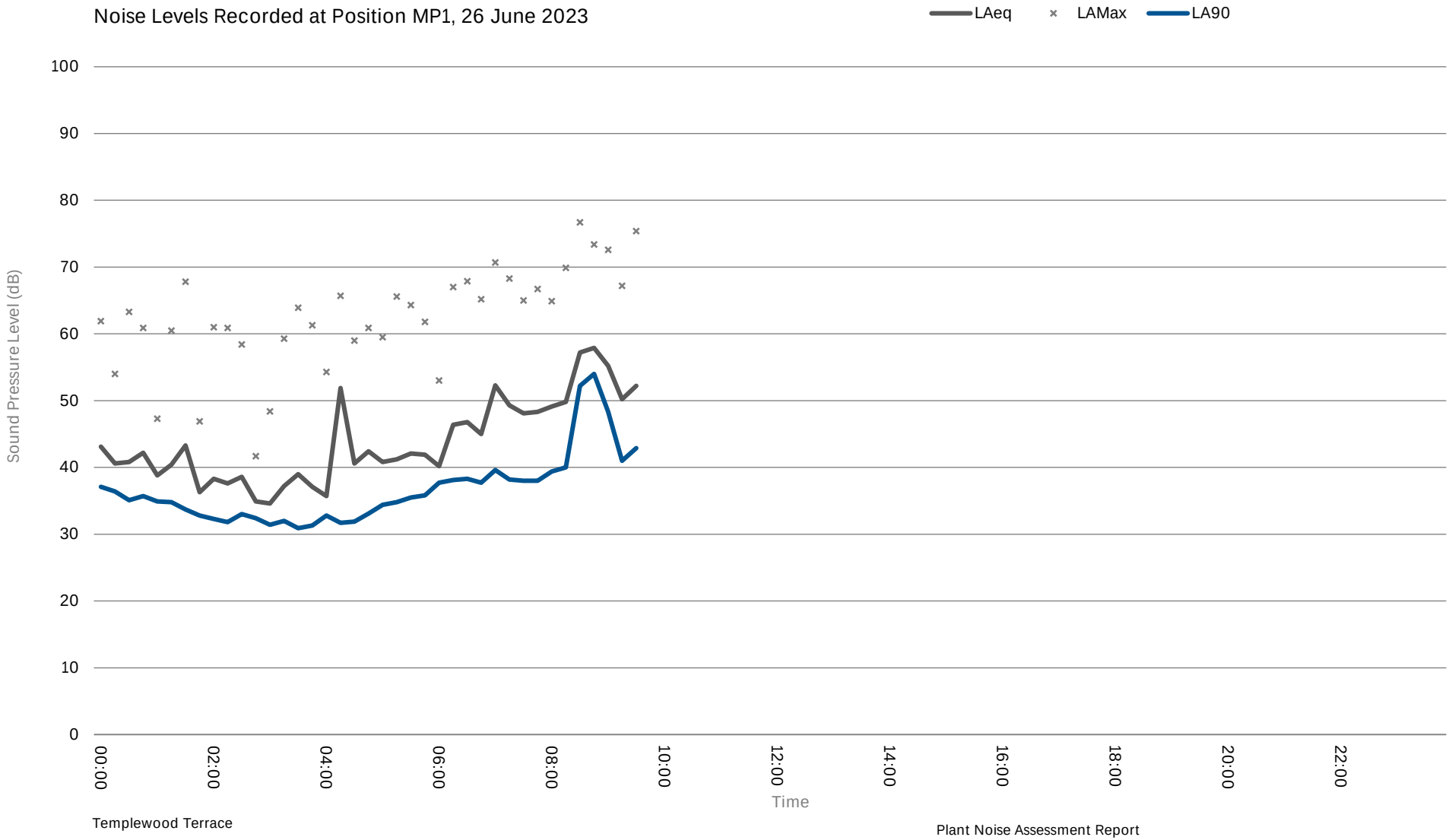


Figure 20230609-0 R1 TH1.5

Noise Levels Recorded at Position MP1, 26 June 2023



Calculation Sheet

ASHP to AP1

		Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
Noise Source									
Noise Source - ASHP									
Sound Power Levels		43.8	43.8	47.1	50.3	50.1	47.9	50.4	46.2
Silencer									
Silencer - Acoustic Enclosure									
		-2.0	*-2.0*	*-3.0*	*-6.0*	*-7.0*	*-9.0*	*-9.0*	*-9.0*
Point Source Radiation Loss									
Radiation - Hemispherical									
		-8.0	*-8.0*	*-8.0*	*-8.0*	*-8.0*	*-8.0*	*-8.0*	*-8.0*
Point Source Distance Loss									
Start Distance (m)	1.0								
End Distance (m)	12.0								
		-21.6	*-21.6*	*-21.6*	*-21.6*	*-21.6*	*-21.6*	*-21.6*	*-21.6*
External Receiver									
External Receiver - AP1									
Sound Pressure, Lp		12.2	12.2	14.5	14.7	13.5	9.3	11.8	7.6

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Calculation Sheet

ASHP to AP2

		Octave Band Centre Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
Noise Source									
Noise Source - ASHP									
Sound Power Levels		43.8	43.8	47.1	50.3	50.1	47.9	50.4	46.2
Silencer									
Silencer - Acoustic Enclosure									
		-2.0	*-2.0*	*-3.0*	*-6.0*	*-7.0*	*-9.0*	*-9.0*	*-9.0*
Point Source Radiation Loss									
Radiation - Hemispherical									
		-8.0	*-8.0*	*-8.0*	*-8.0*	*-8.0*	*-8.0*	*-8.0*	*-8.0*
Point Source Distance Loss									
Start Distance (m)	1.0								
End Distance (m)	20.0								
		-26.0	*-26.0*	*-26.0*	*-26.0*	*-26.0*	*-26.0*	*-26.0*	*-26.0*
External Receiver									
External Receiver - AP2									
Sound Pressure, Lp		7.8	7.8	10.1	10.3	9.1	4.9	7.4	3.2

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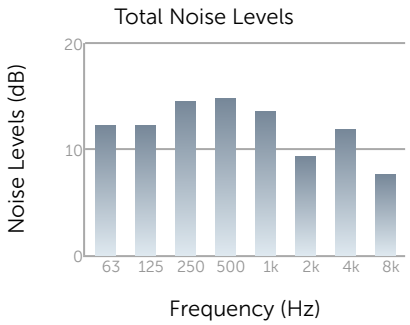
Project Name	Templewood Avenue
Project Reference	20230609-0
Reference	AP1
Description	3 Templewood Avenue
Noise Limit (dBA)	35
Calculated Level (dBA)	19



Noise Sources

Reference	Quantity	Noise Levels (dB)							
		63	125	250	500	1k	2k	4k	8k
ASHP	1	12	12	15	15	14	9	12	8

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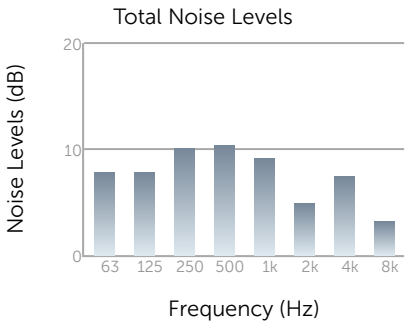
Project Name	Templewood Avenue
Project Reference	20230609-0
Reference	AP2
Description	1 Templewood Avenue
Noise Limit (dBA)	35
Calculated Level (dBA)	14



Noise Sources

Reference	Quantity	Noise Levels (dB)							
		63	125	250	500	1k	2k	4k	8k
ASHP	1	8	8	10	10	9	5	7	3

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Appendix A

Glossary of Acoustics Terms – Noise Levels

Single Figures and Spectra

Generally speaking, the human ear is capable of hearing noise within the frequency range 20Hz to 20kHz. To make handling of data more meaningful and manageable, the range is often divided into 'bands', each of which covers a specific part.

For most acoustics applications, either octave or third-octave bands are used. Each band has a specific centre frequency which is used to identify it. When reported, the band centre frequency is given, along with the associated noise level, e.g. 63dB L_{eq} at 500Hz.

Noise levels can also be reported as single figure values where all energy contained within the measured frequency range is summed to provide a single figure. However, as the human ear does not hear noise at different frequencies with equal loudness, a weighting curve is often applied to levels before summing to account for this fact.

The most common curve is the A-weighting curve, and its use is denoted by including the letter 'A' with either the index e.g. 63dB L_{Aeq}, or with the decibel suffix (if the index is described elsewhere), e.g. 63dBA. 'B' and 'C' weighting curves may also be applied, depending on the application. A 'Z' is used to indicate a single figure where no weighting has been applied, e.g. 63dB L_{Zeq}.

Noise Level Indices

Noise level measurements can be made and reported in a variety of indices. The index is reported using the letter *L* to indicate Level, followed by, for example, abbreviations to represent the specifics of the index, and time intervals where applicable. The most commonly used are given below.

$L_{eq,T}$, (dB) - Equivalent Continuous Sound Pressure Level

The $L_{eq,T}$ value is the sound pressure level in decibels of a continuous steady sound that within a specified time interval, T, has the same mean-squared sound pressure as a sound that varies with time. It is often used as a descriptor of the **ambient noise climate**, and commonly seen as a single A-weighted figure $L_{Aeq,T}$.

L_{max}, (dB) - Maximum Sound Pressure Level

The L_{max} value is the highest recorded sound pressure level in decibels averaged across a specified time constant during a noise measurement of certain duration. Two time constants are used, Fast and Slow, where the time constants are 0.125s and 1s respectively. The time constant is denoted in the index, $L_{max,F}$ for Fast and $L_{max,S}$ for Slow. It is often used to identify transient events that have a high-level relative to the ambient noise climate, and commonly seen as a single A-weighted figure L_{Amax}.

$L_{10,T}$, (dB) - Equivalent Continuous Sound Pressure Level

The $L_{10,T}$, value is the sound pressure level in decibels that is exceeded for 10% of a given time interval, T. It is often used as a measurement of noise from transportation sources such as road and rail. It is commonly seen as a single A-weighted figure $L_{A10,T}$.

$L_{90,T}$, (dB) - Equivalent Continuous Sound Pressure Level

The $L_{90,T}$, value is the sound pressure level in decibels that is exceeded for 90% of a given time interval, T. It is often used as a descriptor of the **background noise climate**, and commonly seen as a single A-weighted figure $L_{A90,T}$.

Appendix B

Document Naming and Version Control Policy

All documents are issued with a unique number which comprises the principle 8-digit project and 1-digit subsection numbers, for example 20151203-0, and a reference indicting iteration of document type, for example R1 for Report 1, M2 for Memorandum 2 etc.

All documents employ version control through the use of a unique version number. The version numbers employ two levels of hierarchy, and use the format illustrated below:

V 1 . 2

Major Minor

Major

A major revision occurs when the report is revised to reflect significant changes in design strategy. For example, wide scale changes to building footprint or general arrangements, changes to principle construction type (e.g. masonry to lightweight), reselection of mechanical services plant etc. A change in strategy that takes place within the same RIBA work stage for example will prompt a major revision to a document.

Minor

A minor revision occurs when the report is revised to reflect minor changes to the design implementation. For example a change in the type of natural vent, extract fan, surface finish etc. to be used, on the project. Minor revisions will also occur when there is a change in wording of the report text.

Reporting

The Document History and Version Control table on the second page of each report identifies the versions through which the document has moved, along with the date, author that produced the version, and a description of its purpose or change.

Electronic File Naming

Reports issued electronically use the following format:

2012xxxx	- x	Rx	Noise Assessment Report	v1.0	yyyy.mm.dd.pdf
Project Number	Subsection	Report Number	Report Name	Version	Date File Extension

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