VANGUARDIA

A BURO HAPPOLD COMPANY

Prosperity Parc

Noise Assessment for Outline Planning Application

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Executive Summary

Vanguardia Limited has been commissioned by Anglesey Land Holdings Ltd to undertake a noise assessment to support the outline planning application for a development of up to 238,000 square meters gross internal area for uses including data centres (use class B8), offices and research & development space (use class B1), and battery energy storage (Unique use) at Prosperity Parc, Penrhos, Anglesey, Wales (formerly the site of Penrhos Aluminium Works).

Unlike traditional B8 storage and distribution uses, the HGV activity associated with data centres is minimal, instead the main noise sources comprise the plant required to maintain the appropriate internal conditions in terms of temperature and air flow.

The purpose of the noise assessment is to discuss the relevant planning policy and guidance, provide details of a noise survey undertaken at and around the Proposed Development site, and define suitable target rating levels for operational sound produced by the Proposed Development at nearby existing residential receptors that can be referenced in the relevant reserved matters applications (RMAs). Details of potential mitigation options are also discussed.

It is acknowledged that this application is being submitted in outline, and should the development be granted consent, RMAs would be submitted to determine the final details of each plot of the development. As part of these RMAs, the impact of noise arising from each plot and the Proposed Development as a whole, will be reassessed once operational information is available and where appropriate, consideration will be given to mitigation.

A baseline noise survey was undertaken around the Proposed Development site in October 2023 at locations representative of the nearest existing noise-sensitive receptors (NSRs). From the results of the noise survey, typical background sound levels at the location of each NSR have been calculated.

Using the typical background sound levels and the methodology detailed in the British Standard BS 4142:2015+A1:2019, target rating levels for cumulative operational sound from the Proposed Development (i.e., the combined sound level from all sources associated with operation of the Proposed Development) at the NSRs have been identified. By not exceeding the target rating levels, it is considered that operational sound from the Proposed Development will comply with all relevant objectives of Planning Policy Wales, including in terms of soundscapes. As previously stated, the target rating levels can be referenced in future applications for reserved matters when considering operational sound. Potential mitigation options, such as screening, have also been discussed.

It is noted that an outline planning application for a battery energy storage system (BESS) on the site, similar to what is proposed in this application, was approved by Isle of Anglesey County Council in January 2024 (planning ref OP/2023/8). The predicted levels of operational sound included with that application, which did not assume any mitigation measures in place, are well below the target rating levels for operation sound in this report, indicating that the site is suitable for this use in principle.

Contents

Glossary

Term	Definition
Ambient Sound (as defined in BS 4142:2014+A1 2019)	Totally encompassing sound in a given situation at any given time, usually composed of sound from many sources near and far. Usually expressed in terms of $L_{Aeq,T}$ and includes the residual and specific sound when present.
Background Sound (as defined in BS 4142:2014+A1 2019)	The A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval. Expressed as $L_{A90,T}$ and generally considered to be the average minimum noise level.
Decibel, dB	Decibel (dB) is a dimensionless unit commonly used to demonstrate sound levels. It is derived from the logarithm of the ratio between the measured level and the reference value. For sound pressure level (L_p) the reference value is $2x10^{-5}$ pascals. For sound power (L_w) reference value is $1x10^{-12}$ Watts.
Façade Level	The sound level at a position 1 m in front of a reflecting façade of a building. The façade noise level is assumed to be 3 dBA higher than the level measured or predicted at the same position but without the influence of the reflecting façade.
Free-field Level	The sound level in an open area well away from any buildings or other sound reflecting surfaces other than the ground. Generally, the minimum distance from building facades required for free-field measurements is 3.5 m.
Frequency	Number of cycles per second, measured in hertz (Hz), related to sound pitch.
$L_{Aeq,T}$	The equivalent continuous A-weighted sound or noise level over the time period (T). This is the A-weighted sound pressure level of a continuous, steady sound that, over the given time period (T), contains the same sound energy as the actual fluctuating sound over the same time period.
$L_{A90,T}$	This is the 'A' weighted noise level exceeded for 90% of the measurement period, T. This is often described the background sound or noise level.
$L_{A10,T}$	This is the 'A' weighted noise level exceeded for just 10 % of the measurement period, T.
$L_{A10,18h}$	This is the arithmetic average of the hourly ($L_{A10,1h}$) values for each of the eighteen one-hour periods between 06:00 and 24:00 hours. This indicator is normally used to describe road traffic noise.
$L_{Amax,T}$	This is the maximum 'A' weighted noise level that occurs during the measurement period, T. It is used to show the highest noise level that occurred in that time period. In some situations, the effect of noise is more associated with the maximum value than, for example, the $L_{Aeq,T}$ indicator.
Rating Sound Level (as defined in BS 4142:2014+A1 2019)	The specific sound level plus any adjustment for the characteristic features of the sound. Expressed in terms of Lar,Tr.
Residual Sound (as defined in BS 4142:2014+A1 2019)	The ambient noise remaining at the assessment location when the specific noise source is suppressed to such a degree that it does not contribute to the ambient noise. Expressed in terms of $L_{Aeq,T..}$
Specific Sound Level (as defined in BS 4142:2014+A1 2019)	The equivalent continuous A-weighted sound pressure level produced by the specific sound source (being assessed) at the assessment position over a given reference time interval ($L_{Aeq,Tr}$).
Weightings (as defined in BS EN 61672:2013):	A-Weighting: Frequency weighting devised to attempt to take into account the fact that human response to sound is not equally sensitive to all frequencies; it consists of an electronic filter in a sound level meter, which attempts to build in this variability into the indicated noise level reading so that it will correlate, approximately, with human response.). C-Weighting: One of the frequency weightings corresponding to the 100-phon contour and the closest to the linear or un-weighted value.

1 Introduction

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The purpose of this noise assessment is to discuss the relevant planning policy and guidance, provide details of a noise survey undertaken at and around the Proposed Development site, and define suitable target rating levels for operational sound produced by the Proposed Development at nearby existing residential receptors that can be referenced in the relevant applications for reserved matters. Details of potential mitigation options are also discussed.

It should be noted that an outline planning application for a battery energy storage system (BESS) on the Proposed Development site was approved by Isle of Anglesey County Council (IACC) in January 2024 (planning ref. OP/2023/8). The proposals for a BESS scheme within Prosperity Parc are retained, and, although the extent and location are anticipated to be within the same vicinity (south of the former Pot Lines building), the location and detailed nature of the proposals will be determined through reserved matters. However, the approval of that application (which was supported by a noise assessment) demonstrates the suitability of the site for this use in principle.

Figure 1—1 below presents the Proposed Development site boundary in red in the context of the wider Penrhos area.

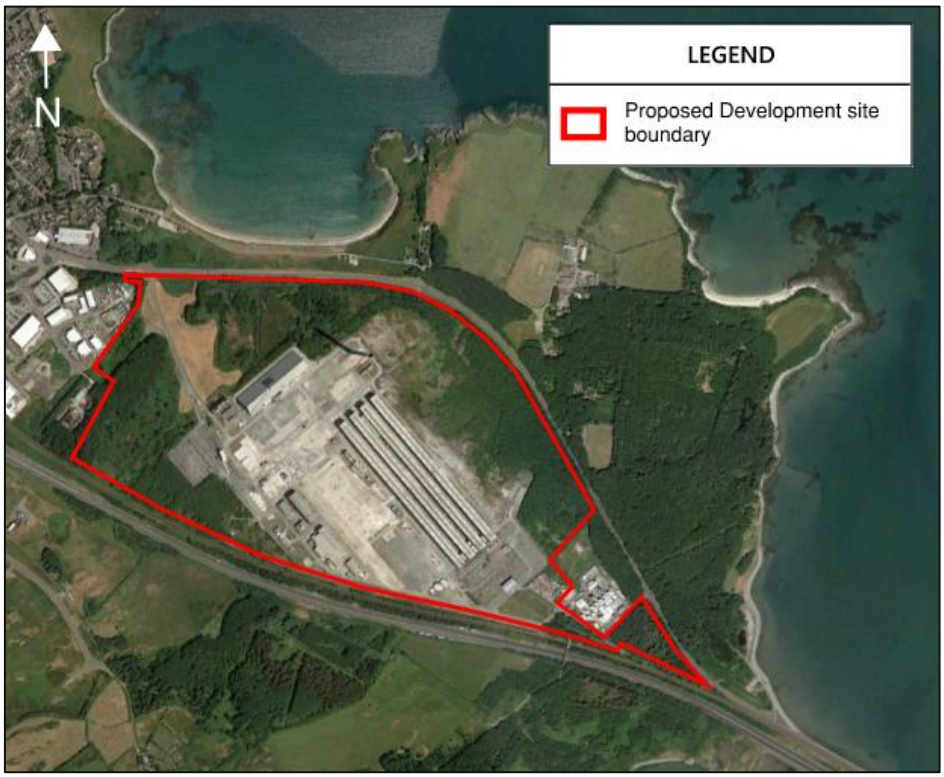


Figure 1—1 Application site boundary

To aid in the understanding of this report, a glossary of acoustic terms is provided at the front-end. All sound pressure levels quoted in this document are given in dB re. 20 µPa.

2 Legislation, Policy, and Guidance

2.1 National Policy

2.1.1 Noise and Soundscape Plan for Wales 2023-2028: Our national strategy on soundscapes

This document sets out Wales's national strategy on soundscapes, i.e., the sound environment as perceived or experienced and/or understood by a person or people, in context. The strategy is considered to apply to all sources of airborne sound.

It is noted that although not covered by the technical definition of soundscape, the Welsh Government considers the effects of airborne sound on terrestrial wildlife, pets and farmed animals to be inside the scope of the document.

The document seeks to discharge the legal requirements under:

- **The Environmental Noise (Wales) Regulations 2006**, which requires Welsh Ministers to review and if appropriate update their existing environmental noise action plans no later than 5 years after their adoption i.e. by 4th December 2023; and
- **The Environment (Air Quality and Soundscapes) (Wales) Act 2024**, which requires Ministers to prepare and publish a strategy containing their policies with respect to the assessment, management and design of soundscapes in Wales, including policies for assessing and effectively managing noise pollution.

The document indicates that *'It is up to each Welsh local authority how best to communicate its local noise and soundscape policies. Options include producing a local plan or strategy for noise and soundscape, or one covering the air environment more generally.'*

2.1.2 Planning Policy Wales, Edition 12 (2024)

Planning Policy Wales (PPW) is a document that sets out the land use planning policies of the Welsh Government. Section 6.7 "Air Quality and Soundscape" makes reference to the acoustic environment and acoustic design. Of particular relevance is paragraph 6.7.14 which identifies the need to minimise any potential adverse effects of sound and to safeguard the acoustic environment. The paragraph states the following:

> *"Proposed development should be designed wherever possible to prevent adverse effects to amenity, health and the environment but as a minimum to limit or constrain any effects that do occur. In circumstances where impacts are unacceptable, for example where adequate mitigation is unlikely to be sufficient to safeguard local amenity in terms of air quality and the acoustic environment it will be appropriate to refuse permission."*

Section 6.7.6 also states:

> *"In proposing new development, planning authorities and developers must, therefore … not create areas of poor air quality or inappropriate soundscape; and seek to incorporate measures which reduce overall exposure to air and noise pollution and create appropriate soundscapes."*

2.1.3 TAN 11 (1997)

PPW is supplemented by a series of Technical Advice Notes (TANs) which, together with the main PPW document, provide the national planning policy framework for Wales. TAN 11 relates specifically to noise; paragraph 8 states the following regarding noise generating development:

> *"Local planning authorities must ensure that noise generating development does not cause an unacceptable degree of disturbance."*

In addition, Annex B of TAN 11 contains further advice on the assessment of noise from different sources. In particular, paragraph B17 covers noise from industrial and commercial developments, and states the following:

> *"The likelihood of complaints about noise from industrial development can be assessed, where the Standard is appropriate, using guidance in BS 4142:1990"*

The current version of BS 4142 (2014+A1:2019, discussed below in section 2.2.1) has been updated to reflect assessment of the likelihood of adverse or significant adverse noise effects, rather than the likelihood of noise complaints as was the case in the 1990 edition of the standard.

Paragraph B17 also states:

> *"In addition, general guidance on acceptable noise levels within buildings can be found in BS 8233: 1987"*

BS 8233:1987 has been superseded by BS 8233:2014, which is also discussed below in section 2.2.2.

2.2 Guidance Documents

2.2.1 BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound

BS 4142 describes methods for rating and assessing sound of an industrial and/or commercial nature. This methodology provides an initial estimate of impact based on the difference between the sound from the source being assessed (the specific level) and the existing background sound level at the assessment location. These principles are also relevant when defining target rating levels for operational sound.

The standard also states that certain characteristics, if perceptible at the receptor location, can increase the extent of the impact over that expected from a simple difference in noise levels. These characteristics include tonality, impulsivity, and intermittency as well as "other sound characteristics" which is used when the sound might be readily distinctive against the residual acoustic environment but is not considered to have any of the other three features. The standard describes various options for taking any such features into account and for determining what is described in the standard as a 'rating level.'

The standard states that an initial assessment of impact can be determined by subtracting the typical background sound level from the rating level:

> *"Typically, the greater this difference, the greater the magnitude of the impact.*
>
> *A difference of around + 10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
>
> *A difference of around + 5 dB is likely to be an indication of an adverse impact, depending on the context.*
>
> *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."*

The standard states that while the difference between the rating level and the background sound level provides an initial estimate of impact, it is essential to consider the context in which the sound occurs in order to make an effective assessment of impact. In considering context, factors such as the absolute noise levels and how the character and level of the source relates to the existing sound environment can be considered if relevant.

2.2.2 BS 8233:2014 Guidance on sound insulation and noise reduction for buildings

In considering absolute levels of noise to provide context to the findings of the BS 4142 initial estimate of impact, and the definition of appropriate target rating levels for operational sound, reference can be made to BS 8233. This provides guideline values for internal and external ambient noise levels for various locations and activities, and various times of the day. Table 2—1 presents a summary of the guideline ambient noise values from BS 8233 for residential properties.

Table 2—1 Summary of BS 8233:2014 guideline values for residential properties

Location (activity)	Time period, T	Desirable Sound Level not to be exceeded
Inside bedrooms and living rooms (resting)	Day (07:00 – 23:00)	35 dB $L_{Aeq,T}$
Inside bedrooms (sleeping)	Night (23:00 – 07:00)	30 dB $L_{Aeq,T}$
Inside Dining Room/area (dining)	Day (07:00 – 23:00)	40 dB $L_{Aeq,T}$
External Amenity Space	Day (07:00 – 23:00)*	50 dB $L_{Aeq,T}$
*Time period not defined but assumed to be daytime.		

The levels shown in Table 2—1 above assume normal diurnal fluctuations in external noise, that the sound is anonymous (i.e., no acoustic features) and are based on the guidelines given in the World Health Organization (WHO) 'Guidelines for Community Noise'. If the sound does have certain characteristics, it may be appropriate to consider a lower value as the desirable level or apply a correction for those characteristics to the predicted levels, the latter is the approach normally taken by Vanguardia.

The standard (BS 8233) goes on to note that, where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved. While it is accepted that this uplift would not be applicable to assessment described in this report, it does suggest that the guideline values given in Table 2—1 can be considered conservative.

2.3 Consultation with Local Authority

An email was sent to Mr Mick Goodfellow, Principal Pollution Control Officer at IACC, on 10th May 2024 including the proposed use of the previously collected survey data from 2023 for the assessment. A response was received from Mr Goodfellow later that day confirming that this was acceptable and stating that the Environment (Air Quality and Soundscapes) (Wales) Act 2024 had come into force on 14th February 2024 and that the aspect of "soundscape" was something that should be considered within the assessment methodology.

As part of this correspondence, it was agreed that as limited information regarding construction programme, phasing and equipment was available, construction noise effects could be managed by a condition requiring a Construction Environmental Management Plan (CEMP) which includes a noise assessment.

From the perspective of operational noise from the site, it was agreed that given the transport links, it is unlikely that the Proposed Development would result in any significant effects at sensitive receptors on its route from the A55 to the development site and vice versa. Therefore, an assessment of road traffic noise impacts would not be undertaken.

Regarding noise from HGV activity on site (manoeuvring, loading/unloading, and reversing etc) it was agreed this would be predicted at the nearest sensitive receptors. With the intention that these predicted levels would be assessed against BS 4142:2014+A1:2019 in the context of the background and absolute sound levels. Any relevant guidance in TAN 11 will also be considered. Once the impacts have been identified, it would then be determined if any mitigation is required to comply with local and national policy. However, this was agreed when the site was intended to be a mixture of traditional B8 storage and distribution with some data centre use. The subsequent evolution of the development proposals to the current mix of uses, means that there is minimal HGV activity and instead the main source of operational noise from the data centres (B8 use class) will be equipment to maintain optimum temperature and air flow within the data centres. Given the outline stage of the proposals, sufficient information is not available about what equipment this would entail and where on each plot this would be located to enable predictions to be undertaken. It is understood that all fixed plant associated with these uses would be internally housed and louvred to atmosphere.

3 Methodology

3.1 Existing Noise-Sensitive Receptors

The location of the Proposed Development is at the former Penrhos Aluminium Works site in Penrhos. Figure 3—1 below presents the location of the application site boundary (in red), as well as the location of the nearest existing noise-sensitive receptors (NSRs) listed in Table 3—1 below.

Table 3—1 Existing noise-sensitive receptors

Receptor	Description	Type
NSR 1	Penrhos Beach Road	Residential
NSR 2	Penrhos Lodge	Residential
NSR 3	Gardener's Cottage, London Road	Residential
NSR 4	Trearddur	Residential
NSR 5	Lôn Trefignath	Residential
NSR 6	Tyddyn Pioden, near Parc Cybi/Kingsland Road	Residential
NSR 7	Homewood (set back from London Road)	Residential
NSR 8	Y Bwthyn, Penrhos Beach Road	Residential

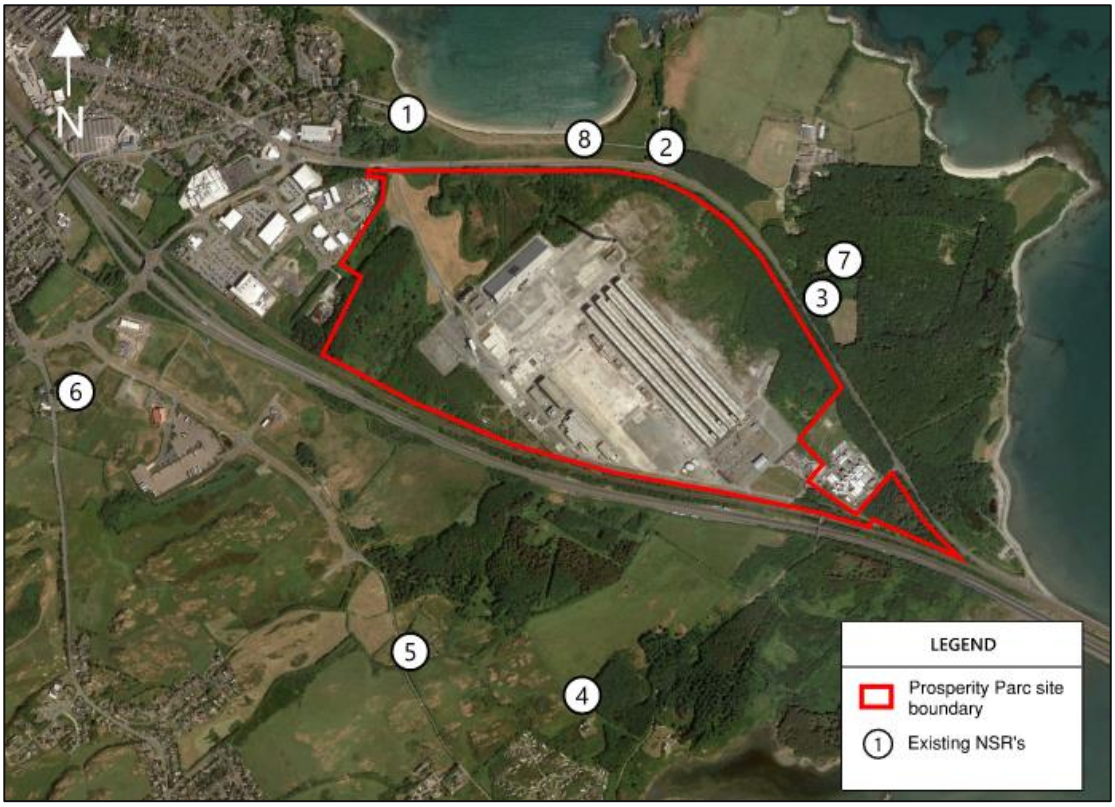


Figure 3—1 Location of the Proposed Development site boundary and existing noise-sensitive receptors

3.2 Baseline Noise Survey

Background noise levels (dB $L_{A90,T}$) representative of those experienced at the NSRs were obtained by way of a baseline noise survey in October 2023, comprising long-term unattended measurements and short-term attended measurements (for comparison with the long-term data) undertaken both within the Prosperity Parc site boundary and off-site at locations representative of the NSRs. All noise monitoring took place during school term-time. A monitoring plan is presented in Figure 3—2.

All measurements were undertaken using Class 1 monitoring equipment subject to certificates of periodic verification traceable to International and British Standards. The sound level meters used were field calibrated prior to and following the measurements using a Class 1 acoustic calibrator, with no significant drift in sensitivity being indicated. Further details of the equipment used for the survey are provided in Appendix A.

All measured data from the survey was processed and compared against any potential adverse weather conditions which may have affected the measurements (any period where there was rainfall/where the wind speed exceeded 5 m/s). Any noise data coinciding with such periods of adverse weather was omitted from analysis. Details of the weather data obtained during the survey period is presented in Appendix B.

3.2.1 Baseline Conditions

Due to security concerns at some locations and ongoing noisy construction works at Trearddur Country Park (NSR 4), it was not possible to install an unattended noise monitor at every NSR location. As such, and as is in accordance with the guidance contained within section 8.1.2 and section 8.4 of BS 4142, Vanguardia identified suitable representative measurement locations. The residual soundscape at these representative locations is considered comparable to that at the assessment locations in the absence of the noise under assessment and therefore suitable to use for assessment purposes.

In general, the existing noise levels were dominated by road traffic noise from the A5/A55/B4545, as well as exhaust plant associated with the ongoing aluminium powder coating operations of AMG Alpoco Ltd, located within the former Penrhos Aluminium Works site. The aluminium works are adjacent to the eastern end of the Prosperity Parc site boundary, operate 24/7, and their operation is audible across much of the wider Penrhos area. Table 3—2 outlines the existing noise environment at each NSR as observed at the representative monitoring positions during the survey. Monitoring positions are presented below in Figure 3—2.

Historically, the Proposed Development site comprised industrial uses being home to Penrhos Aluminium Works and their aluminium smelter which began to produce aluminium in 1971 and was one of the largest employers in North Wales. However, the smelting operations shut down in 2009 and while the Aluminium re-melt facility initially remained open, its closure was announced in 2013. Therefore, there is long established history of industrial use of this site, despite a recent pause in operations.

Table 3—2 Existing noise environment as observed at NSRs

Monitoring Location	Existing Noise Environment	Representative of Receptor
ST1	Background sound dominated by road traffic from the A5 and Penrhos Beach Road/car park. Aluminium exhaust plant also audible in-between traffic. Intermittent sources include occasional overhead plane, intermittent birdsong, and walkers/passers-by.	NSR 1
ST3	Background sound dominated by road traffic from the A5. Aluminium exhaust plant also audible in-between traffic. Intermittent sources include occasional overhead plane, birdsong, and walkers/passers-by.	NSR 2 & NSR 8
LT2	Background sound dominated by road traffic from the A5 and aluminium exhaust plant (especially in-between traffic). Intermittent sources include occasional overhead plane and birdsong.	NSR 3 & NSR 7
LT4/ST4	Background sound includes some traffic noise from A55 and audible ongoing works from Trearddur Country Park (construction machinery). Otherwise, quiet – occasional aircraft, lots of birdsong and occasional sheep bleating.	NSR 4
ST4	Background sound includes some traffic noise from A55 and Parc Cybi/Holyhead Truck Park. Works from Trearddur Country Park also occasionally faintly audible. Intermittent sources include occasional aircraft, birdsong and sheep bleating.	NSR 5
LT3	Background sound dominated by road traffic from A55, Parc Cybi and B4545. Lots of birdsong, occasional overhead plane and sheep bleating.	NSR 6
ST5	Dominated by aluminium exhaust plant and road traffic from A5.	N/A

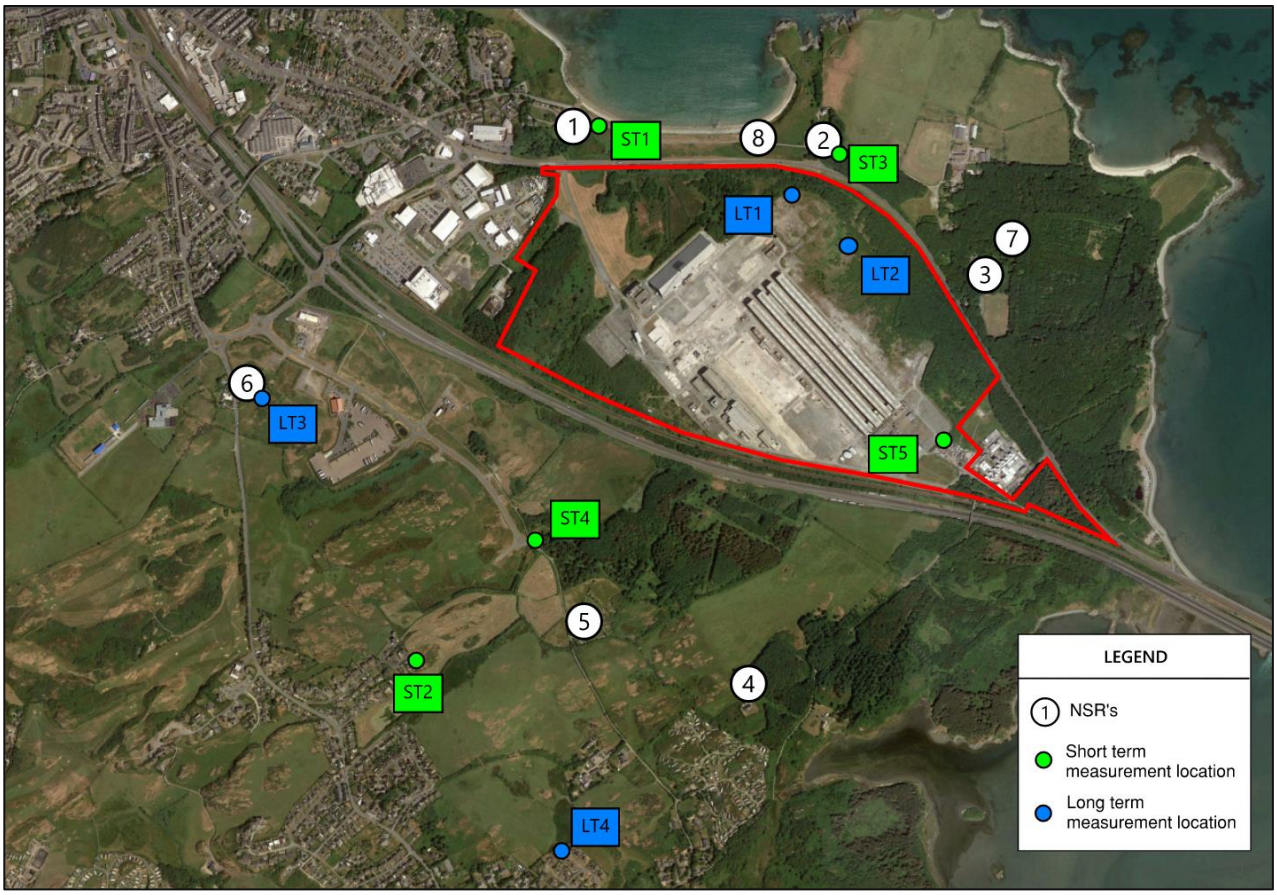


Figure 3—2 – Noise monitoring location plan

Unattended measurement equipment was configured to log noise levels continuously in 15-minute intervals, with a 1-minute time history resolution, from Thursday 19th October to Thursday 26th October 2023. Noise levels were measured in a range of indices including $L_{Aeq,T}$, $L_{A90,T,}$ and L_{Amax}. Attended measurements were undertaken on Thursday 19th October between 15:00 and 15:45, Wednesday 25th October between 16:00 and 22:45, and Thursday 26th October 2023 between 10:00 and 10:15. Full results of the measured noise levels are included in Appendix A.

A weather station was deployed alongside the noise monitoring equipment (at location LT1), as wind direction was anticipated to have influence on the measured sound levels in the area around the Proposed Development site (full results of the measured weather conditions are included in Appendix B). Consequently, the baseline noise survey data has been analysed and split into two data sets based on the wind direction at the time of measurement, as follows:

- Broadly westerly winds (i.e., sound levels measured when winds from the south, south southwest, southwest, west southwest, west, west northwest, northwest, north northwest); and
- Broadly easterly winds (i.e., sound levels measured when winds from the north, north northeast, northeast, east northeast, east, east southeast, southeast, and south southeast).

Following this analysis, it was found that noise level data associated with broadly westerly winds was approximately 5 dB quieter than the data associated with broadly easterly winds. It is also understood that the typically prevailing wind direction in the wider Penrhos area is broadly westerly/south-westerly. As such, noise level data associated with broadly westerly winds has been utilised in this assessment in order to represent a worst-case scenario and to provide a robust assessment.

The methodology set out in BS 4142:2014+A1:2019 specifically states that a typical background sound level must be selected for receptors and that the objective is not to identify the lowest level that might occur, but rather what is typical for the assessment periods and circumstances of interest. The modal value (i.e., the most frequently occurring noise level) is generally considered to be a good indicator of the typical background sound level, and this has been referenced in defining the target rating levels for operational sound for the day (07:00 – 23:00) and night (23:00 – 07:00) assessment periods. The typical background sound levels are presented in Table 3—3.

Table 3—3 Typical background sound levels used for the assessment (under broadly westerly winds)

Receptor	Daytime Period (07:00 – 23:00)	Night-time Period (23:00 – 07:00)
	Typical Background Sound Level $L_{A90,15min}$ dB	Typical Background Sound Level $L_{A90,15min}$ dB
NSR 1	41	38
NSR 2	41	38
NSR 3	38	41
NSR 4	35	33
NSR 5	35	33
NSR 6	41	41
NSR 7	38	41
NSR 8	41	38

3.1 Method for Identification of Target Rating Levels for Operational Sound

The main purpose of this noise assessment is to define suitable target rating levels for operational sound produced by the Proposed Development at nearby existing residential receptors that can be referenced in the relevant applications for reserved matters.

Planning Policy Wales indicates that developments should be designed, wherever possible, to prevent adverse effects occurring and constrain any effects that do occur. BS 4142 indicates that if the rating level (see paragraph 2.2.1) is around 5 dB above the existing background sound level at the assessment location, then this would be an indication of an adverse impact, depending on the context.

Regarding context, this is a site with an established history of industrial use given its previous use as Penrhos Aluminium Works and the current aluminium powder coating operations of AMG Alpoco Ltd, the exhaust of which is audible across much of the wider Penrhos area. Therefore, the Proposed Development will not introduce noise sources which are out of character for the area. Furthermore, with reference to Planning Policy Wales and the aspect of soundscape, the introduction of the Proposed Development is not considered to be inappropriate for the area, nor will it materially change the existing soundscape of the area.

On this basis, target rating levels for operational sound have been defined at each of the NSRs that are 4 dB above the typical background sound levels (under westerly winds) for the day and night-time periods. This is below the level that BS 4142 indicates that an adverse impact may occur, and is considered to comply with planning policy. The target levels are cumulative in that they apply to the total operational sound level from the Proposed Development (i.e., from all sources combined where they will generate sound at the same time), and refer to the rating level as defined in BS 4142, i.e., including any corrections that may be applied to the operational sound level to take account of the sound having certain characteristics at the assessment location (see paragraph 2.2.1).

4 Target Rating Levels for Operational Sound

Using the results of the baseline noise survey and the methodology detailed in section 3 of this report, target levels for operational sound from the Proposed Development at the relevant residential receptors are defined in Table 4—1.

Table 4—1 Target rating levels for operational sound from Proposed Development at receptors (free-field)

Receptor	Daytime Period (07:00 – 23:00)		Night-time Period (23:00 – 07:00)	
	Typical Background Sound Level $L_{A90,15min}$ dB	Target Rating Level for Operational Sound^ $L_{Ar,1hr}$ dB	Typical Background Sound Level $L_{A90,15min}$ dB	Target Rating Level for Operational Sound^ $L_{Ar,15min}$ dB
NSR 1	41	**45**	38	**42**
NSR 2	41	**45**	38	**42**
NSR 3	38	**42**	41	**45**
NSR 4	35	**39**	33	**37**
NSR 5	35	**39**	33	**37**
NSR 6	41	**45**	41	**45**
NSR 7	38	**42**	41	**45**
NSR 8	41	**45**	38	**42**

^ *The stated target rating levels are cumulative, i.e., they apply to the total operational sound level from the Proposed Development, and refer to the rating level as defined in BS 4142, i.e., including any corrections that may be applied to the operational sound level to take account of the sound having certain characteristics at the assessment (receptor) location.*

By not exceeding the target rating levels at the NSRs as stated in Table 4—1, it is considered that operational sound from the Proposed Development will comply with all relevant planning policy objectives. As previously stated, the target rating levels can be referenced in future applications for reserved matters when considering operational sound.

As discussed in section 1 of this report, an outline planning application for a BESS within the Proposed Development site was approved by IACC in January 2024, and a similar proposal is included within this application. The results of the noise assessment included with that application predicted rating levels from operation of the BESS to be at least 7 dB below the target rating levels stated in Table 4—1 during the day, and at least 6 dB lower during the night. It is also important to note that these results did not consider the implementation of any specific mitigation measures or screening that may occur due to buildings associated with the Proposed Development. On this basis, it can be seen that the site is suitable for this use in principle.

4.1 Potential Mitigation Measures

This planning application is being submitted in outline and therefore it is not possible to identify what, if any, mitigation measures may be required for operational sound to comply with the target rating levels stated in Table 4—1. However, based on the proposed uses, it is anticipated that the following measures are likely to be effective in terms of operational sound mitigation, depending on the precise circumstances:

- Modifying the layout to utilise the inherent screening of the buildings associated with the Proposed Development;
- Erecting fencing with appropriate acoustic specifications to provide additional screening of operational sound sources;
- Selection and location of fixed plant installations to minimise noise at the NSRs; and
- Implementation of enclosures, attenuators and acoustically rated louvres to fixed plant installations as required.

5 Conclusion

Vanguardia Limited has been commissioned by Anglesey Land Holdings Ltd to undertake a noise assessment to support the outline planning application for a development of up to 238,000 square meters gross internal area for uses including data centres (use class B8), offices and research & development space (use class B1), and battery energy storage (Unique use) at Prosperity Parc, Penrhos, Anglesey, Wales (formerly the site of Penrhos Aluminium Works).

The purpose of the noise assessment is to discuss the relevant planning policy and guidance, provide details of a noise survey undertaken at and around the Proposed Development site, and define suitable target rating levels for operational sound produced by the Proposed Development at nearby existing residential receptors that can be referenced in the relevant applications for reserved matters. Details of potential mitigation options are also discussed.

A baseline noise survey was undertaken around the Proposed Development site in October 2023 at locations representative of the nearest existing noise-sensitive receptors (NSRs). From the results of the noise survey, typical background sound levels at the location of each NSR have been calculated.

Using the typical background sound levels and the methodology detailed in the British Standard BS 4142:2015+A1:2019, target rating levels for cumulative operational sound from the Proposed Development (i.e., the combined sound level from all sources associated with operation of the Proposed Development) at the NSRs have been identified. By not exceeding the target rating levels, it is considered that operational sound from the Proposed Development will comply with all relevant objectives of Planning Policy Wales, including in terms of soundscapes. As previously stated, the target rating levels can be referenced in future applications for reserved matters when considering operational sound. Potential mitigation options, such as screening, have also been discussed.

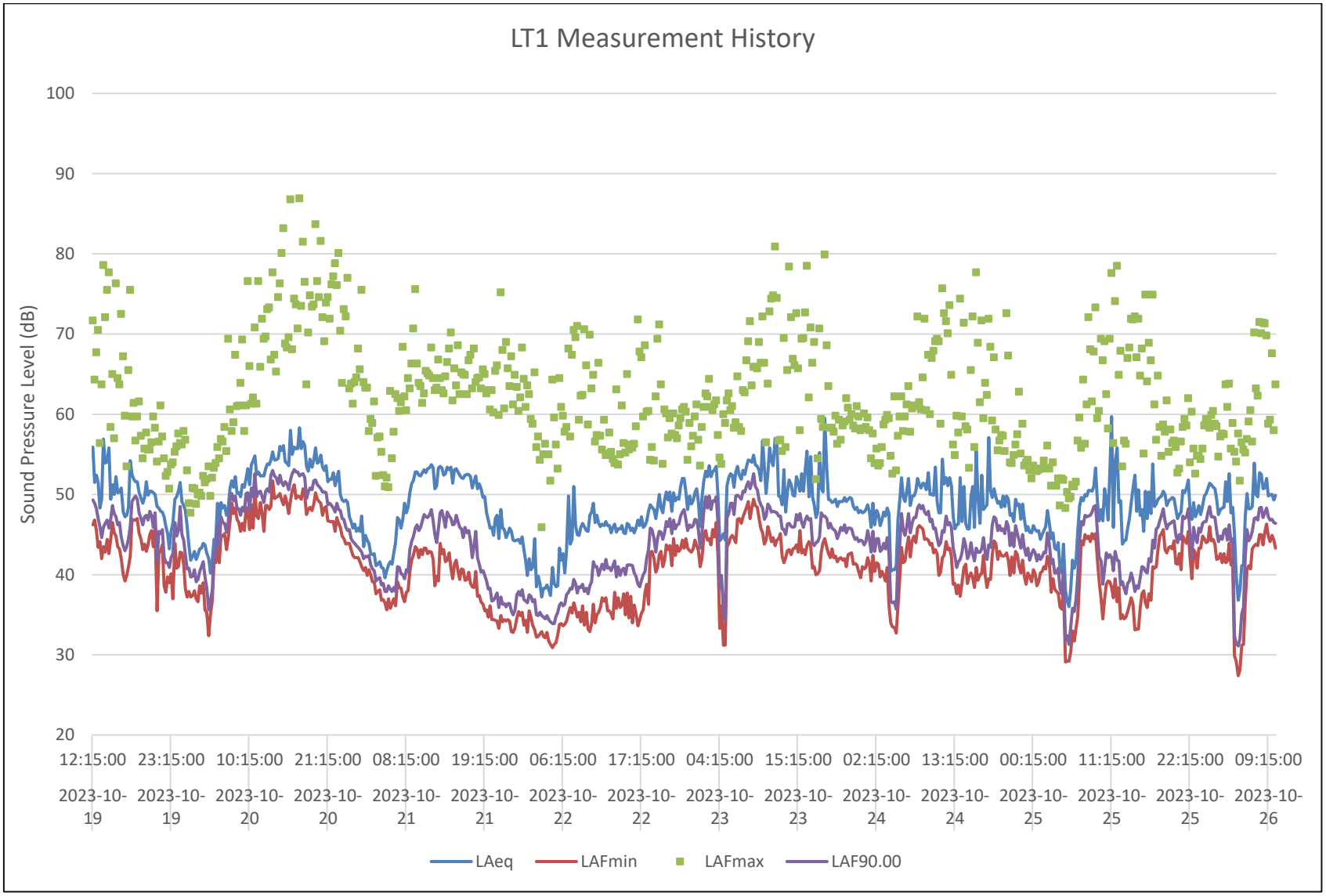
It is noted that an outline planning application for a battery energy storage system (BESS) on the site, similar to what is proposed in this application, was approved by IACC in January 2024. The predicted levels of operational sound included with that application, which did not assume any mitigation measures in place, are well below the target rating levels for operation sound in this report, indicating that the site is suitable for this use in principle.

Appendix A – Survey Data

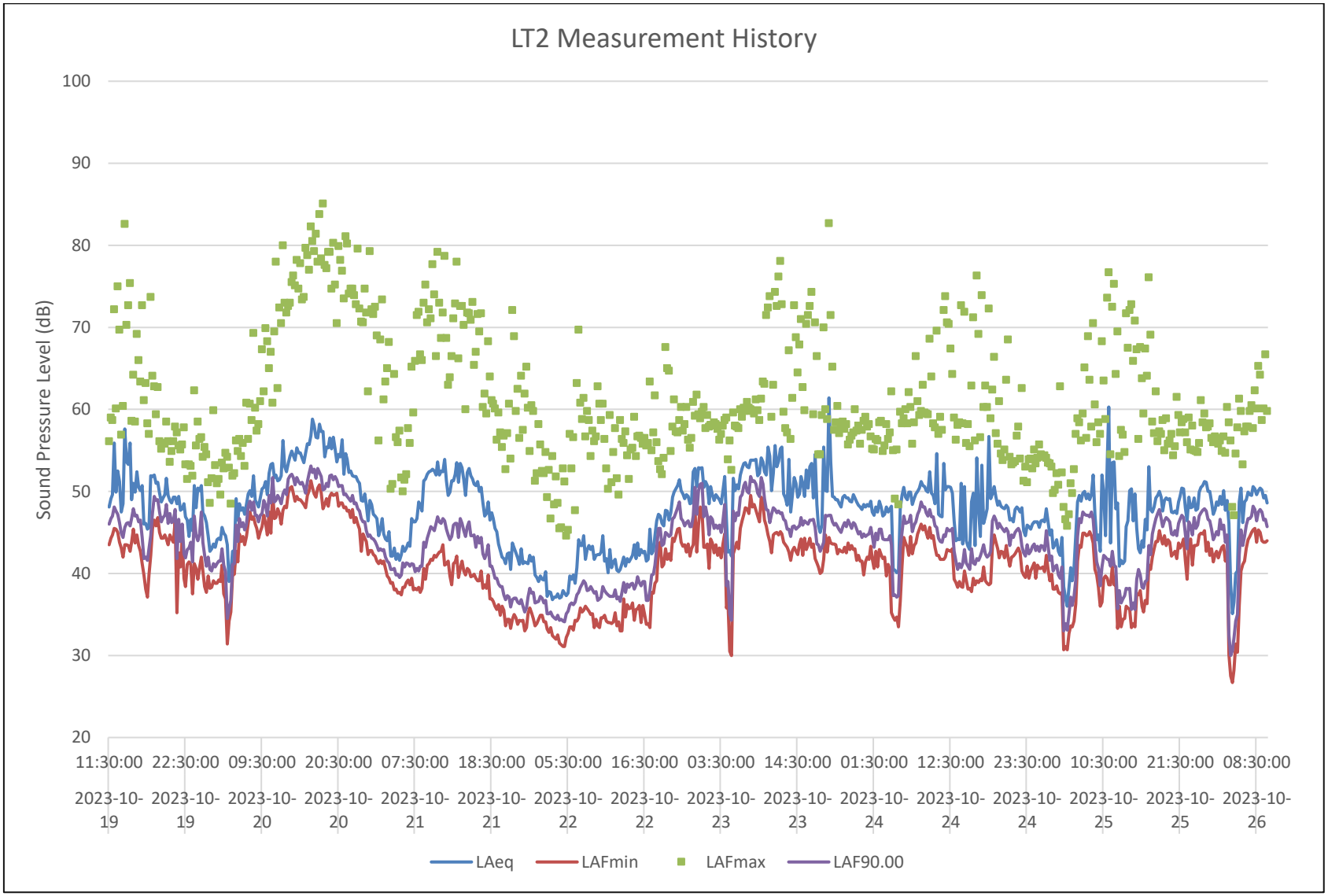
A.1 Baseline survey equipment information

Location	Survey Item	Model	Serial Number	Last Laboratory Calibration Date
LT1	Sound Analyser	Larson Davis LxT SE	0003816	07/03/2023
	Pre-amp	Larson Davis PRMLxT1L	55700	
	Microphone	PCB 377B02	305122	
	Calibrator	Larson Davis CAL200	21453	18/07/2023
LT2	Sound Analyser	Larson Davis LxT SE	0007082	18/05/2022
	Pre-amp	Larson Davis PRMLxT1L	77678	
	Microphone	PCB 377B02	338712	
	Calibrator	Larson Davis CAL200	21453	18/07/2023
LT3	Sound Analyser	Larson Davis LxT SE	0003815	18/08/2022
	Pre-amp	Larson Davis PRMLxT1L	42853	
	Microphone	PCB 377B02	340620	
	Calibrator	Larson Davis CAL200	21453	18/07/2023
LT4	Sound Analyser	Larson Davis LxT SE	0007080	18/05/2022
	Pre-amp	Larson Davis PRMLxT1L	77676	
	Microphone	PCB 377B02	337160	
	Calibrator	Larson Davis CAL200	21453	18/07/2023
ST1 – ST5	Sound Analyser	Larson Davis LxT SE	0005600	17/08/2022
	Pre-amp	Larson Davis PRMLxT1L	55668	
	Microphone	PCB 377B02	340621	
	Calibrator	Larson Davis CAL200	21453	18/07/2023

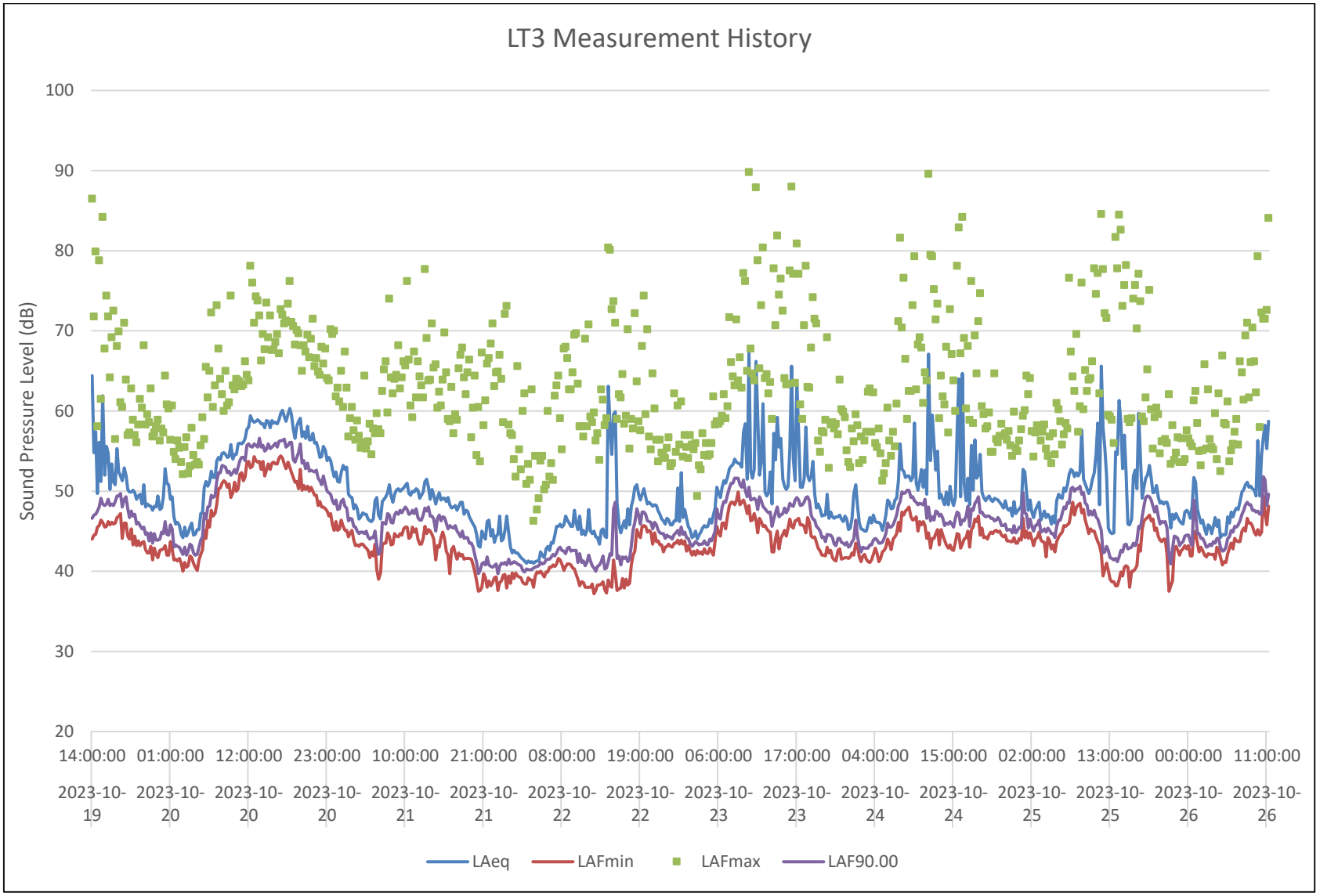
A.2 Baseline noise survey data – LT1



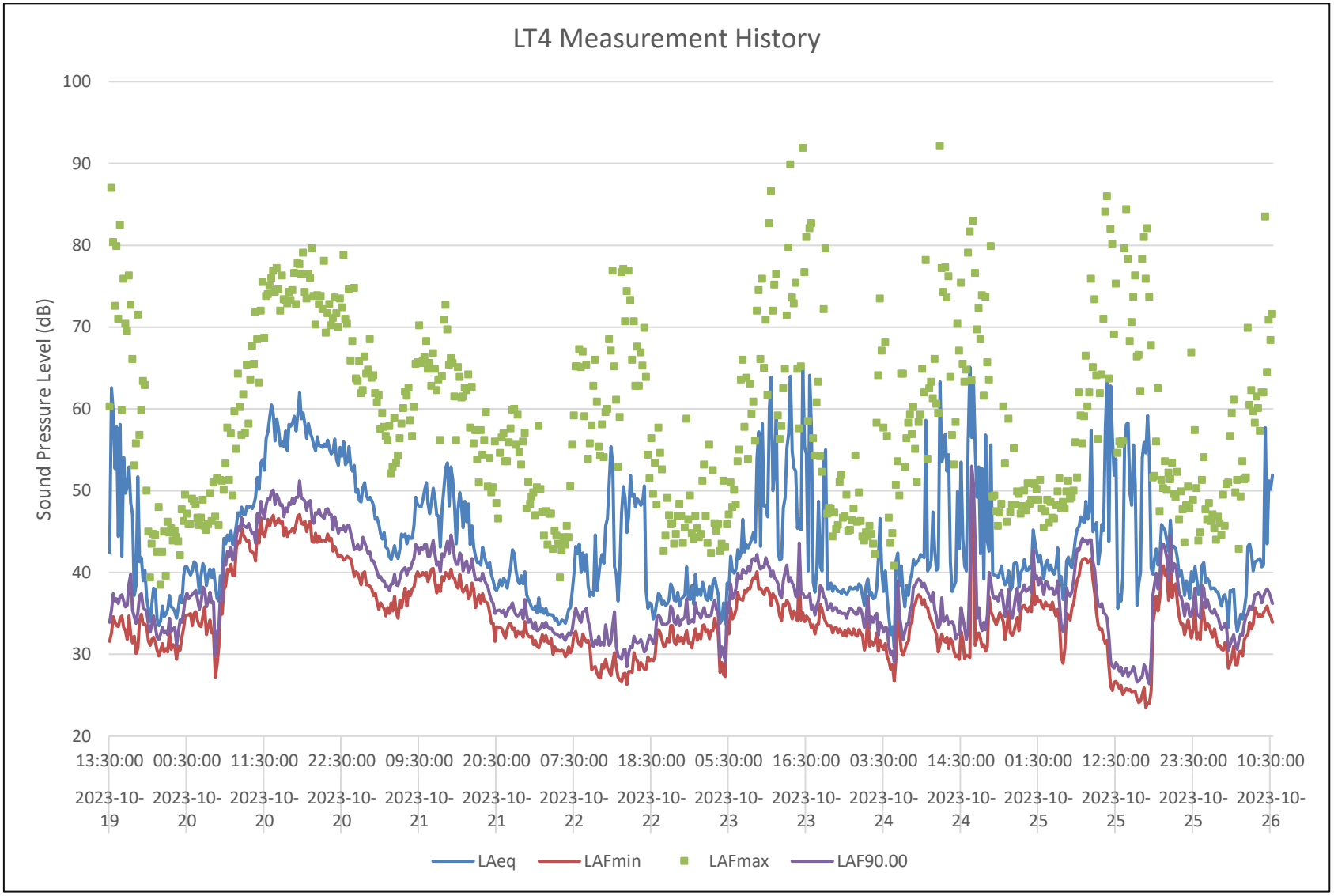
A.3 Baseline noise survey data – LT2



A.4 Baseline noise survey data – LT3



A.5 Baseline noise survey data – LT4



A.6 Baseline noise survey data – ST1

Date	Start time	Duration, T (min)	$L_{Aeq,T}$ dB	$L_{A90,T}$ dB	$L_{A10,T}$ dB	$L_{A1,T}$ dB	$L_{Amax,T}$ dB	$L_{Amin,T}$ dB
19/10/2023	15:00	15	53	48	55	61	70	44
	15:15	15	53	47	54	62	71	43
	15:30	15	54	48	55	65	73	45
25/10/2023	22:00	15	47	41	52	55	59	37
	22:15	15	46	40	48	53	57	37
	22:30	15	49	42	52	58	70	40

A.7 Baseline noise survey data – ST2

Date	Start time	Duration, T (min)	$L_{Aeq,T}$ dB	$L_{A90,T}$ dB	$L_{A10,T}$ dB	$L_{A1,T}$ dB	$L_{Amax,T}$ dB	$L_{Amin,T}$ dB
25/10/2023	16:00	15	38	28	41	49	55	24
	16:15	15	53	27	39	63	78	24
	16:30	15	57	30	46	66	83	25

A.8 Baseline noise survey data – ST3

Date	Start time	Duration, T (min)	$L_{Aeq,T}$ dB	$L_{A90,T}$ dB	$L_{A10,T}$ dB	$L_{A1,T}$ dB	$L_{Amax,T}$ dB	$L_{Amin,T}$ dB
25/10/2023	17:15	15	54	42	59	62	65	36
	17:30	15	54	41	58	62	65	36
	17:45	15	54	43	58	62	66	38

A.9 Baseline noise survey data – ST4

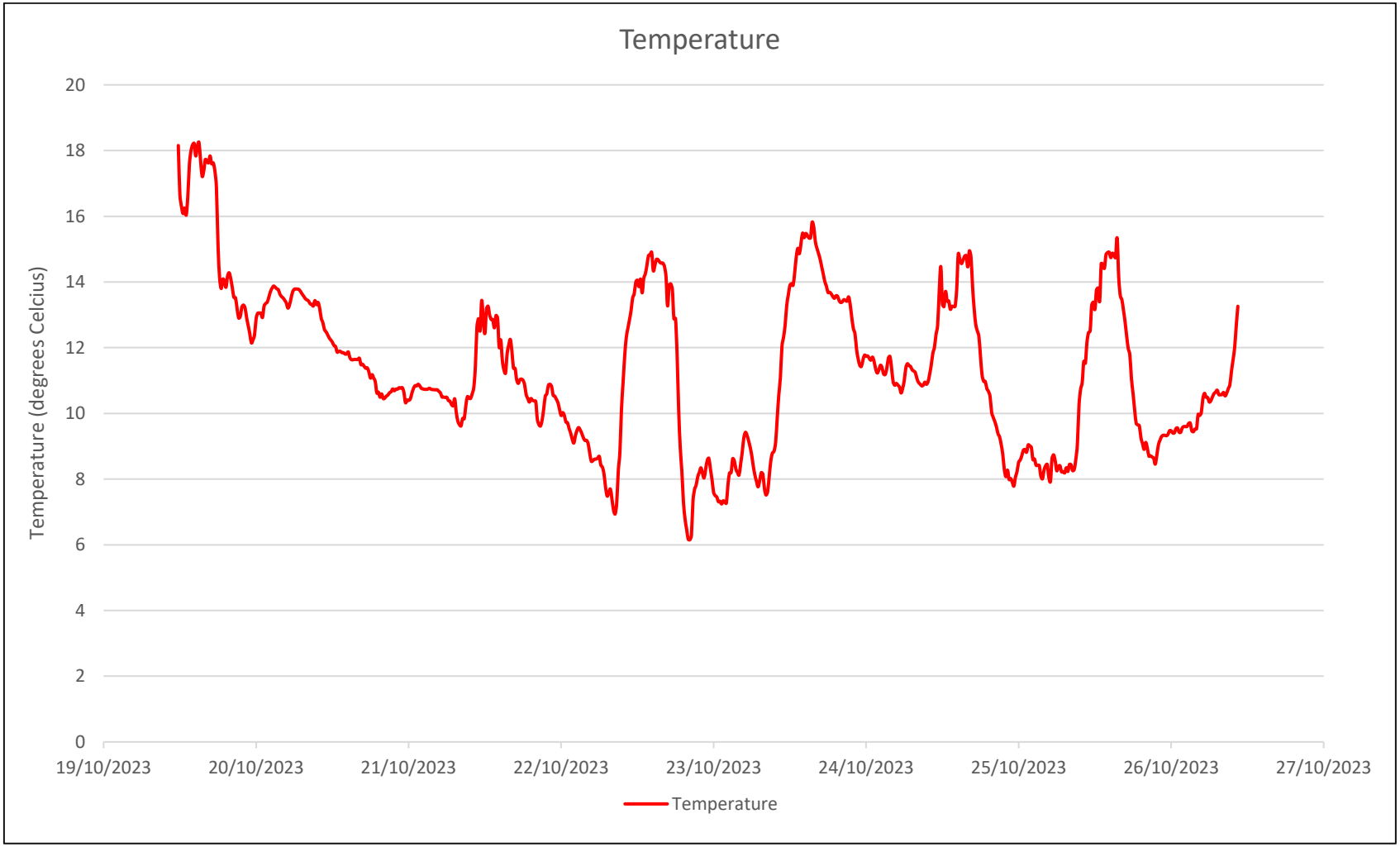
Date	Start time	Duration, T (min)	$L_{Aeq,T}$ dB	$L_{A90,T}$ dB	$L_{A10,T}$ dB	$L_{A1,T}$ dB	$L_{Amax,T}$ dB	$L_{Amin,T}$ dB
25/10/2023	18:15	15	48	44	49	58	67	41
	18:30	15	46	43	48	54	66	41
	18:45	15	46	43	48	52	66	41
	21:00	15	46	40	47	54	66	37
	21:15	15	43	39	44	50	64	38
	21:30	15	45	39	44	56	67	37

A.10 Baseline noise survey data – ST5

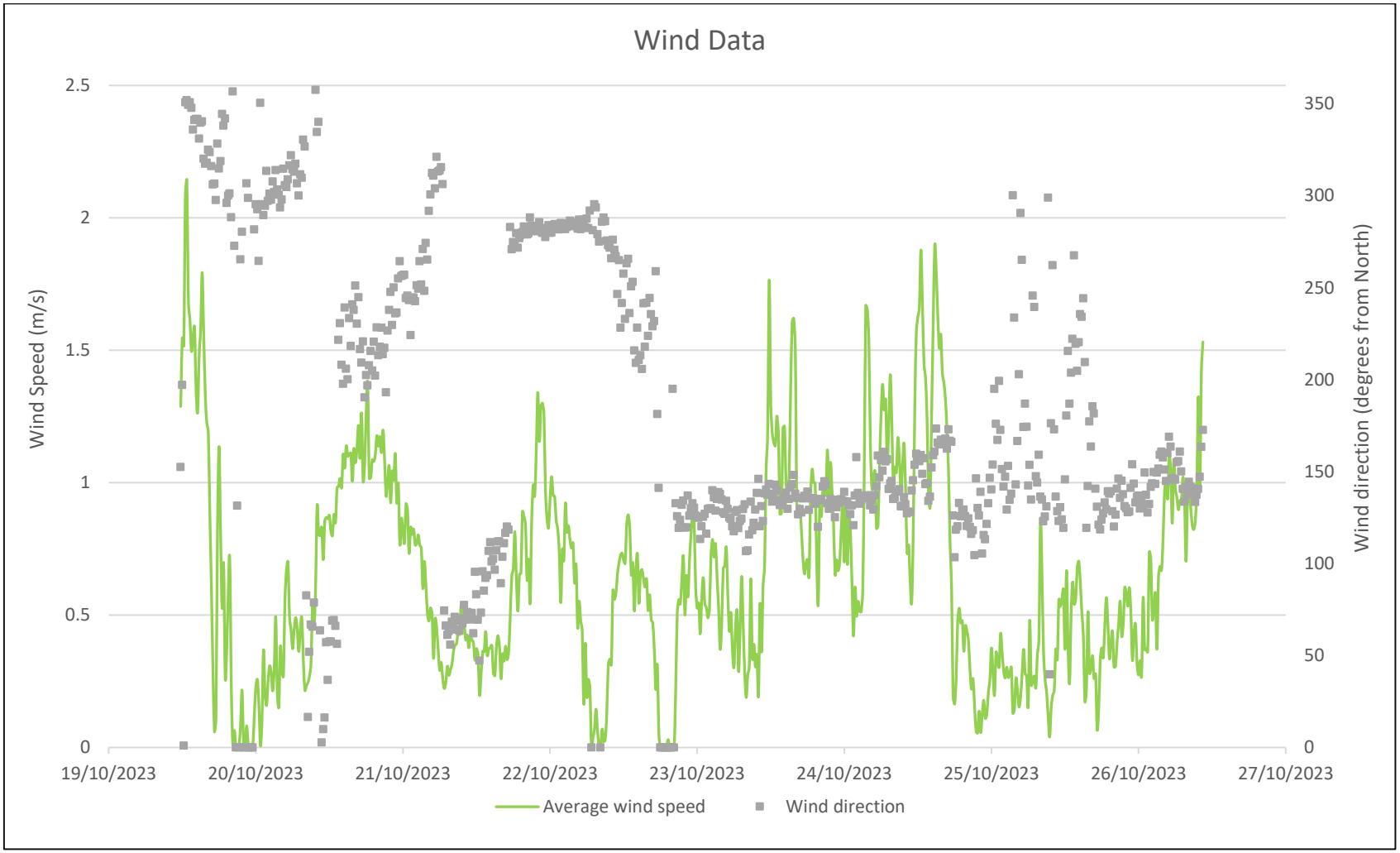
Date	Start time	Duration, T (min)	$L_{Aeq,T}$ dB	$L_{A90,T}$ dB	$L_{A10,T}$ dB	$L_{A1,T}$ dB	$L_{Amax,T}$ dB	$L_{Amin,T}$ dB
26/10/2023	10:00	15	61	60	62	64	71	58

Appendix B – Weather Data

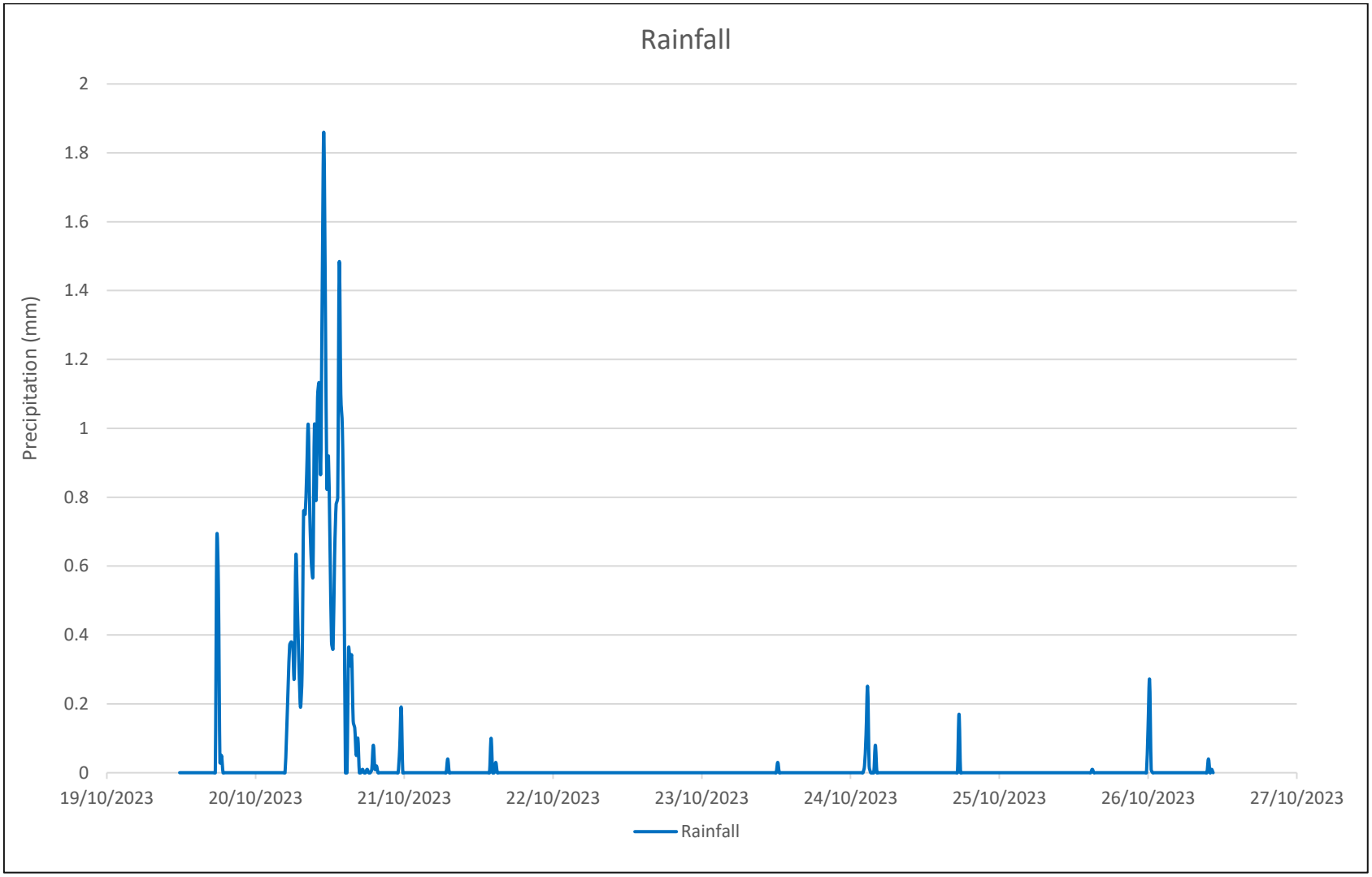
B.1 Temperature data



B.2 Wind data



B.3 Rainfall data



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