Anderson Acoustics

# LAND NORTH OF BALCOMBE ROAD

SDP

JANUARY 2026

# NOISE IMPACT ASSESSMENT
# LAND NORTH OF BALCOMBE ROAD

Our Ref: **8687_001R_1-0_BG.DOCX**

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# REVISION HISTORY

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# 1 INTRODUCTION

Anderson Acoustics Ltd has been commissioned by SDP to provide a noise impact assessment to support a planning application for a new residential development located to the north of Balcombe Road, Haywards Heath, RH16 1PF.

The development consists of circa. 125 new residential dwellings, alongside associated landscaping, internal road network and car parking spaces. The site is located within the administrative boundary of Mid Sussex District Council (MSDC).

To satisfy the requirements of local and national policy, a noise survey is required to determine the existing acoustic environment in the proposed development site and a noise impact assessment to determine the suitability of the site for residential development, alongside any outline façade mitigation requirements required.

The acoustic terminology used in this report is defined in Appendix A.

# 2 PLANNING POLICY & GUIDANCE

Assessment criteria for the proposed development is summarised below. These should be read in conjunction with the government's overarching planning principles with respect to noise including Noise Policy Statement for England (NPSE), National Planning Practice Framework (NPPF) and Planning Practice Guidance – Noise (PPG-N).

## 2.1 Planning Guidance

The noise impact assessment has been carried out with due regard for the following local and national policies.

- National Planning Policy Framework (NPPF);
- Noise Policy Statement for England (NSPE);
- Mid Sussex District Council Local Plan (2004);
- Planning Noise Advisory Document: Sussex (2023);
- Professional Practice Guidance on Planning & Noise (ProPG); and
- British Standard (BS) 8233:2014 *'Guidance on Sound Insulation and Noise Reduction for Buildings'*.

## 2.2 Local Planning Guidance

The Mid Sussex District Council Local Plan sets out planning policies to be followed for developments in Tandridge. The policies relating to this assessment are listed below.

**Policy B3:**

*"Proposals for new development, including extensions to existing buildings and changes of use, will not be permitted if significant harm to the amenities of nearby residents is likely to be created due to noise and disturbance; loss of privacy; overlooking; reduction in sunlight and daylight; and reduction in outlook."*

**Policy B23:**

*"Proposals for new developments, including roads, should be designed, located and controlled to minimise the impact of noise on neighbouring properties and the surrounding environment in order to protect the environment and residential amenity*

*Applicants may be required to submit a noise impact study or to assess the effect of an existing noise source upon the development proposed.*

*Developments likely to generate significant levels of noise will only be permitted where it is satisfied that appropriate noise attenuation measures will be incorporated which would reduce the impact on adjoining land-uses, existing or proposed to acceptable levels. Particular attention will be given to the impact of noise generating development within a Conservation Area, on a Listed Building and outside the built-up area.*

*Noise-sensitive development will not be permitted in close proximity to existing land uses (or programmed development) generating high levels of noise unless adequate sound insulation measures are incorporated within the development"*

Further guidance on the planning process in relation to noise is provided in the Planning Noise Advisory Document: Sussex 2023. The following sections from this document relates to assessment criteria for new noise sensitive development:

***"6.4 Assessment Methodology***

*6.4.1 The methodology for carrying out the assessment should follow the advice set out in Section 2.3 along with the following considerations*

*6.4.2 Development affected by transportation noise sources shall use the recommended acoustic approach set out in ProPG: Planning and Noise - Professional Practice Guidance on Planning and Noise – New Residential Development 2017.*

*6.4.3 When assessing the impact of transportation noise, be that from road, rail or air, then an Acoustic Design Statement shall be provided following the principles set out in the ProPG. A Good Acoustic Design process shall be followed to achieve appropriate internal and external acoustic conditions.*

*...*

***6.5 Design Criteria for Noise Sensitive Development***

*6.5.1 Where noise assessment has shown that habitable rooms will be exposed to noise levels likely to give ruse to any adverse impact, noise mitigation will be required.*

*6.5.2 Design control measures should aim to meet the recommended standards set out in table 4 of BS 8233:2014 and regular night time noise events such as scheduled aircraft or passing trains which can cause sleep disturbance shall be minimized and assessed as ($L_{AFmax}$), as recommended in the World Health Organisation's (WHO) Night Noise Guidelines for Europe (2009), unless there are particular reasons why this is not considered appropriate. In such cases, a clear explanation of the reasons should be provided.*

*6.5.3 As the standards for BS 8233:2014 and the WHO relate only to anonymous noise, e.g., distant road traffic and noise without characteristics such as impulsivity, low frequency content or tines then, if these are present, additional discussion will be required with the LPA for the purpose of establishing suitable assessment techniques and standards to be achieved e.g., BS 4142:2014+A1:2019 for delivery noise.*

*6.5.4 While noise mitigation measures can be used to achieve suitable internal sound levels, preference is to be given to criteria based on windows being partially open."*

Whilst only the most relevant sections of the Planning Noise Advisory Document have been included above, the following assessment and report will be conducted in accordance of all the guidance therein.

## 2.3 ProPG: Planning & Noise

The Professional Practice Guidance on Planning & Noise for New Residential Development was produced to provide practitioners with guidance on a recommended approach to the management of noise within the planning system in England.

The ProPG acknowledges and reflects the Government's overarching Noise Policy Statement for England (NPSE), the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance on Noise, as well as other authoritative sources of guidance.

The two sequential stages of the overall approach are:

- Stage 1 – an initial noise risk assessment of the proposed development site; and
- Stage 2 – a systematic consideration of four key elements.

Where sites are deemed to be "negligible" risk under Stage 1, there would not normally be a need for a Stage 2 assessment.

The four key elements to be undertaken in parallel during Stage 2 of the recommended approach are:

- Element 1 – demonstrating a "Good Acoustic Design Process"
- Element 2 – observing internal "Noise Level Guidelines"
- Element 3 – undertaking an "External Amenity Area Noise Assessment"
- Element 4 – consideration of "Other Relevant Issues"

ProPG recommends that the details of the assessment(s) are presented in an Acoustic Design Statement (ADS). An ADS should not be necessary for a site assessed as negligible risk.

**Stage 1: Initial Site Noise Risk Assessment**

The noise risk assessment is intended to provide an indication of the likely risk of adverse effects from noise without any measures in place. It may be based on measurement or prediction (or a combination) as appropriate and should aim to describe noise levels over a "typical worst case" 24-hour day either now or in the foreseeable future.

The noise risk assessment categories are presented in Figure 1 of the ProPG, which is reproduced in below. It illustrates how an initial noise risk assessment is linked with an increasing risk of adverse effect from noise, and how this in turn is broadly associated with indicative noise levels derived from current guidance and experience.

The indicative noise levels are intended to provide a sense of the noise challenge at a potential residential development site. Whilst it is noted that they "…should be interpreted flexibly having regard to the locality, the project and the wider context…", there is considered to be no need to amend them for the purposes of this assessment.

In the final column, the initial noise risk assessment is aligned with pre-planning application guidance that highlights the increasing importance of good acoustic design as the noise risk increases.

**Table 2.1: Stage 1 initial site noise risk assessment (as per ProPG Figure 1)**

| Noise risk assessment | | Potential effect without noise mitigation | Pre-planning application advice |
|---|---|---|---|
| Indicative Daytime Noise Levels $L_{Aeq,16h}$ | Indicative Night-time Noise Levels $L_{Aeq,8h}$ | | |
| High | | Increasing risk of adverse effect | High noise levels indicate that there is an increased risk that development may be refused on noise grounds. This risk may be reduced by following a good acoustic design process that is demonstrated in a detailed ADS. Applicants are strongly advised to seek expert advice.<br><br>As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development.<br><br>At low noise levels, the site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development. |
| 70 dB | 60 dB | | |
| Medium | | | |
| 65 dB | 55 dB | | |
| 60 dB | 50 dB | | |
| Low | | | |
| 55 dB | 45 dB | | |
| 50 dB | 40 dB | | |
| Negligible | | No adverse effect | These noise levels indicate that the development site is likely to be acceptable from a noise perspective, and the application need not normally be delayed on noise grounds. |

**Notes:**

a. Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.
b. Indicative noise levels are the combined free-field noise level from all sources of transport noise and may also include industrial/commercial noise where this is present but is "not dominant".
c. $L_{Aeq,16h}$ is for daytime 0700 – 2300, $L_{Aeq,8h}$ is for night-time 2300 – 0700.
d. An indication that there may be more than 10 noise events at night (2300 – 0700) with $L_{Amax,F}$ > 60 dB means the site should not be regarded as negligible risk.

ProPG states that "It is important that the assessment of noise risk at a proposed residential development site is not the basis for the eventual recommendation to the decision maker". Though, presumably, this would be acceptable for sites/noise levels deemed negligible risk (when a Stage 2 assessment or ADS would not normally be required).

It is noted that the categories (negligible, low, medium, and high) do not necessarily correspond with a given threshold. This is perhaps understandable since these may vary in practice due to various acoustic and non-acoustic factors (which may vary from site to site); however, it is not helpful when it comes to consistently determining the degree of risk.

To establish appropriate thresholds, it is initially reasonable to use the table above, where 50 dB and 40 dB denote the thresholds between negligible and low for day and night-time periods, respectively. As elaborated later, a daytime level of 50 dB marks the lower limit of the criteria range applied to external amenity areas. The equivalent internal level, assuming a window is partially open (resulting in a 10-15 dB reduction), would be 35-40 dB, consistent with relevant criteria discussed subsequently. A similar rationale applies to the nighttime period; however, given that the day and night internal criteria differ by only 5 dB (as shown later), and the external thresholds differ by 10 dB, the external night threshold is relatively more stringent compared to the daytime equivalent.

Applying a banding of 10 dB results in the following thresholds in Table 2.2, which correspond well with the ProPG table reproduced above.

**Table 2.2: Interpretation of the Level 1 initial site noise risk assessment thresholds**

| Noise risk category | $L_{Aeq,16h}$ (07-23) | $L_{Aeq,8h}$ (23-07) | $L_{AFmax}$ (23-07) | Level 2 assessment? | Pre-planning application advice |
|---|---|---|---|---|---|
| High | > 70 dB | > 60 dB | > 10 events > 60 dB | Required | "…an increased risk that development may be refused on noise grounds. This risk may be reduced by following a good acoustic design process…" |
| Medium | 61 – 70 dB | 51 – 60 dB | | | "…application may be refused unless a good acoustic design process is followed and is demonstrated… how the adverse impacts of noise will be mitigated and minimised, and… a significant adverse noise impact will be avoided…" |
| Low | 51 – 60 dB | 41 – 50 dB | | | "…the site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed…" |
| Negligible | ≤ 50 dB | ≤ 40 dB | Less than the above | Not normally required | "…the development site is likely to be acceptable from a noise perspective, and the application need not normally be delayed on noise grounds." |

As noted above, the rating or categorisation at this stage is not to be taken as the final word on the site, but rather an initial guide as to the degree of measures likely to be required to achieve an acceptable development.

ProPG defines 'Good Acoustic Design' as achieving internal target levels with open windows in most properties. If this is not possible, assess noise with windows closed, but ensure that any façade openings used for ventilation are assessed as "open" and meet internal $L_{Aeq}$ target levels.

Note 7 allows relaxation of internal $L_{Aeq,T}$ target levels by up to 5 dB if development is necessary despite high external noise, while exceeding these levels by more than 10 dB is usually deemed unacceptable. Developers must minimize the number of affected rooms and avoid frequent "unacceptable" noise levels. If levels exceed WHO guidelines significantly, alternative ventilation or overheating control may be needed.

**Stage 2: Full Assessment**

The requirements of the ProPG Stage 2: Full Assessment are covered later in this report.

## 2.4 British Standard 8233

British Standard BS 8233:2014: '*Guidance on sound insulation and noise reduction for buildings*' (The British Standards Institution, 2014) provides guideline values for internal noise levels within a number of building types including residential dwellings.

In general, for steady external noise sources, it is desirable that the internal ambient noise level does not exceed the guideline values in Table 2.3:

**Table 2.3: British Standard 8233 indoor noise levels**

| Activity | Location | Daytime (07:00 – 23:00 hours) | Night-time (23:00 – 07:00 hours) |
|---|---|---|---|
| Resting | Living room | 35 dB $L_{Aeq,\ 16hour}$ | - |
| Dining | Dining room/area | 40 dB $L_{Aeq,\ 16hour}$ | - |
| Sleeping (daytime resting) | Bedroom | 35 dB $L_{Aeq,\ 16hour}$ | 30 dB $L_{Aeq,\ 8hour}$ |

In respect of external noise levels, the guidance in BS 8233:2014 suggests that "it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments". BS 8233:2014 however acknowledges that "these guideline values are not achievable in all circumstances where development might be desirable", and that "…a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient

use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces but should not be prohibited".

In respect of balconies, roof gardens and terraces, BS 8233:2014 states that "In these locations, specification of noise limits is not necessarily appropriate. Small balconies may be included for uses such as drying, washing or growing pot plants, and noise limits should not be necessary for these uses; however, the general guidance on noise in amenity space is still appropriate for larger balconies, roof gardens and terraces, which might be intended to be used for relaxation. In high-noise areas, consideration should be given to protecting these areas by screening or building design to achieve the lowest practicable levels. Achieving levels of 55 dB $L_{Aeq,T}$ or less might not be possible at the outer edge of these areas but should be achievable in some areas of the space".

BS 8233:2014 suggests that proposed development within noisy environments should be designed to ensure that the recommended internal design standards are achieved, and that noise levels in external amenity areas are designed to effectively control and reduce noise levels; although it acknowledges that in certain circumstances meeting the external design recommendations may not be feasible, or necessary, especially where the provision of such spaces is desirable for other technical, planning or policy reasons.

## 2.5 World Health Organisation Guidelines

The following guideline values for community ambient noise levels in specific environments are presented in the World Health Organization (WHO) Guidelines for Community Noise.

**Table 2.4: WHO Guideline noise values**

| Specific Environment | Critical Health Effect(s) | dB $L_{Aeq,T}$ | Time Base hours | dB $L_{Amax,F}$ |
|---|---|---|---|---|
| Dwelling indoors | Speech intelligibility and moderate annoyance, daytime and evening | 35 | 16 | - |
| Inside bedrooms | Sleep disturbance, night-time | 30 | 8 | 45 |

The 45 dB $L_{Amax,F}$ criterion applies to "single sound events" within bedrooms at night. This guideline is generally interpreted as the value that individual noise events should not normally exceed more than 10 times a night.

# 3 SITE DESCRIPTION

## 3.1 Existing Site

The proposed development site is located on land to the north of Balcombe Road, Haywards Heath TH16 1XN. The site is predominately suburban in nature. The site is bound by Borde Hill Estate to the north, residences on Fairfield Way, Orchard Way and Orchard Close to the east, Balcombe Road and the residences on it to the south and Borde Hill Lane to the west.

The nearby properties are residential in nature. The main noise sources affecting the proposed development are road traffic on Balcombe Road and Borde Hill Lane, and railway traffic from the railway line approximately 150 m to the east of site.

The proposed development site, alongside the measurement locations used in the baseline noise survey can be seen on Figure 3.1 below.

**Figure 3.1: Aerial image of the proposed development site**


Image Credit: Google Earth

## 3.2 Proposed Development

The proposed development consists of circa. 125 residential dwellings, consisting of detached and semi-detached properties, alongside a new internal road network, alterations to the adjacent roundabout and associated landscaping. The proposed development can be seen on Figure 3.2 below. (drawing ref.: 2508/SK.04).

**Figure 3.2: Site plan drawing showing the proposed development**

# 4 BASELINE NOISE SURVEY

A baseline noise survey was conducted between 05/12/2025 – 10/12/2025 to assess the existing noise environment on site and the surrounding area. Two sound level meters were deployed on the site and the locations of these can be seen on Figure 3.1. These measurement positions were chosen to capture the noise levels from nearby road and rail traffic sources as well as assess the spatial spread of sound across the proposed development site.

All sound level meters were placed in free field conditions (more than 3.5 m away from any reflecting surfaces, other than the ground). Data were collected in 1/3 octave bands in 15-minute and 100 ms intervals, and post-processed into all required noise indices.

## 4.1 Instrumentation

All measurements were undertaken by a consultant certified as competent in environmental monitoring. The sound level meters conform to the Class 1 requirements of BS EN 61672-1:2013. The calibrators used conformed to the Class 1 requirements of BS EN IEC 60942:2018. Details of the monitoring equipment, including calibration information, can be found in Table 4.1 below. All equipment's calibration certificates are available on request. Equipment was calibrated before and after the survey with no serious drift (≥±0.5 dB) detected.

**Table 4.1: Survey equipment information**

| Equipment ID | Make & Model | Serial No. | Lab Calibration Date | Field Calibration Before Survey, dB (Reference Level = 94.0 dB) | Field Calibration After Survey, dB (Reference Level = 94.0 dB) |
|---|---|---|---|---|---|
| AA-SLM-31 | Rion NL-53 | 00730385 | 29/01/2024 | 93.8 | 93.8 |
| AA-SLM-40 | Rion NL-53 | 00852464 | 22/10/2025 | 94.0 | 94.0 |
| AA-CAL-10 | Rion NC-74 | 34256521 | 10/09/2025 | N/A | N/A |
| AA-CAL-25 | Rion NC-74 | 34857005 | 22/10/2025 | N/A | N/A |

## 4.2 Weather Conditions

Weather conditions were assessed on site during deployment and collection of all survey equipment. This showed that at time of deployment or collection there was no adverse meteorological conditions that could adversely affect the acoustic survey.

Meteorological data from the survey period was obtained from a nearby weather station (ID: IHAYWA63) on Weather Underground (www.wunderground.com), an online historical data repository. This data was analysed for periods of rain or with windspeeds greater than 5 $ms^{-1}$. This revealed no periods of adverse windspeed or rain.

## 4.3 On-Site Observations

At UP1, on deployment, the noise climate was reasonably loud. It was dominated by road traffic on Balcombe Road and Borde Hill Lane. The traffic was fairly regular, travelling at a moderate speed and close by to the noise monitor so was quite loud. There was also bird song and wind noise present but was only audible during lulls in traffic flow. On collection, the noise sources were the same and levels similar.

At UP2, on deployment, the noise climate was quieter than UP1. There is traffic noise audible from Balcombe Road and Borde Hill Lane, quieter than at UP1 but still clearly audible, there was also faint aviation noise overhead, bird song, and wind noise present. The single loudest sound was the railway traffic from the nearby railway line, however this was reasonably infrequent.  On collection, the noise sources were the same and levels similar.

## 4.4 Survey Results

A summary of the site-wide noise survey results can be found in Table 4.2 below. The quoted $L_{Aeq,T}$ values are the arithmetic average of the daytime $L_{Aeq,16hr}$ and night-time $L_{Aeq,8hr}$ levels, respectively. The quoted 10th highest $L_{Amax,2min}$ levels are derived from a representative night-time period from the survey, in line with the guidance contained in the ProPG and BS 8233:2014.

**Table 4.2: Survey Data**

| Measurement Location | Average Daytime (07:00 – 23:00 hours) Noise Level, $L_{Aeq,16}$, dB | Average Night-Time (23:00 – 07:00 hours) Noise Level, $L_{Aeq,8hr}$, dB | 10th Highest Night-time (23:00 – 07:00 hours) $L_{Amax,2min}$, dB |
|---|---|---|---|
| **UP1** | 60 | 54 | 70 |
| **UP2** | 48 | 43 | 62 |

# 5 PREDICTING ON SITE NOISE LEVELS

Representative sound levels across the site have been determined using a combination of the noise data collected from the survey and a 3D noise model using DaraKustik's CadnaA (2025) noise modelling software.

Using noise survey data from the measurement position closest to the road (UP1), noise levels from Balcombe Road/ Borde Hill Lane have been measured. This then allowed the prediction of noise levels due to Balcombe Road / Borde Hill Lane across the proposed development site for each measurement period. The same process was followed for the railway to the east of site, using the measurement position UP2. These sources were then used in combination to determine the overall noise levels affecting the proposed development site.

Predicted on site noise levels for the day and night-time periods, and predicted 10th highest night-time maximum levels can be seen on Figure 5.1, Figure 5.2 and Figure 5.3, respectively.

**Figure 5.1: Predicted daytime noise levels**

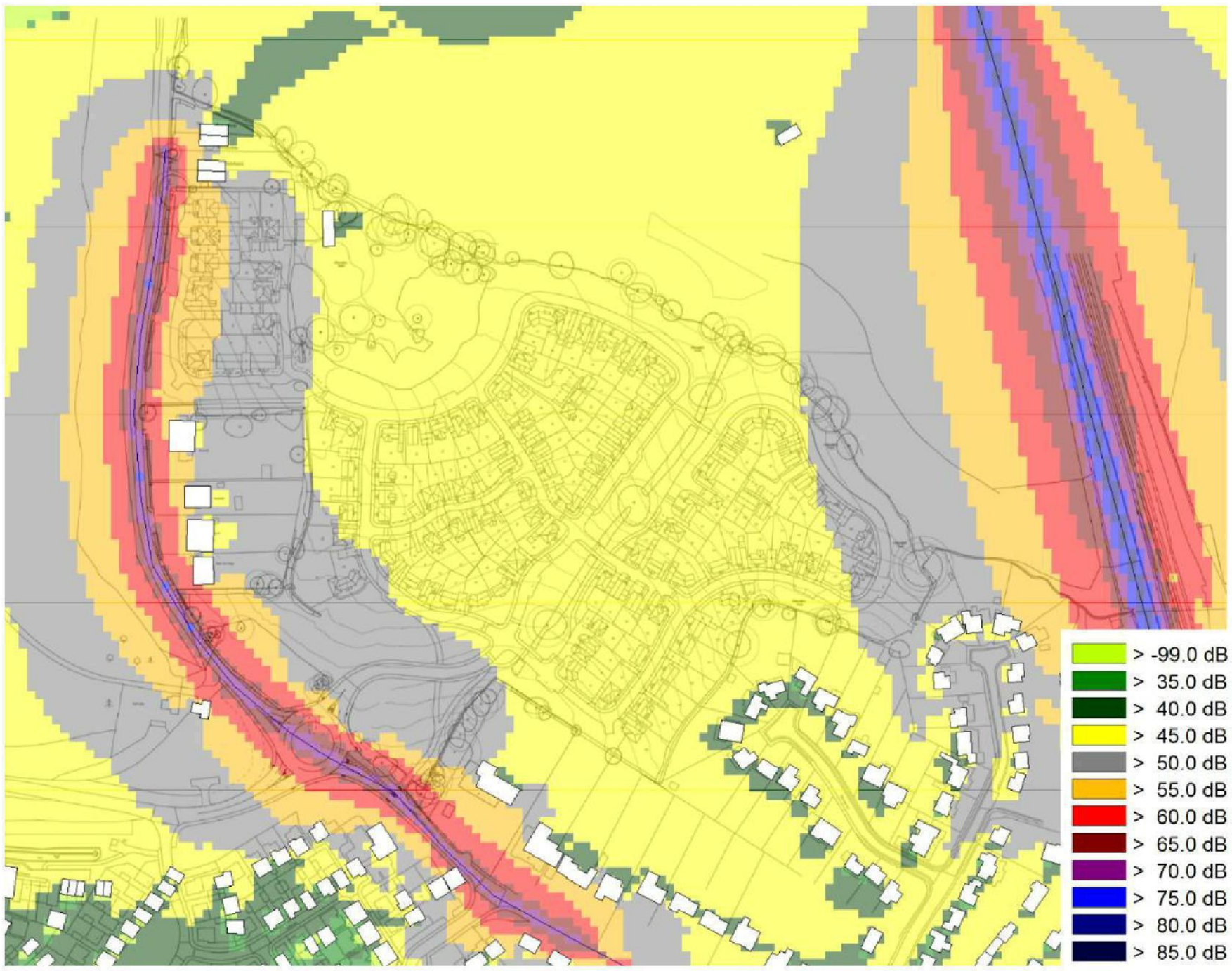



**Figure 5.2: Predicted night-time noise levels**

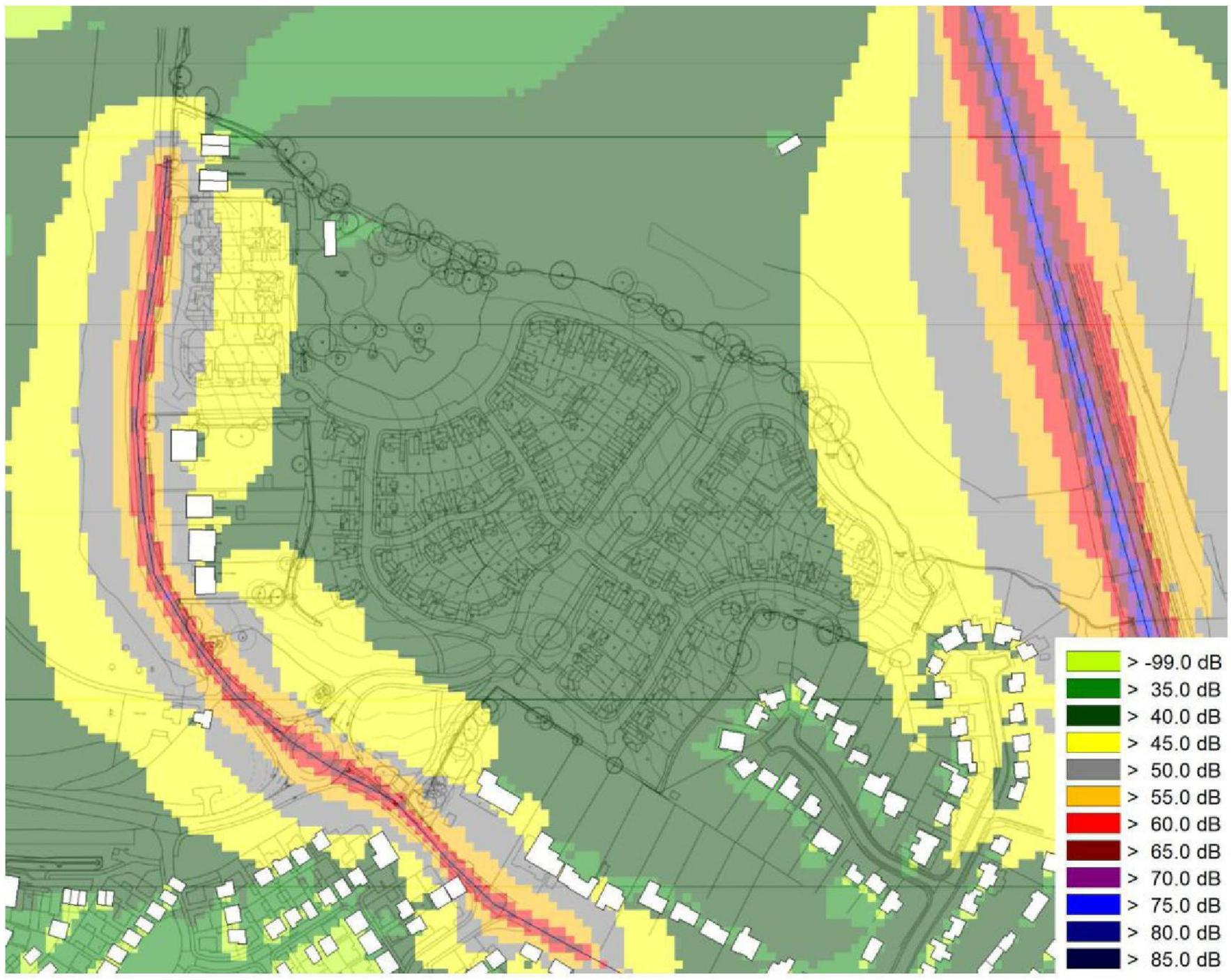
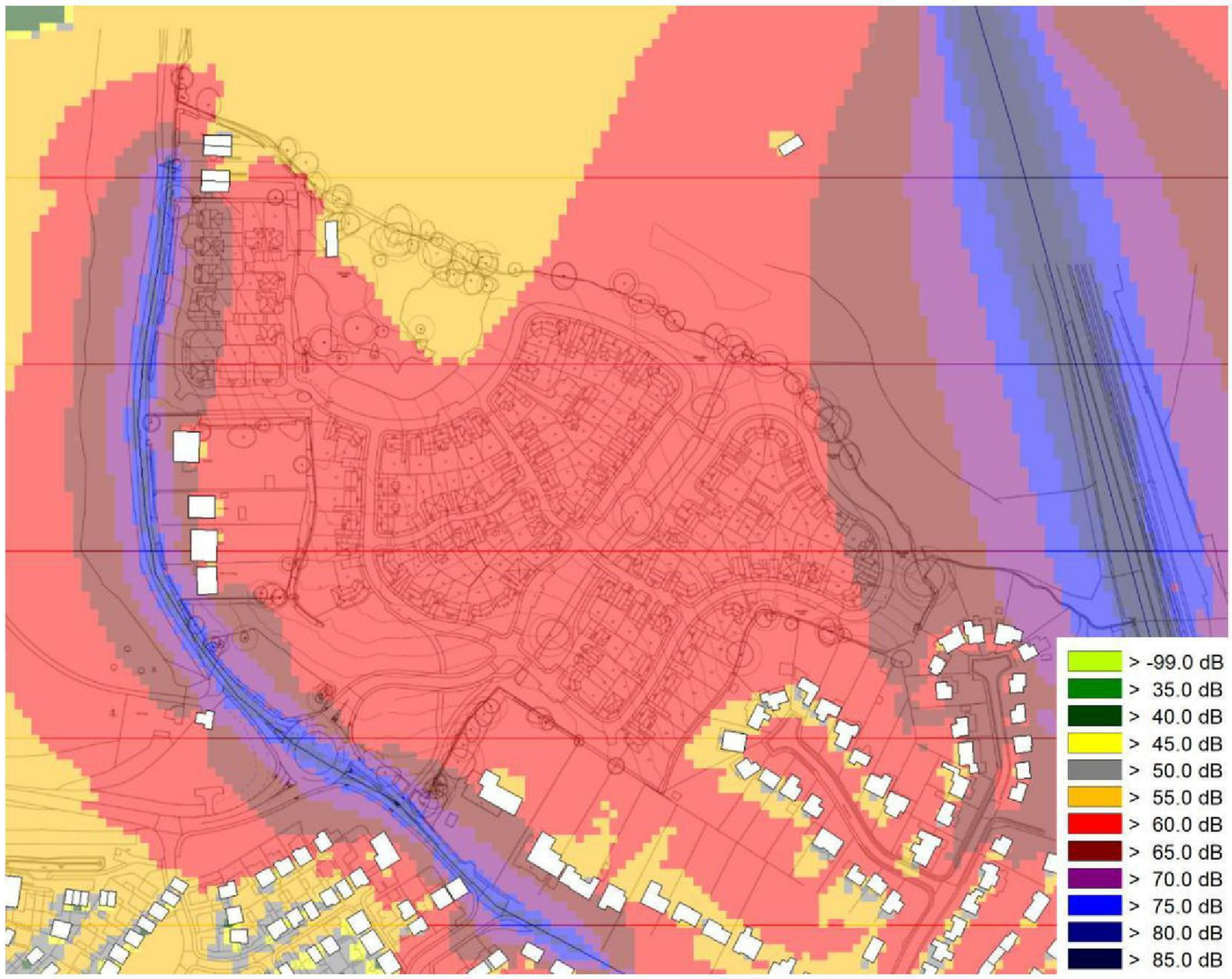


**Figure 5.3: Predicted 10th highest night-time maximum level**




It is proposed, for the purpose of this assessment, to assess the proposed development site in three sections. Section 1, consists of the most exposed properties closest to Borde Hill Lane on the western edge of the site (Dwellings 1 – 9), contained within the orange contour of Figure 5.1.

Section 2 is made up of the properties directly to the east of the first section (Dwellings 10 – 16) and the properties on the east of the site most exposed to railway noise (Dwellings 102 – 108 and Dwellings 21 – 24) i.e., all proposed dwellings contained in the grey contour on Figure 5.1.

Section 3 consists of the remainder of the properties in the centre of the site, all contained within the yellow contour on Figure 5.1. The assessment levels used for each section are shown in Table 5.1 below.

**Table 5.1: Assessment noise levels**

| Location | Daytime | Night-time | 10th Highest $L_{AFmax,2min}$ |
|---|---|---|---|
| Section 1 (Dwellings 1 – 9) | 55 | 50 | 70 |
| Section 2 (Dwellings 10 – 16, 21 – 24, 102 - 108) | 50 | 45 | 65 |
| Section 3 (Remainder of Dwellings) | 45 | 40 | 60 |

# 6 ASSESSMENT OF LOCAL PLANNING AUTHORITY CRITERIA

As stated in the Planning Noise Advisory Document: Sussex 2023, assessments should be undertaken in line with the guidance contained in the Professional Planning Guidance on Planning and Noise – New Residential Development (ProPG) and internal noise levels in habitable spaces should meet the criteria contained in BS 8233:2014 and the World Health Organisation's Night Noise Guidelines for Europe (2009). These criteria are detailed in Table 6.1 below.

**Table 6.1: Target internal noise level**

| Time Period / Noise Index | Internal Noise Level Criterion, dB(A) |
|---|---|
| Daytime $L_{Aeq,16hr}$ | 35 |
| Night-time $L_{Aeq,8hr}$ | 30 |
| 10th Highest Night-time $L_{AFmax,2min}$ | 45 |

# 7 PROPG STAGE 1 RISK ASSESSMENT

An initial site noise risk assessment has been undertaken in line with the guidance contained in the ProPG and is detailed in Table 7.1 below.

**Table 7.1: ProPG stage 1 risk assessment**

| Site Section (Representative Measurement Position) | Time Period | Noise Level, dB(A) | ProPG Noise Risk Category |
|---|---|---|---|
| Section 1 | Daytime $L_{Aeq,16hr}$ (07:00 – 23:00) | 55 | Low |
| | Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00) | 50 | Low |
| | 10th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00) | 70 | - |
| Section 2 | Daytime $L_{Aeq,16hr}$ (07:00 – 23:00) | 50 | Negligible |
| | Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00) | 45 | Low |
| | 10th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00) | 65 | - |
| Section 3 | Daytime $L_{Aeq,16hr}$ (07:00 – 23:00) | 45 | Negligible |
| | Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00) | 40 | Negligible |
| | 10th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00) | 60 | - |

Therefore, as some of the site falls into the 'low' risk category, a Stage 2 risk assessment is required.

# 8 PROPG STAGE 2 RISK ASSESSMENT

## 8.1 Element 1 – Good Acoustic Design Process

As presented in the ProPG, Section 5 of BS 8233:2014 contains guidance on the sequence of stages to be followed in the planning and early acoustic design of a new development. Section 5.4 of BS 8233:2014 outlines a general approach to determining appropriate noise control measures including the following suggested steps (which may be iterative):

i. Check the feasibility of reducing noise levels and / or relocating noise sources;
ii. Consider options for planning the site of building layout;
iii. Consider the orientation of the proposed building(s);
iv. Select construction types and methods for meeting building performance requirements;
v. Examine the effects of noise control measures on the requirements for ventilation, fire regulation, health and safety, cost, DVM (Construction, design and management) etc.; and
vi. Assess the viability of alternative solutions.

The designer should then decide which of the following options can be applied to reduce noise levels:

i. Quietening or removing the source of noise;
ii. Attenuating the sound on its path to the receiver;
iii. Obstructing the sound path between source and receiver;
iv. Improving the sound insulation of the building envelope; and
v. Using agreements to manage noise.

The main noise sources affecting the proposed development are road and rail traffic. These sound sources cannot be moved, removed or have their noise levels reduced easily and as such, good acoustic design should be achieved using the other methods listed above.

Based on the latest plans, there isn't much space to rearrange the locations of dwellings, however, as there are only a few dwellings in the most exposed sections (section 1 and 2), if these dwellings could be moved elsewhere on site, or moved back from the road or railway, the overall noise impact on these premises can be reduced.

As the site is predominately affected by road traffic from Balcombe Road / Borde Hill Lane and nearby railway traffic, nearby properties will have a higher noise impact on one side of the building. Therefore, it is recommended that noise sensitive rooms are orientated within the dwelling such that they are on the opposite side of the building to it's nearest noise source (i.e., for properties located close to Balcombe Road / Borde Hill Lane, noise sensitive rooms should be located on the eastern side of the building) wherever possible.

Noise levels due to road traffic could be reduced further still with the introduction of an acoustic barrier along the western edge of the site bordering Balcombe Road / Borde Hill Lane. Similarly, a barrier on the eastern / north eastern edge of the site could help reduce noise levels due to the nearby railway. Any such fence should be a 2 m high, close boarded acoustic fence with a superficial mass of 15 $kgm^{-2}$.

## 8.2 Element 2 – Internal Noise Level Guidelines

ProPG refers to guidance on acceptable internal noise levels in BS 8233:2014 to ensure that the amenity of residents is protected. These values are shown in Table 2.3.

For the purposes of this initial assessment, and due to the absence of General Arrangement and elevation drawings during this outline application stage, we have assumed the sound reduction provided by a partially open bedroom window which is 1 m high x 1.25 m wide and is open by 30 ° provides approximately 13 dB reduction. The resultant noise level for each section based on this reduction is shown in Table 8.1 below.

**Table 8.1: Internal noise level assessment**

| Site Section | Time Period | Internal Noise Level, dB(A) | Difference Between Level and Target, dB |
|---|---|---|---|
| Section 1 | Daytime $L_{Aeq,16hr}$ (07:00 – 23:00) | 42 | +7 |
| | Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00) | 37 | +7 |
| | 10th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00) | 57 | +12 |
| Section 2 | Daytime $L_{Aeq,16hr}$ (07:00 – 23:00) | 37 | +2 |
| | Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00) | 32 | +2 |
| | 10th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00) | 52 | +7 |
| Section 3 | Daytime $L_{Aeq,16hr}$ (07:00 – 23:00) | 32 | -3 |
| | Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00) | 27 | -3 |
| | 10th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00) | 47 | +2 |

As can be seen from the above, target levels are not met at some locations for some time periods. There is an exceedance of the target internal noise level during the day and night in section 1 and 2,and by the 10th highest $L_{AFmax,2min}$ levels in all sections. As such, open windows cannot be relied upon to provide ventilation and control overheating at every single property at all times without potential noise impact. However, it should be noted that as the vast majority of the site is contained within section 3, most of the proposed dwellings meet day and night-time $L_{Aeq,T}$ target internal noise level values and only slightly exceed the 10th highest $L_{AFmax}$ target internal noise level criteria.

### 8.2.1 Assumptions

Drawings Used

Our assessment has been based on the following drawings provided by Paul Hewett R.I.B.A (architects) and SDP (client).

**Table 8.2: Assessment drawings**

| Drawing Title | Drawing Number | Revision | Date |
|---|---|---|---|
| Illustrative Coloured Masterplan | 2513/PL..08 | Rev.N | October 2025 |

Room Reverberation

In order to calculate internal ambient noise levels within habitable rooms, our analysis has assumed typical reverberation times in furnished bedrooms and living rooms, which have been based on a flat reverberation time of 0.5 seconds between 125 Hz and 4 kHz.

External Noise Levels

An assessment of the external building fabric elements has been undertaken based on the unattended spectral data of $L_{Aeq,T}$ and $L_{AFmax}$ levels measured during daytime and night-time periods. Guidance is given in the following sections regarding suitable glazing, ventilation, and external wall configurations to achieve the

required internal ambient noise levels within the proposed dwellings. Calculations have been undertaken following the general method set out in BS EN 12354-3:2017.

Façade Design

Details of the construction of the external façade buildup are as yet undefined. Therefore, in order to provide a robust assessment a worst-case assumption has been made for the minimum sound reduction provided by a wall construction. The outline façade design required to adequately control noise levels incident on the façades of the proposed development is detailed in Table 8.3 below.

It should be noted that this façade design is indicative and subject to change. However, the façade specification detailed is considered standard and due to the relatively low noise levels in the area, most façade designs will reduce noise to acceptable levels.

The below minimum sound reduction performance has been assumed in our calculations for all dwellings.

**Table 8.3: Facade Elements**

| Façade Element | $R_W$ / $R_W + C_{tr}$, dB ($D_{n,e,w}$ / $D_{n,e,w} + C_{tr}$ for ventilator) |
|---|---|
| Brick/Block Cavity Wall | 52 / 48 |
| Acoustically-rated standard thermal double-glazing configuration (e.g., 4mm glass / 12 mm cavity / 4 mm glass | 31 / 26 |
| Standard acoustically-rated through-frame trickle ventilator with an indirect air path | 31 / 30 |

It should be noted that the above façade design is indicative and detailed façade design does not fall under the purview of this report.

## 8.3 Element 3 – External Amenity Area Noise Assessment

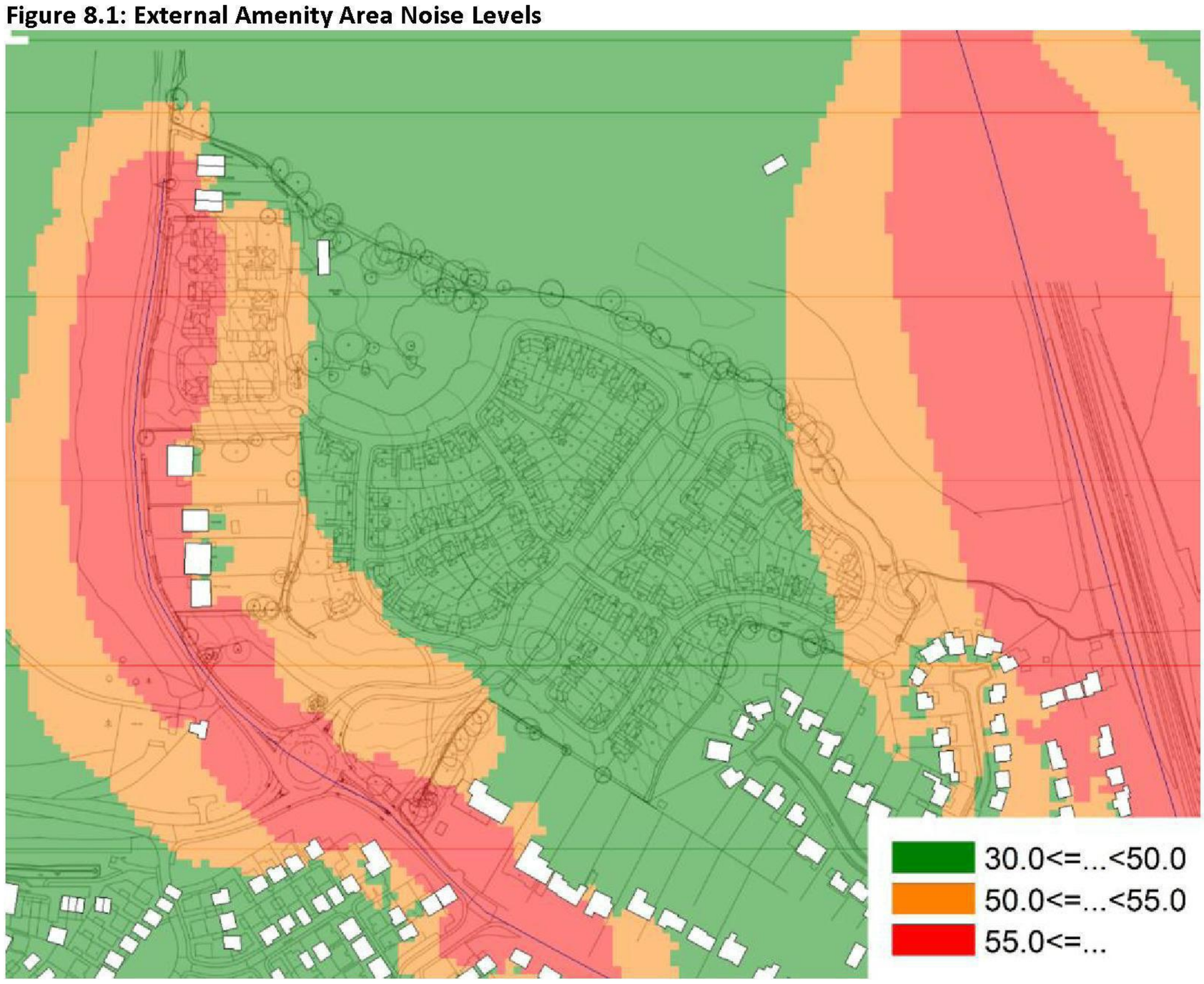
As detailed above, BS 8233:2014 states that:

*"It is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments".*

As can be seen on Figure 8.1 below, none of the external amenity areas in the proposed development site will be subjected to daytime noise levels higher than the upper guideline value of 55 dB $L_{Aeq,T}$ in their entirety.

All external amenity areas aside from those in Section 1 experience noise levels below the upper guideline value of 55 dB $L_{Aeq,16hr}$. Whilst some of the external amenity areas in Section 1 experience levels higher than the upper guideline value this is only part of the amenity space of each property, and the remainder experiences noise levels below the lower guideline value. Furthermore, once screening from buildings and garden fences has been accounted for, the levels will be reduced further.

**Figure 8.1: External Amenity Area Noise Levels**




## 8.4 Element 4 – Assessment of Other Relevant Issues: Overheating

### 8.4.1 Overheating: Approved Document O

Overheating: Approved Document O (AD-O) of the Building Regulations has been used to set appropriate acoustic criteria for bedrooms during the overheating condition, as defined by the regulations. AD-O provides the following guidance where open windows are used to mitigate the overheating condition:

"Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits:

a) 40 dB $L_{Aeq,T}$ averaged over 8 hours (between 11pm and 7am).
b) 55 dB $L_{AFmax,}$ more than 10 times a night (between 11pm and 7am).

### 8.4.2 Façade Incident Noise Levels

For the purposes of this initial assessment, and due to the absence of GA and elevation drawings during this outline application stage, we have assumed the sound reduction provided by a partially open bedroom window, which is 1m high x 1.25m wide and is open by 30°, is 13 dB.

Therefore, it can be reasonably assumed that windows should be closed during the night-time period when the façade incident noise levels of the proposed development are greater than 53 dB $L_{Aeq,8hr}$ and 68 dB $L_{AFmax}$ more than 10 times a night.

As shown in Table 8.4 below, a majority of the site should not experience façade-incident noise levels this high. Therefore, it can be assumed that open windows can be used for cooling during sleeping hours for a majority of site, aside from the dwellings in Section 1, which experiences a slight exceedance of the $L_{AFmax}$ criteria.

**Table 8.4: Ventilation assessment**

| Site Section | Night-time Façade-Incident Noise Level (dB) | Calculated Internal Ambient Noise Level with Partially Open Window (dB) |
|---|---|---|
| Section 1 | $L_{Aeq,8hr}$ = 50 | $L_{Aeq,8hr}$ = 37 |
| | $L_{AFmax,2min}$ = 70 | $L_{AFmax,2min}$ = 57 |
| Section 2 | $L_{Aeq,8hr}$ = 45 | $L_{Aeq,8hr}$ = 32 |
| | $L_{AFmax,2min}$ = 65 | $L_{AFmax,2min}$ = 52 |
| Section 3 | $L_{Aeq,8hr}$ = 40 | $L_{Aeq,8hr}$ = 27 |
| | $L_{AFmax,2min}$ = 60 | $L_{AFmax,2min}$ = 47 |

The above assessment is indicative, therefore it is recommended that a detailed overheating and noise assessment is undertaken during the detailed design stages, so it can be demonstrated that the noise limits of Approved Document O can be achieved.

# 9 PLANT NOISE EMISSION LIMITS FOR FUTURE PLANT

At this stage of the development, full details of any proposed external building services equipment (such as air source heat pumps etc.) have not been decided. Therefore, it is not known at this point whether or not an assessment of any such plant is required.

As such, it is proposed that if any external plant is to be used at any of the residential dwellings, plant noise limits should be put in place to ensure that the amenity of future residents is protected. These limits should be based on the representative background sound level at the nearest survey measurement location. The representative background sound level at each measurement location has been derived in line with the guidance contained in BS 4142:2014+A1:2019 *'Methods for Rating and Assessing Industrial and Commercial Sound'*.

BS 4142 states:

> *"The advice is that the background sound level ($L_{A90,T}$) should be derived from continuous measurement of normally not less than 15-minute intervals over the period of interest, and that it should not be the lowest level, but representative of typical conditions at the noise-sensitive receiver(s) relevant to the periods of operation"*

As such, based on statistical analysis of the measured $L_{A90,T}$ levels (shown in Appendix B), the modal average of the $L_{A90,T}$ levels was deemed the most representative for each location and time period. the representative background sound levels which plant noise emission limits can be derived from are shown in Table 9.1 below.

**Table 9.1: Representative $L_{A90,T}$ background sound levels**

| Measurement Location | Daytime (07:00 – 23:00) Plant Noise Emission Limit, dB(A) | Night-time (23:00 – 07:00) Plant Noise Emission Limit, dB(A) |
|---|---|---|
| UP1 | 53 | 32 |
| UP2 | 44 | 33 |

# 10 SUMMARY

Anderson Acoustics Ltd was commissioned by SDP to provide acoustic consultancy services in support of a planning application for a new residential development located to the north of Balcombe Road, Haywards Heath RH16 1PF.

A baseline noise survey was undertaken to assess on-site noise conditions, identify noise sources and determine noise levels affecting the proposed development. The findings of this survey were then used to inform an assessment of the suitability of the site for residential development and determine the appropriate acoustic process to ensure the residential amenity of the future residents are not negatively impacted by local noise sources, in line with the guidance contained in ProPG and local planning policy.

The ProPG Stage 1 risk assessment was undertaken which showed that the site falls into the 'low' risk category. A Stage 2 risk assessment was then undertaken. This showed that, following an appropriate acoustic design process, residential amenity will be protected using a standard façade buildup and the site will be suitable for residential development

As such, there is no reason, with regards to noise, that planning permission should be refused.

# APPENDIX A

## ACOUSTIC TERMINOLOGY

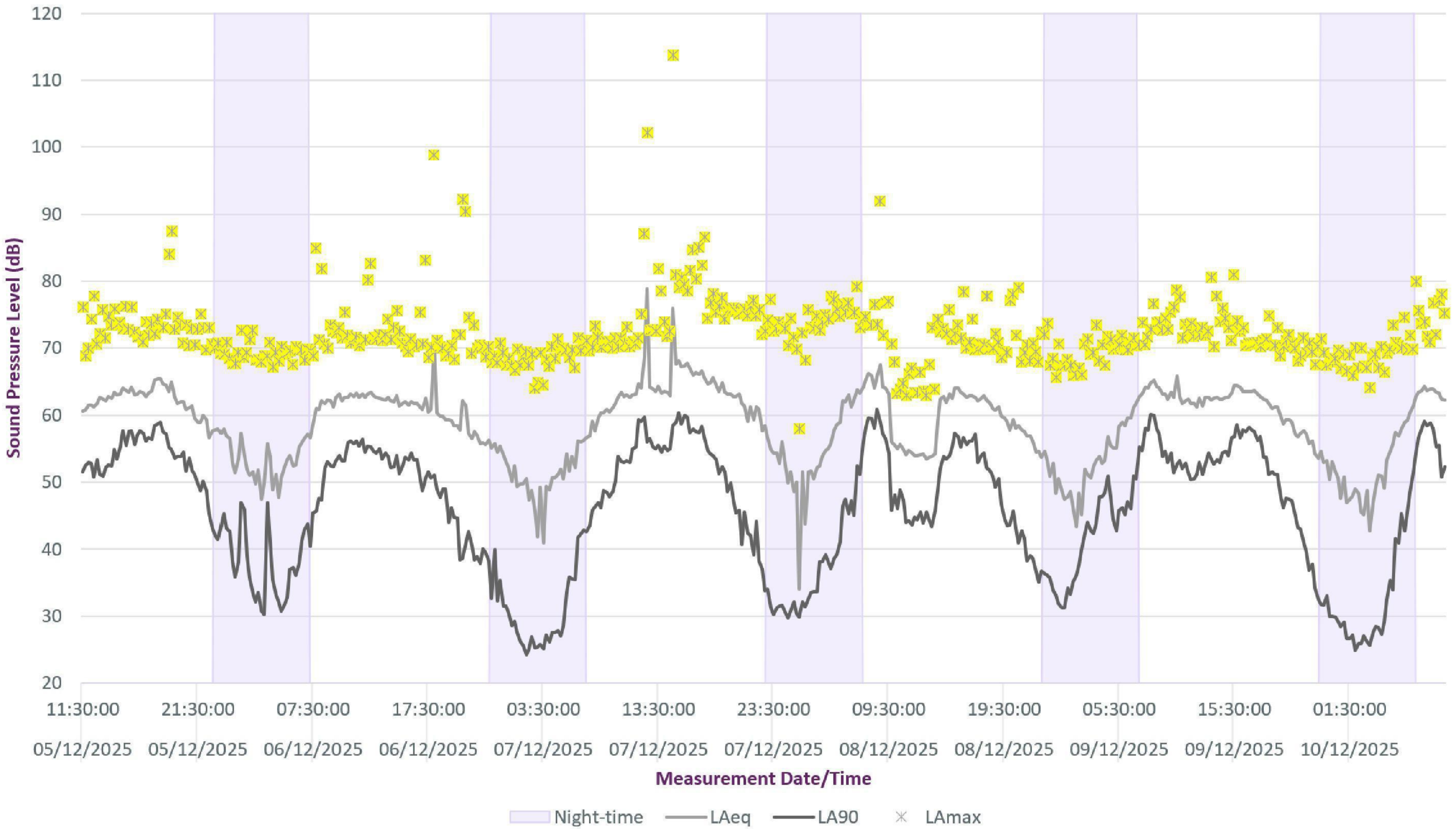
Please visit: https://andersonacoustics.co.uk/resources/acoustics-glossary

# APPENDIX B

## SURVEY DATA

## Sound Survey Time History Graph

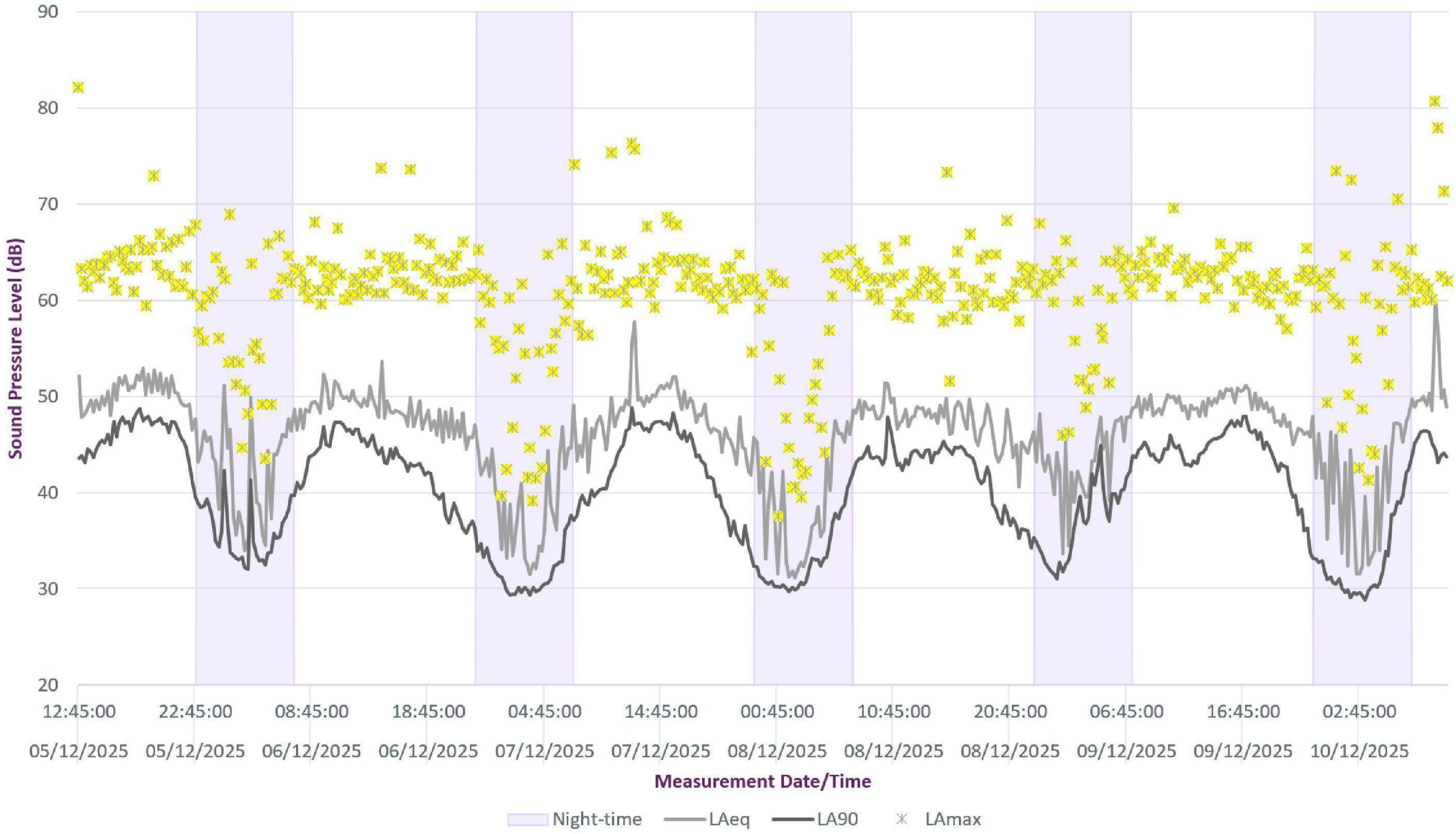
## Measurement Position UP1 - Friday 05 December 2025 to Tuesday 09 December 2025

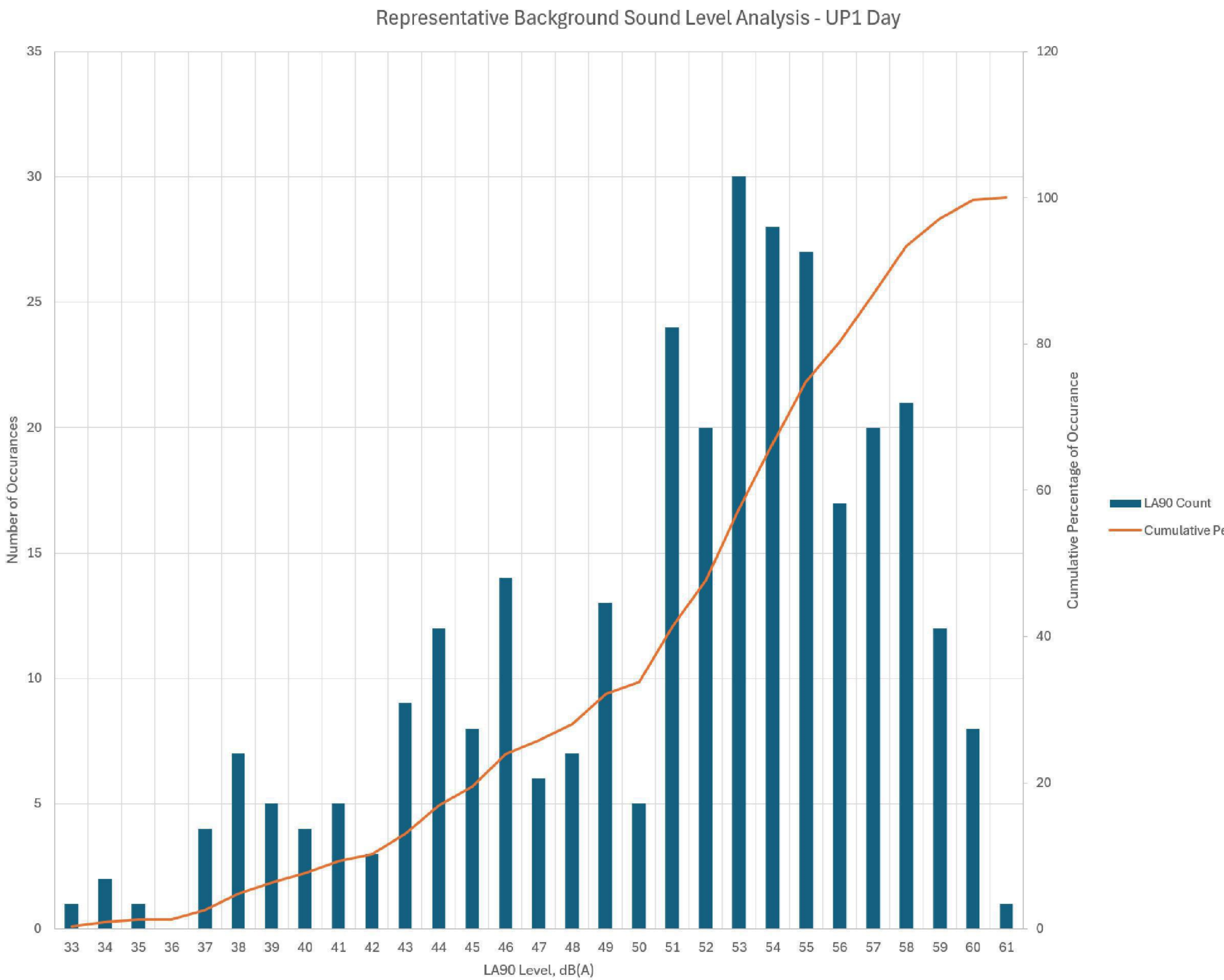


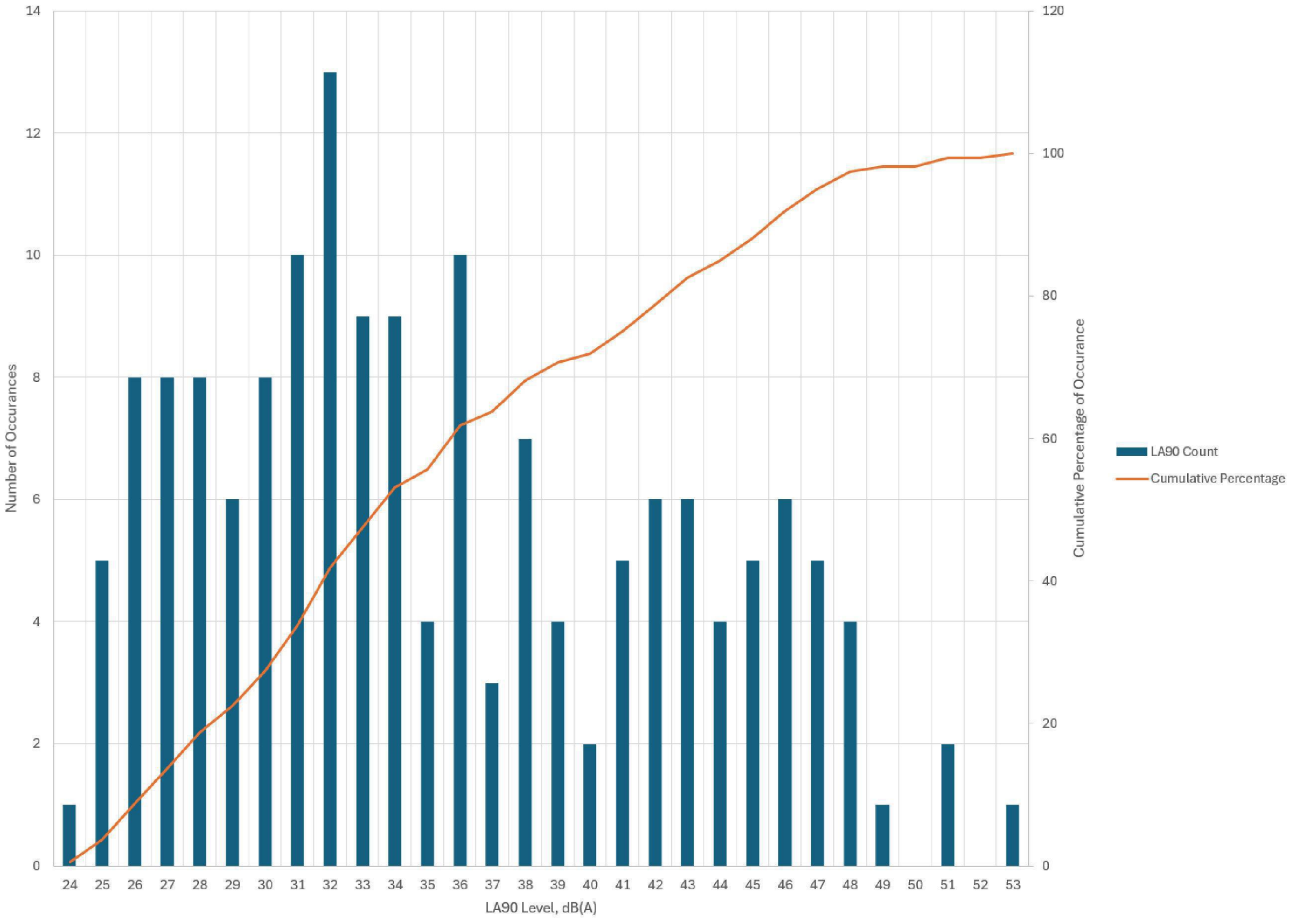
## Sound Survey Time History Graph

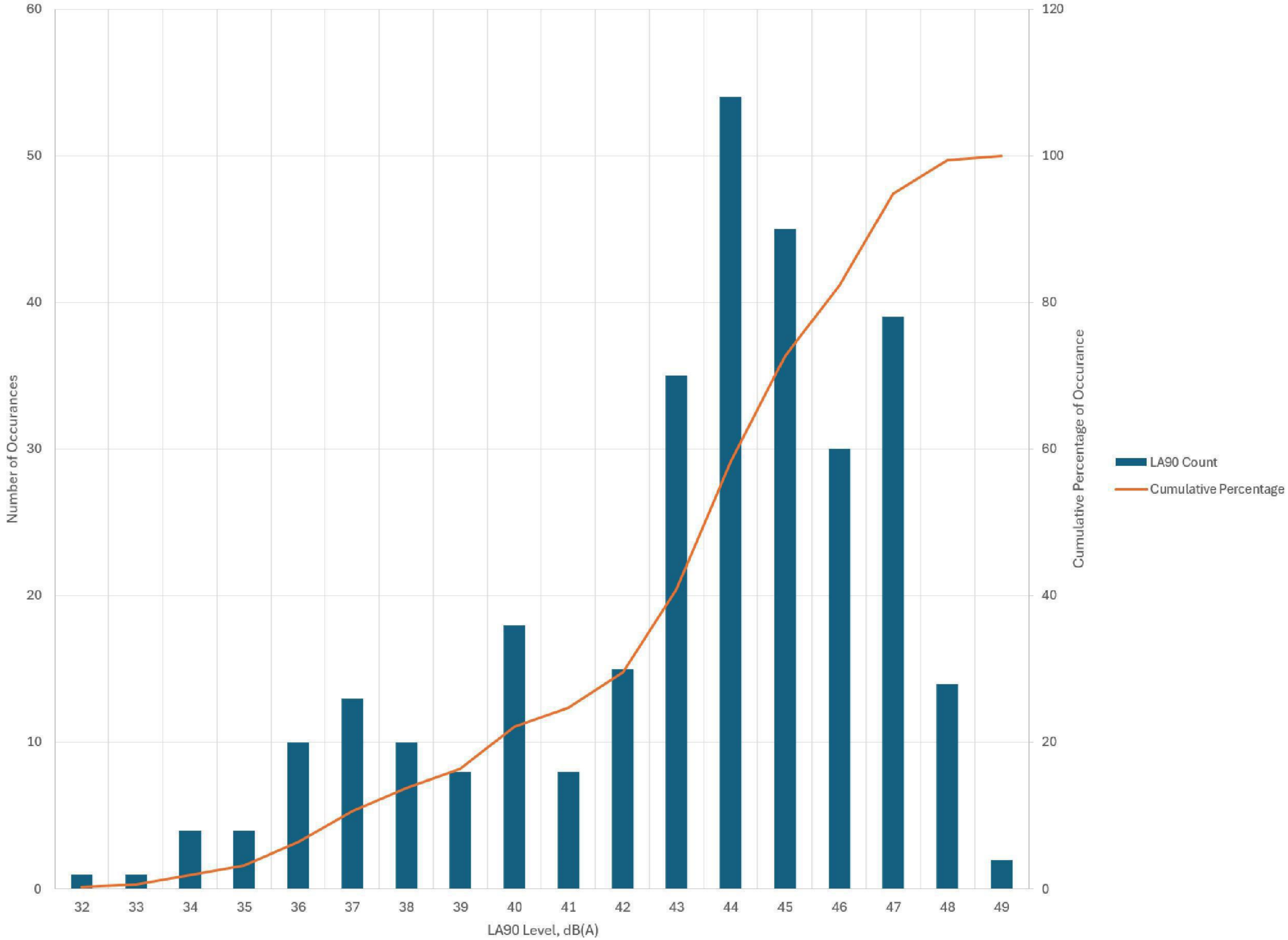
Anderson Acoustics

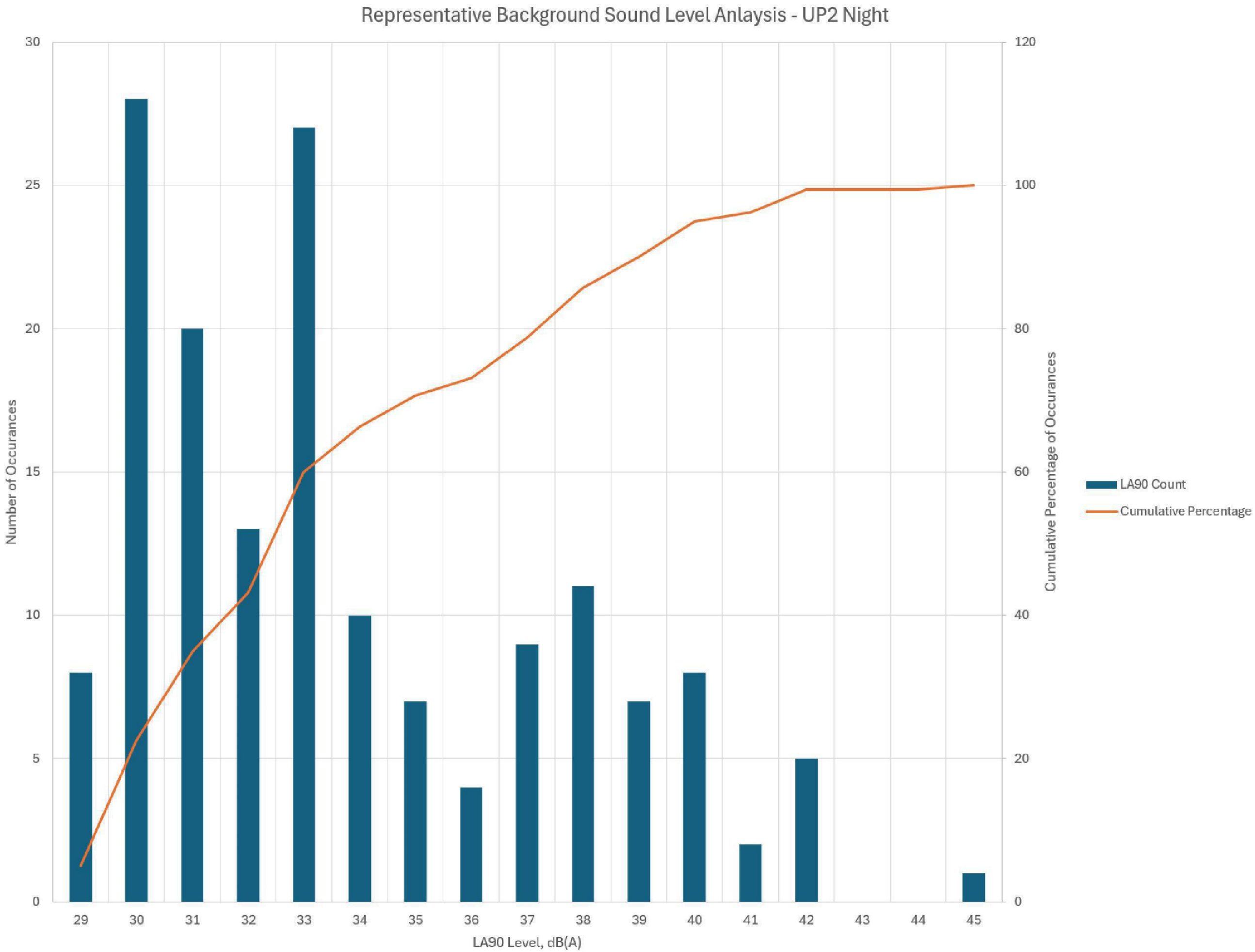
## Measurement Position UP2 - Friday 05 December 2025 to Tuesday 09 December 2025




Representative Background Sound Level Analysis - UP1 Day
Number of Occurances
Cumulative Percentage of Occurance
LA90 Level, dB(A)
LA90 Count
Cumulative Percentage
0
5
10
15
20
25
30
35
0
20
40
60
80
100
120
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61


Representative Background Sound Level Analysis - UP1 Night
Number of Occurances
Cumulative Percentage of Occurance
LA90 Level, dB(A)
LA90 Count
Cumulative Percentage
0
2
4
6
8
10
12
14
0
20
40
60
80
100
120
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53


Representative Background Sound Level Analysis - UP2 Day
Number of Occurances
Cumulative Percentage of Occurance
LA90 Level, dB(A)
LA90 Count
Cumulative Percentage
0
10
20
30
40
50
60
0
20
40
60
80
100
120
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49


Representative Background Sound Level Anlaysis - UP2 Night
Number of Occurances
Cumulative Percentage of Occurances
LA90 Level, dB(A)
LA90 Count
Cumulative Percentage
0
5
10
15
20
25
30
0
20
40
60
80
100
120
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45