LAND NORTH OF BORERS ARMS ROAD, COPTHORNE

FAIRFAX ACQUISITIONS LTD.

OCTOBER 2025

NOISE IMPACT ASSESSMENT
LAND NORTH OF BORERS ARMS ROAD, COPTHORNE

Our Ref: **8481_001R_2-0_BG.DOCX**

Client:	**Fairfax Acquisitions Ltd.** Buncton Barn Buncton Lane Bolney West Sussex RH17 5RE
Report by:	**Anderson Acoustics Ltd** 3 Trafalgar Mews 15-16 Trafalgar Street Brighton BN1 4EZ www.andersonacoustics.co.uk T: 01273 696887
Date:	**27 October 2025**
Project No:	**8481**
Status:	**ISSUE**

Author	**Ben Gray** Acoustic Consultant BSc (Hons), AMIOA		**27 October 2025**
Reviewed	**Callum Brewer** Principal Consultant MSc BSc (Hons) MIOA		**27 October 2025**
Approved	**Callum Brewer** Principal Consultant MSc BSc (Hons) MIOA		**27 October 2025**

REVISION HISTORY

Version	Comments	Changes made by	Approved by
1-0	First issue	BG	CB
2-0	Second Issue	BG	CB

CONTENTS

1 INTRODUCTION

Anderson Acoustics Ltd has been commissioned by Fairfax Acquisitions Ltd. to provide a noise impact assessment to support a planning application for a new residential development located to the north of Borers Arms Road, Copthorne, Crawley, RH10 3LR.

The development consists of circa. 260 new residential dwellings, 1,700 m2 of employment floorspace (use classes E (c)(iii), E(g)(i)(ii)(iii)) , alongside associated landscaping, internal road network and car parking spaces. The site is located within the administrative boundary of Tandridge District Council (TDC).

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 are 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);
- Tandridge District Council Local Plan Part 1: Core Strategy (2008);
- Tandridge District Council Local Plan Part 2: Detailed Policies (2014 – 2029);
- Professional Practice Guidance on Planning & Noise (ProPG);
- British Standard (BS) 8233:2014 *'Guidance on Sound Insulation and Noise Reduction for Buildings'; and*
- British Standard (BS) 4142:2014+A1:2019 *'Methods for Rating and Assessing Industrial and Commercial Sound'.*

2.2 Local Planning Guidance

The Tandridge District Council Local Plan Parts 1 and 2 sets out planning policies to be followed for developments in Tandridge. The policies relating to this assessment are listed below.

Core Strategy – Policy CSP 18:

"Character and design

The Council will require that new development, within town centres, built up areas, the villages and the countryside is of a high standard of design that must reflect and respect the character, setting and local context, including those features that contribute to local distinctiveness. Development must also have regard to the topography of the site, important trees or groups of trees and other important features that need to be retained.

Development must not significantly harm the amenities of the occupiers of neighbouring properties by reason of overlooking, overshadowing, visual intrusion, noise, traffic and any other adverse effect. …"

Local Plan – Policy DP7: General Policy for New Development:

"A. All development will be expected to be of a high quality design. Development should integrate effectively with its surroundings, reinforcing local distinctiveness and landscape character. Innovative designs will be encouraged where appropriate.

B. Where the principle of the proposed new development – whether in a site that is previously developed or green field – is in accordance with other policies in the Development Plan, permission will be granted where the following matters are effectively addressed:
…
Safeguarding Amenity

6. Amenity: The proposal does not significantly harm the amenity of neighbouring properties by reason of pollution (noise, air or light), traffic or other general disturbance.
…"

The Tandridge District Council Local Plan also contains the following guidance on the assessment of noise in relation to new residential development:

*"**22.10** To assist in the determination of applications for new residential development proposed close to transport-related noise sources, the long established concept of Noise Exposure Categories (NEC) will be utilised (see table below). The NEC range from A to D, with category A representing the circumstances in which noise is unlikely to be a determining factor, while category D relates to the situation in which development should normally be refused. This procedure of using NEC cannot be used in the reverse context for proposals which would introduce new noise sources into areas of existing residential development."*

Table 2.1: Noise exposure categories

Noise Levels Corresponding to the Noise Exposure Categories for New Dwellings $L_{Aeq,T}$, dB					
Noise Source	**Time**	**Noise Exposure Category**			
		A	**B**	**C**	**D**
Road Traffic	07:00 – 23:00	<55	55 – 63	63 – 72	>72
	23:00 – 07:00	<45	45 – 57	57 – 66	>66
Rail Traffic	07:00 – 23:00	<55	55 – 66	66 – 74	>74
	23:00 – 07:00	<45	45 – 59	59 – 66	>66
Air Traffic	07:00 – 23:00	<57	57 – 66	66 – 72	>72
	23:00 – 07:00	<48	48 – 57	57 – 66	>66
Mixed Sources	07:00 – 23:00	<55	55 – 63	63 – 72	>72
	23:00 – 07:00	<45	45 – 57	66	>66
General Guidelines as to acceptability of residential development scheme based on noise levels					
NEC A	Noise is unlikely to be a determining factor in the decision of an application.				
NEC B	Noise levels will be taken into account when determining planning applications and, where appropriate, conditions may be imposed to ensure an adequate level of protection against noise.				
NEC C	Permission will not normally be granted for residential development unless there are very special circumstances demonstrating that the benefit of the development will outweigh the harm by way of noise. If approval is granted, conditions will be applied to ensure an adequate level of protection against noise.				
NEC D	Permission will not be granted for residential development.				

It should be noted that when assessing night-time noise levels, where there are individual noise events regularly exceed 82 dB L_{ASmax} several times in any hour should be treated as being in NEC C or above.

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.

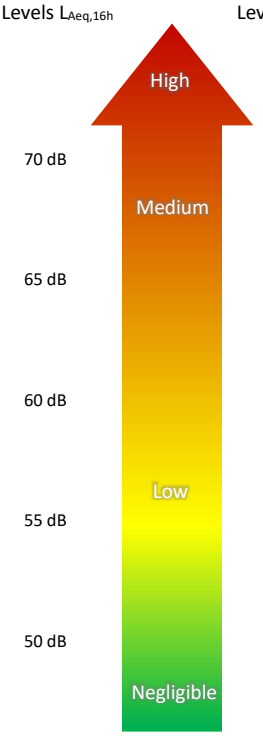
The noise risk assessment categories are presented in Figure 1 of the ProPG, which is reproduced in

Table 2.2 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 2.2: 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 $L_{Aeq,8h}$  	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. 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. 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.
	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 2.3, which correspond well with the ProPG table reproduced above.

Table 2.3: 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 2.4:

Table 2.4: 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 2.5: 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.

2.6 British Standard 4142

BS 4142:2014+A1:2019 *'Methods for Rating and Assessing Industrial and Commercial Sound'* (The British Standards Institution, 2014) provides methods for rating and assessing sound/noise of an industrial or commercial nature in relation to residential premises, hence its relevance here. The assessment methodology evaluates the "specific sound level" of each industrial or commercial sound source, corrects for distinguishable features to derive the "rating level", and compares this with the "background sound level".

The advice is that the background sound level ($L_{AF90,T}$) 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.

The specific sound level ($L_{Aeq,T}$) is obtained (by measurement or calculation) over a reference period of 1 hour in terms of the daytime (07:00 to 23:00) and 15-minutes during the night-time (23:00 to 07:00).

The rating level ($L_{Ar,Tr}$) is the specific sound level corrected to account for any acoustic features present in the sound in question, as experienced at the receptor, such as distinguishable, discrete, continuous note (a whine, hiss, screech or hum etc.) or distinct impulses (bangs, clatters or thumps etc.). Where no correction is warranted, the rating level is equal to the specific level.

The "subjective method" to calculate the rating level incorporates the following corrections (particularly appropriate for new sources that cannot be measured in-situ):

a. Up to +6 dB due to tonality, subjectively this might be +2 for a tone that is just perceptible, +4 where it is clearly perceptible and +6 where it is highly perceptible.

b. Up to +9 dB for impulsivity, subjectively this might be +3 for impulsivity that is just perceptible, +6 where it is clearly perceptible and +9 where it is highly perceptible; and

c. Up to +3 dB for other acoustic features that are neither tonal nor impulsive, though readily distinctive at the receptor.

An "initial estimate" of the impact of the specific sound is calculated by subtracting the measured background sound level from the rating level. The following advice applies:

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

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

c) A difference of around +5 dB 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.

The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs.

3 SITE DESCRIPTION

3.1 Existing Site

The proposed development site is located on Copthorne Bank, Copthorne, Crawley, RH10 3JG. The surrounding area is predominantly rural in nature. The site is to the north east of the village of Copthorne and the proposed development site is bound by Copthorne Bank to the west, Clay Hall Lane to the north, fields to the east and the residences on Borers Arms Road to the south.

The majority of nearby properties are residential in nature with some commercial properties as well, mainly on Borers Close to the south of the site. The main noise sources affecting the proposed development site is road traffic from the M23, Copthorne Common Road / A264 and local road network, and aviation noise from planes arriving to and departing from Gatwick Airport, but to a lesser extent. The site is located just outside the 51 / 45 dB Gatwick Airport noise contour (i.e., the site experiences noise levels due to aircraft using Gatwick airport lower than 51 dB $L_{Aeq,16hr}$ during the day and 45 dB $L_{Aeq,8hr}$).

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: Proposed development site

Image Credit: Google Maps

3.2 Proposed Development

The proposed development consists of circa. 252 residential dwellings, mostly consisting of detached or semi-detached properties. There are also two blocks of flats and a few terraced houses, alongside 17,00 m2 of employment floorspace, internal roads, carparking, play areas and landscaping proposed as part of the development. The proposed development can be seen on Figure 3.3 below.

Figure 3.2: Proposed development

4 BASELINE NOISE SURVEY

A baseline noise survey was conducted between 18/09/2025 – 24/09/2025 to assess the existing acoustic environment on site and in the surrounding area. Three 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 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 100ms 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, whilst the monitoring equipment conformed to Type 1 / Class 1 specification of BS 61672. Details of the monitoring equipment, including calibration information, can be found in 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-30	Rion NL-52	00830426	29/01/2025	94.1	93.8
AA-SLM-11	Rion NL-52	00732147	26/01/2024	94.0	94.0
AA-SLM-20	Rion NL-52	00743139	29/01/2025	94.0	93.9
AA-CAL-08	Rion NC-74	34304643	28/07/2025	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: IWORTH33) 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 quiet. It was dominated by road traffic on Copthorne Bank and other nearby roads. The traffic was fairly irregular and travelling at a moderate speed so was not overly loud. There was also aviation noise overhead, bird song and wind noise. On collection, the noise sources were the same and levels similar.

At UP2, on deployment, the noise climate was quiet. It was dominated by aviation noise overhead, there was also some birdsong, and distant traffic noise from the west and northwest. On collection, the noise environment was roughly the same, with the addition of some wind noise.

At UP3, on deployment, the noise climate was quiet. It was dominated by wind noise and there was some bird song, aviation noise overhead and distant road traffic noise. On collection, the noise environment was similar, although the loudest sound was now aviation noise, there was less wind noise and more bird song.

4.4 Survey Results

A summary of the 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 Noise Level, $L_{Aeq,16}$, dB(A)	Average Night-Time Noise Level, $L_{Aeq,8hr}$, dB(A)	10th Highest $L_{Amax,2min}$, dB(A)
UP1	61	53	76
UP2	50	43	57
UP3	51	43	59

5 PREDICTING ON SITE NOISE LEVELS

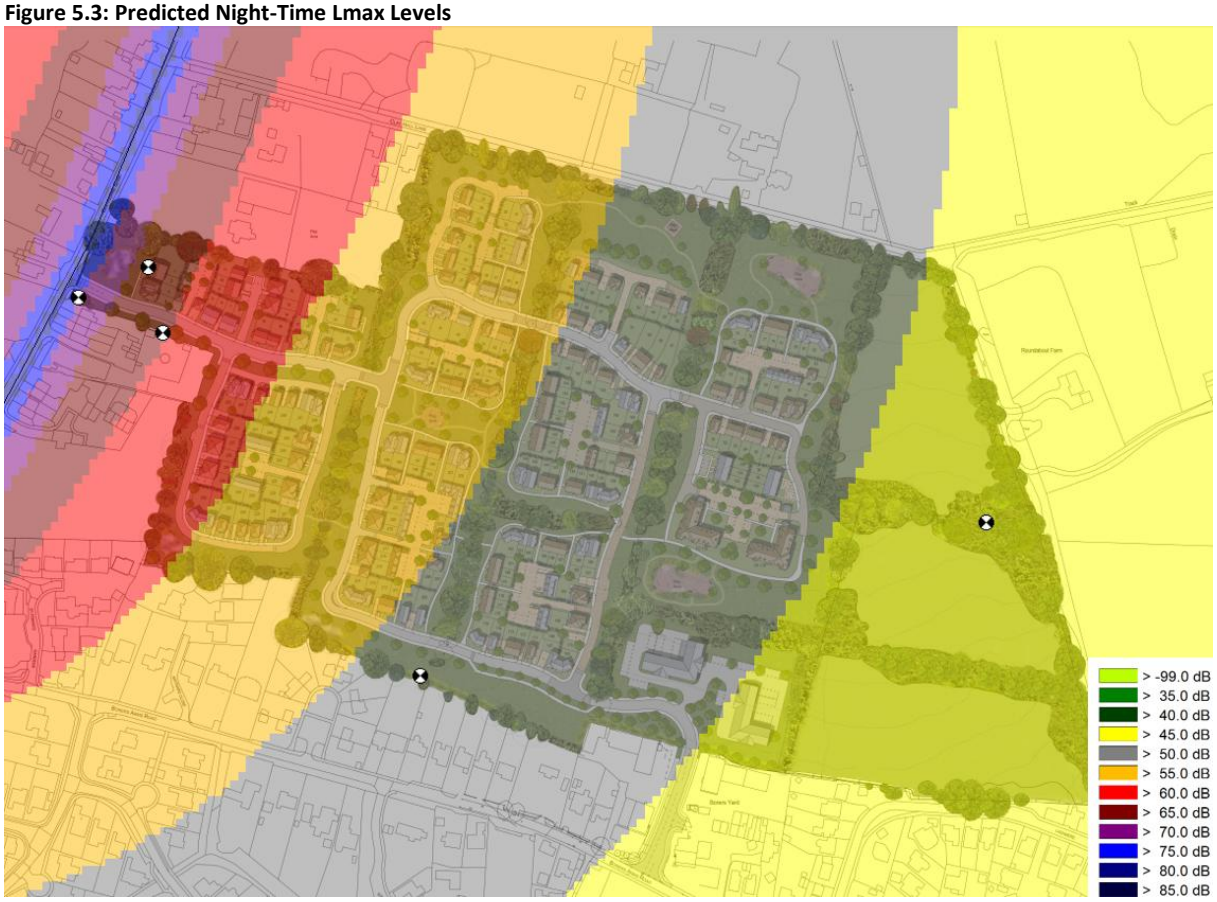
Representative sound levels across the site have been determined using a combination of the noise data collected from the survey and a 3D noise model using DaraKustik's CadnaA (2025) noise modelling software.

Using noise survey data from the measurement position closest to the road (UP1), noise levels from Copthorne Bank have been measured. This then allowed the prediction of noise levels due to Copthorne Bank across the proposed development site for the day, night-time and 10th highest night-time L_{AFmax} levels, as can be seen on Figure 5.1, Figure 5.2 and Figure 5.3, respectively. This shows that the predicted road traffic levels at UP2 and UP3 were much lower than the on-site measured $L_{Aeq,T}$ levels. This indicates that at these sections of the site the acoustic environment is controlled by the aviation noise – the only other significant noise source – rather than road traffic.

Figure 5.1: Predicted Daytime Noise Levels

Figure 5.2: Predicted Night-Time Noise Levels

Figure 5.3: Predicted Night-Time Lmax Levels



It is proposed, for the purpose of this assessment, to divide the site into three sections, the western section closest to the road, within which the acoustic environment is controlled by road traffic noise, and an eastern and central section where the acoustic environment is controlled by aviation noise, and are represented by UP2 and UP3, respectively. These sections can be seen on Figure 3.1. Whilst levels measured at UP2 and UP3 will be used in the assessment for their respective sections, the predicted levels at the worst affected dwellings (dwellings 1, 2, 3 and 4) have been used as representative of the western section. These levels are shown in Table 5.1 below.

Table 5.1: Western section noise levels

Location	Daytime	Night-time	10th Highest $L_{AFmax,2min}$
Dwellings 1, 2, 3 & 4	52	42	68

6 ASSESSMENT OF LOCAL PLANNING AUTHORITY CRITERIA

As shown in Table 4.2 and Table 5.1 above, all of the proposed residential dwellings experience noise levels from mixed sources less than 55 dB(A). Furthermore, none of the residences regularly experience L_{AFmax} levels noise levels higher than 82 dB(A) - this level is exceeded once across the entire site during the whole survey period. Therefore, as shown in Table 2.1, this means the site falls into Noise Exposure Category A and as such, noise is unlikely to be a determining factor in determining a planning application.

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
Western Section (UP1)	Daytime $L_{Aeq,16hr}$ (07:00 – 23:00)	51	Low
	Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00)	41	Low
	10th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00)	68	-
Eastern Section (UP2)	Daytime $L_{Aeq,16hr}$ (07:00 – 23:00)	50	Negligible
	Night-Time $L_{Aeq,8hr}$(23:00 – 07:00)	43	Low
	10th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00)	57	-
Central Section (UP3)	Daytime $L_{Aeq,16hr}$ (07:00 – 23:00)	51	Low
	Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00)	43	Low
	10th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00)	59	-

Therefore, as sections 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 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 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 traffic and aviation noise. Both of 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 current masterplan, there is some space to the east of the site, meaning that some of the dwellings located closest to Copthorne Bank could be relocated here to reduce the noise impact on them from road traffic. However, as stated above, this section of the site is affected by aviation noise so there will be limited benefit in relocating any dwellings other than those closest to Copthorne Bank.

Furthermore, as the site is affected by aviation noise, changing the orientation of most of the proposed dwellings is unlikely to have an impact on noise levels, however, for dwellings closest to Copthorne Bank, the dwellings could be reconfigured such that the most sensitive rooms are not westward facing, wherever possible.

Noise levels due to the rod traffic from Copthorne Bank could be reduced further still with the introduction of an acoustic barrier along the western edge of the site bordering Copthorne Bank. Any such fence should be a 2 m high, close boarded acoustic fence with a superficial mass of 15 kgm-2.

It should be noted that the assessment already shows that the scheme is suitable for residential development regardless of whether or not the above amendments to the scheme are made. However, if for whatever reason additional protection from noise is required, these steps could be considered.

8.2 Element 2 – Internal Noise Level Guidelines

ProPG refers to guidance on acceptable internal noise levels in BS 8233 to ensure that the amenity of residents is protected. These values are shown in Table 2.4.

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 1m high x 1.25m wide and is open by 30^{o} provides approximately 13 dB reduction. The resultant noise levels 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
Western Section	Daytime $L_{Aeq,16hr}$ (07:00 – 23:00)	38	+3
	Night-time $L_{Aeq,8hr}$ (23:00 – 07:00)	28	-2
	10th Highest Night-time $L_{Amax,2min}$ (23:00 – 07:00)	55	+10
Eastern Section	Daytime $L_{Aeq,16hr}$ (07:00 – 23:00)	37	+2
	Night-time $L_{Aeq,8hr}$ (23:00 – 07:00)	30	0
	10th Highest Night-time $L_{Amax,2min}$ (23:00 – 07:00)	44	-1
Central Section	Daytime $L_{Aeq,16hr}$ (07:00 – 23:00)	38	+3
	Night-time $L_{Aeq,8hr}$ (23:00 – 07:00)	30	0
	10th Highest Night-time $L_{Amax,2min}$ (23:00 – 07:00)	46	+1

As can be seen from the above, target levels are met at the some locations for some time periods. However, there is a slight exceedance of the target internal noise level during the day in the each section, and a 10 dB exceedance of the night-time L_{AFmax} guidelines in the western section. As such, open windows cannot be relied upon to provide ventilation and control overheating at every single property.

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 Fairfax Acquisitions Ltd. (client).

Table 8.2: Assessment drawings

Drawing Title	Drawing Number	Revision	Date
Illustrative Coloured Masterplan	2512/PL.08	Rev.J	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. Our calculations are based on a wall area of 12.2 m^2, 4 m^2 of glazing and two ventilators per façade which are considered typical worst-case assessment parameters.

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 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 shown from the noise modelling and baseline noise survey, 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 $L_{Aeq,T}$. As can be seen on Figure 5.1, all external amenity areas aside from those belonging to dwellings 1, 2, 3 and 4 experience levels due to road traffic noise less than the lower guideline value of 50 dB $L_{Aeq,16hr}$ (and these amenity areas still have levels below the upper guideline value). As such, it is reasonable to assume that all external amenity areas in the western section (aside from dwellings 1, 2, 3 and 4) and central section experience noise levels less than or equal to the lower guideline limit. The central section of the site experiences noise levels of 51 dB $L_{Aeq,16hr}$, which is just above the lower guideline value. However, once screening from buildings and garden fences is taken into account, the levels are expected to be reduced to within acceptable levels.

Furthermore, ProPG states:

"Where, despite following a good acoustic design process, significant adverse impacts remain on any private external amenity spaces (e.g., garden or balcony) then that impact may be partially off-set if the residents are provided, through the design of the development or the planning process, with access to:

- *A relatively quiet façade (containing openable windows to habitable rooms) or a relatively quiet externally ventilated space (i.e., an enclosed balcony) as part of their dwelling; and/or*
- *A relatively quiet alternative or additional external amenity space for sole use by a household, (e.g., a garden, roof garden or large open balcony in a different, protected location); and/or*
- *A relatively quiet protected, nearby external amenity space for sole use by a limited group of residents as part of the amenity of their dwellings; and/or*
- *A relatively quiet, protected, publicly accessible external amenity space (e.g., a public park or a local green space designated because of its tranquillity) that is nearby (e.g., within a 5 minutes walking distance). The local planning authority could link such provision to the definition an management of Quiet Areas under the Environmental Noise Regulations."*

There are sections of the site set aside for communal external amenity areas, and as the majority of the private amenity areas will experience noise levels lower than the lower guideline value, the requirements for noise levels in the external amenity areas in ProPG are satisfied.

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

As discussed above, a façade with a window open for heating and ventilation provides around 13 dB of attenuation.

Therefore, it can be assumed that open windows are likely to be closed during sleeping hours when the external night-time noise levels incident on the façades of the proposed development are 53 dB $L_{Aeq,8hr}$ and experience levels of 68 dB L_{AFmax} more than 10 times a night. As shown in Table 8.4 below, none of the site experience noise levels this high so windows are unlikely to be closed during sleeping hours.

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^{o} provides approximately 13 dB reduction.

Table 8.4: Open-window feasibility assessment for overheating

Site Section	Façade-Incident Noise Level	Calculated Internal Ambient Noise Level with Partially Open Window
Western Section	$L_{Aeq,8hr}$ = 51	$L_{Aeq,8hr}$ = 38
	$L_{AFmax,2min}$ = 68	$L_{AFmax,2min}$ = 55
Eastern Section	$L_{Aeq,8hr}$ = 43	$L_{Aeq,8hr}$ = 30
	$L_{AFmax,2min}$ = 57	$L_{AFmax,2min}$ = 44
Central Section	$L_{Aeq,8hr}$ = 43	$L_{Aeq,8hr}$ = 30
	$L_{AFmax,2min}$ = 59	$L_{AFmax,2min}$ = 46

Whilst a full overheating and ventilation scheme for the site is yet to be determined, and this scheme will not only depend on the acoustic conditions on site, it is not considered likely that the noise levels on site will be high enough to require closed windows at night to control ventilation and overheating.

This initial open window feasibility assessment indicates that natural / passive control ventilation control strategies are likely to be suitable. Though a more detailed assessment should be undertaken during the detailed design stages so it can be demonstrated that the noise limit requirements of Approved Document O can be achieved.

9 COMMERCIAL AREAS

As stated above, there is an area set aside for use as employment space to the southeast of the site. As such, this space needs to be assessed in line with the guidance contained in BS 4142:2014+A1:2019 to ensure that it does not produce noise levels that will cause a disturbance to either the future residents of the proposed development or the nearby existing noise sensitive receptors.

As the eventual usage of this space is unknown at this point, it is proposed to set noise emission limits that will ensure residential amenity is not effective. BS 4142 contains the following guidance relating to the potential impact of noise levels:

"The significance of sound of an industrial and/or commercial nature depends upon the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs / will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.
Obtain an initial estimate of the impact of the specific sound by subtracting the measured 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 and indication of a significant adverse impact, depending on 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."*

Therefore, it is proposed that the plant noise limit is set to be equal to the representative background sound level. As the closest measurement position to the proposed commercial area is UP3, the representative background sound level from this location will be representative of the residential dwellings and noise sensitive receptor most affected by the commercial area.

BS 4142:2014+A1:2019 states:

'The advice is that the background sound level ($L_{AF90,T}$) 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.'

An analysis of the day and night-time $L_{A90,T}$ values at UP3 has been undertaken to determine the representative background sound level. For both the day and night-time, it was decided that the modal value of the $L_{A90,T}$ levels was the most representative of the on-site conditions. This analysis can be seen in Appendix B.

The sound emission limits for the commercial space are detailed in Table 9.1 below. This limit is inclusive of all relevant character corrections detailed in BS 4142:2014+A1:2019 and measured at the worst affected nearby noise sensitive receptor.

Table 9.1: Sound Emission Limits

Time Period	Sound Emission Limit, dB(A)
Daytime (07:00 – 23:00)	42
Night-time (23:00 – 07:00)	38

Meeting these limits will ensure that whatever the eventual usage of the commercial space is, nearby noise sensitive receptors should not be adversely affected.

10 SUMMARY

Anderson Acoustics Ltd was commissioned by Fairfax Acquisitions Ltd to provide acoustic consultancy services in support of a planning application for a new residential development located to the north of Borers Arms Road, Copthorne, Crawley, RH10 3LR.

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.

This assessment showed that the site falls into Noise Exposure Category A (as defined in the Tandridge District Council Local Plan), which indicates that noise is unlikely to be a determining factor in the decision of an application. The Stage 1 risk assessment showed that the site falls into the 'low' risk category.

The PropPG Stage 2 Risk Assessment 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.

Plant noise emission limits were also determined for the proposed commercial areas and, so long as these limits are followed, nearby residential receptors will not be negatively affected by the operation of the proposed commercial area.

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

APPENDIX A

ACOUSTIC TERMINOLOGY

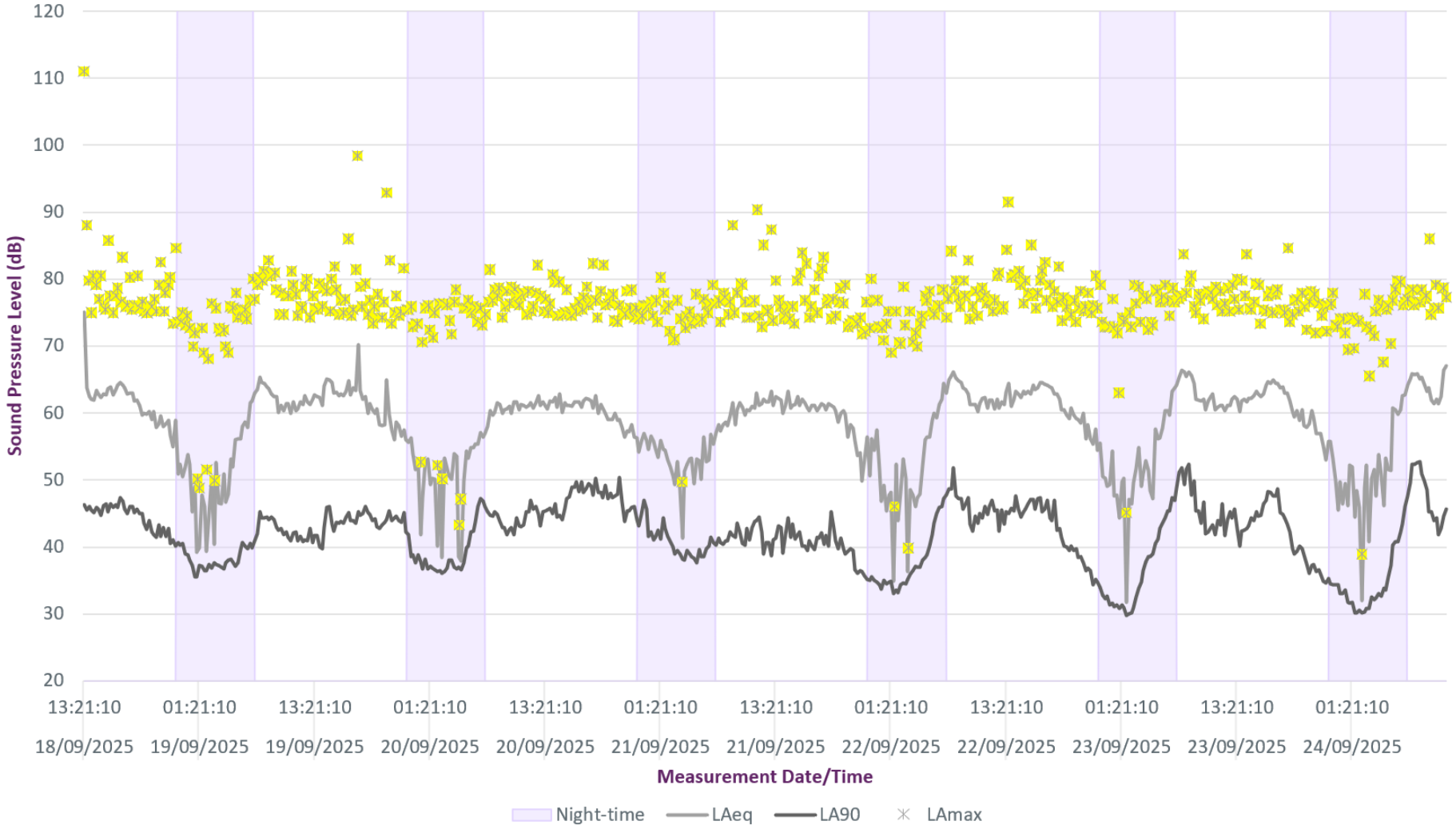
Please visit: https://andersonacoustics.co.uk/resources/acoustics-glossary

APPENDIX B

SURVEY DATA

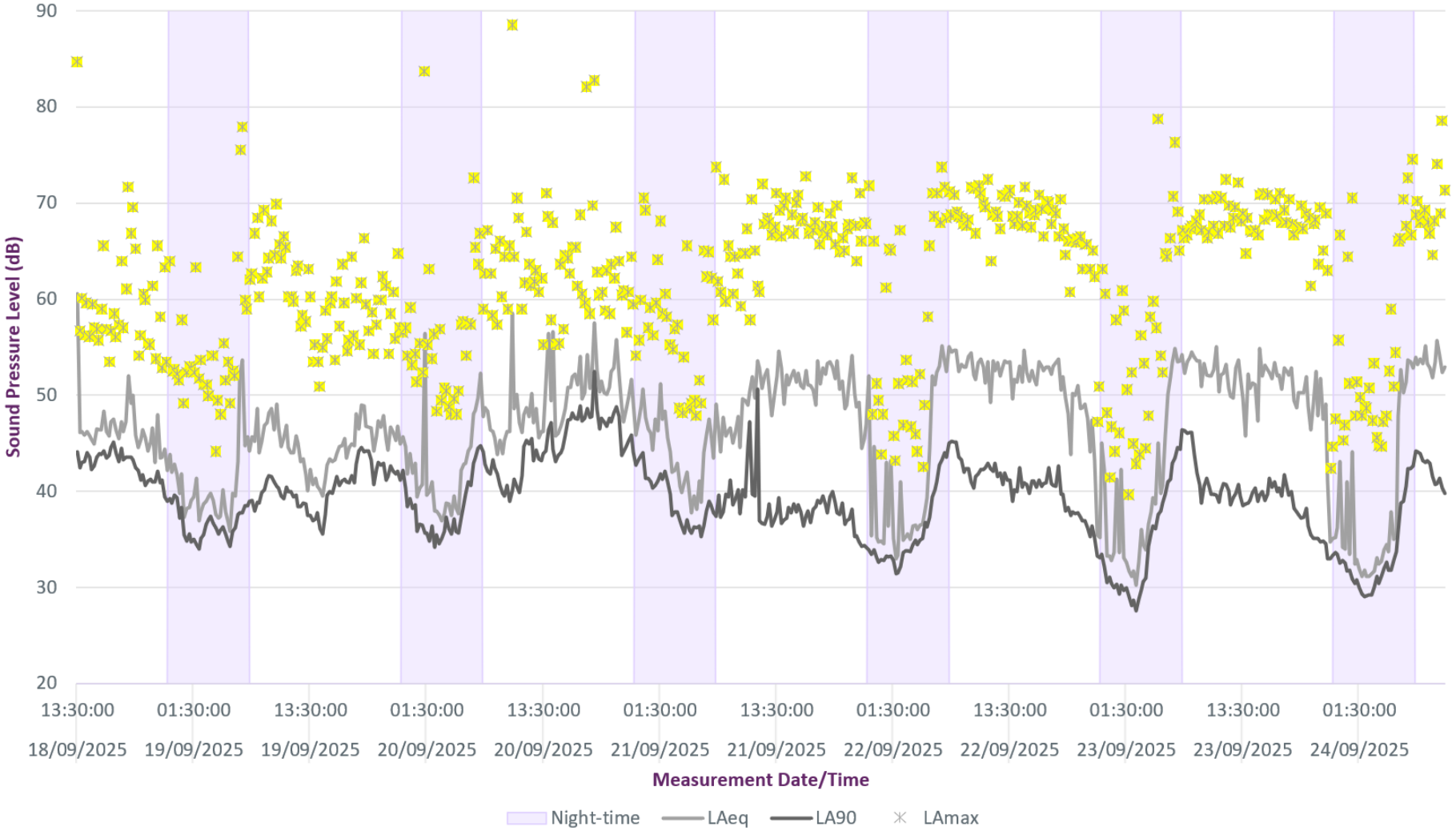
Sound Survey Time History Graph

Measurement Position UP1 - Thursday 18 September 2025 to Tuesday 23 September 2025



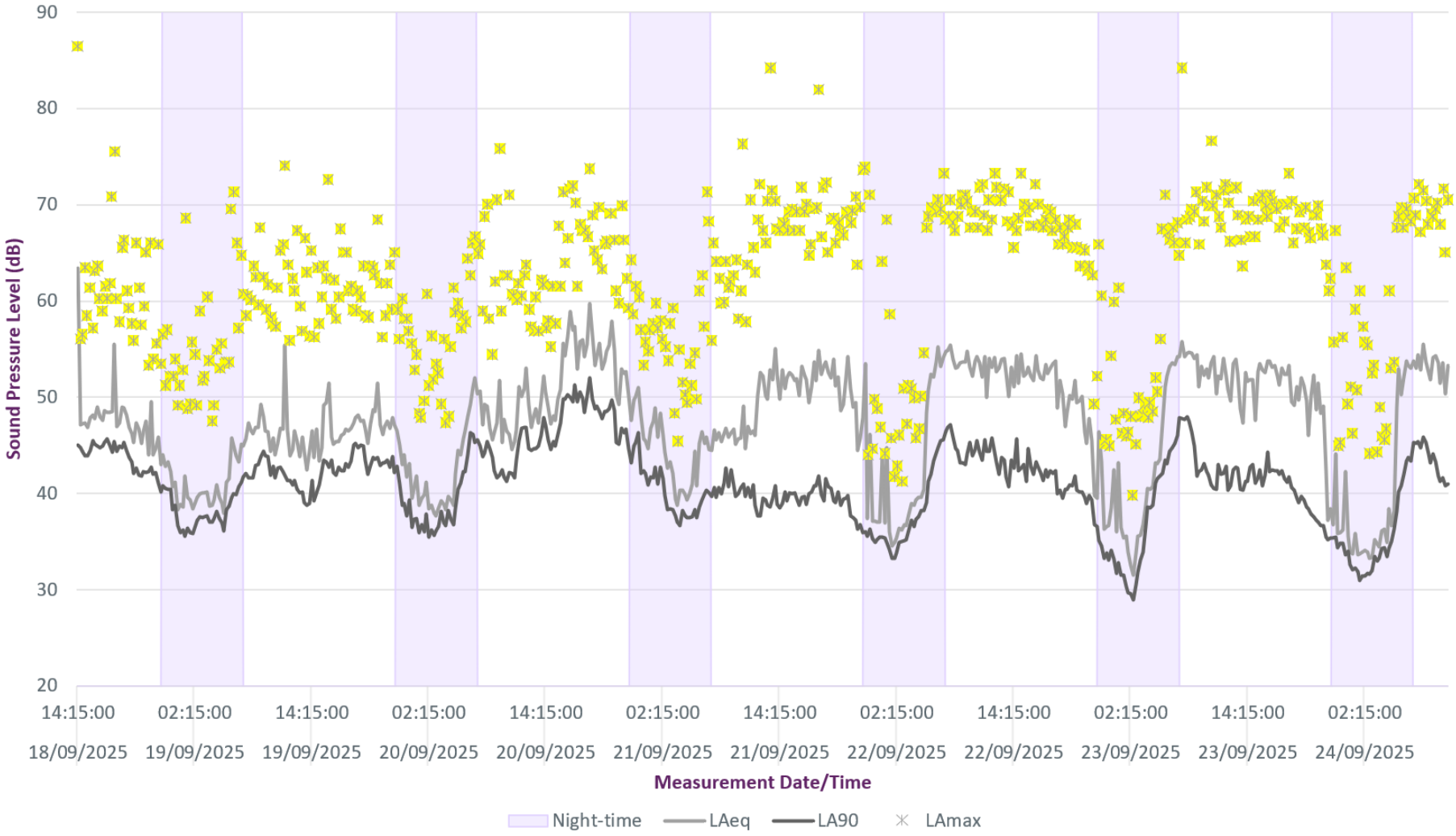
Sound Survey Time History Graph

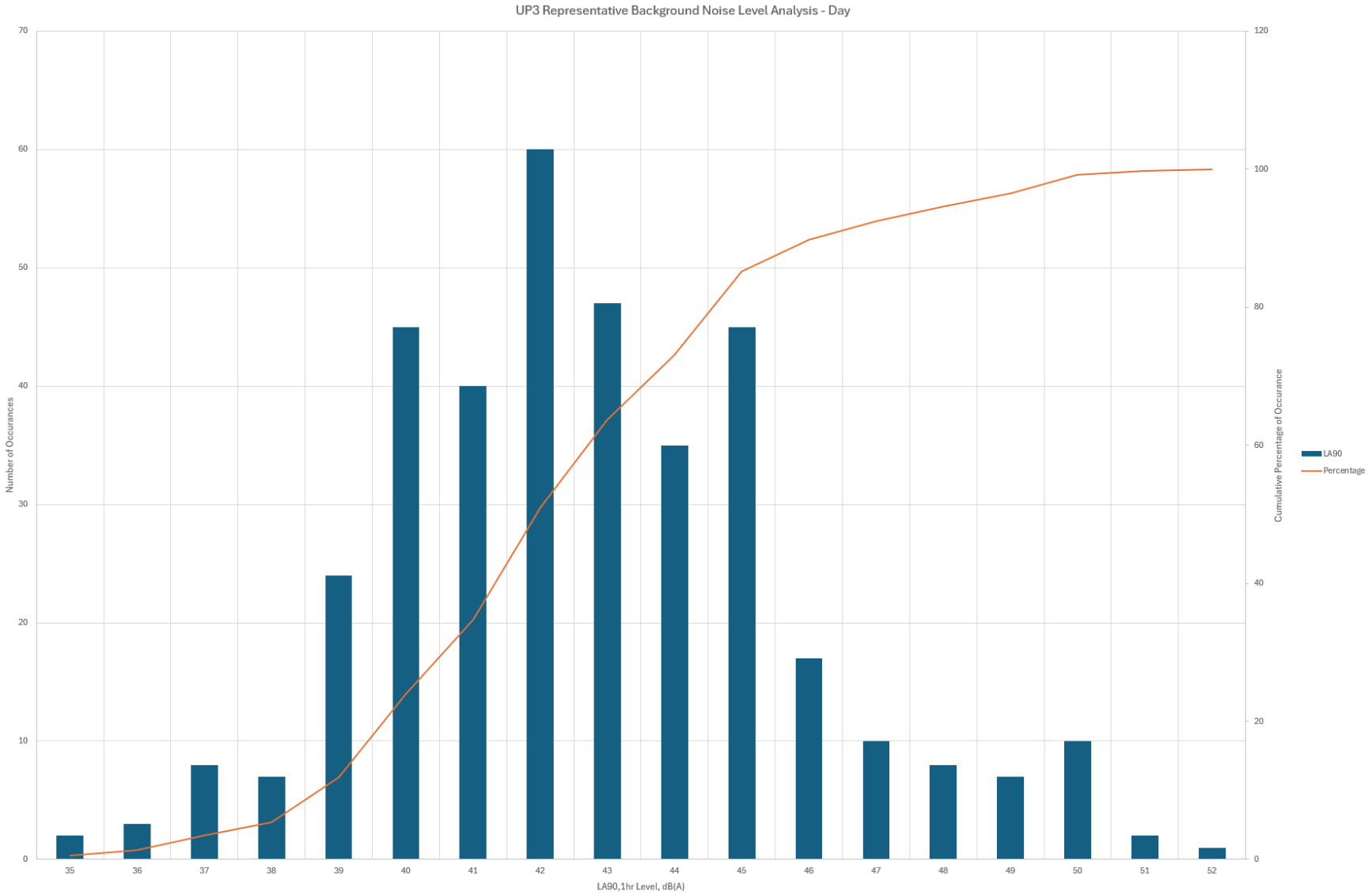
Measurement Position UP2 - Thursday 18 September 2025 to Tuesday 23 September 2025

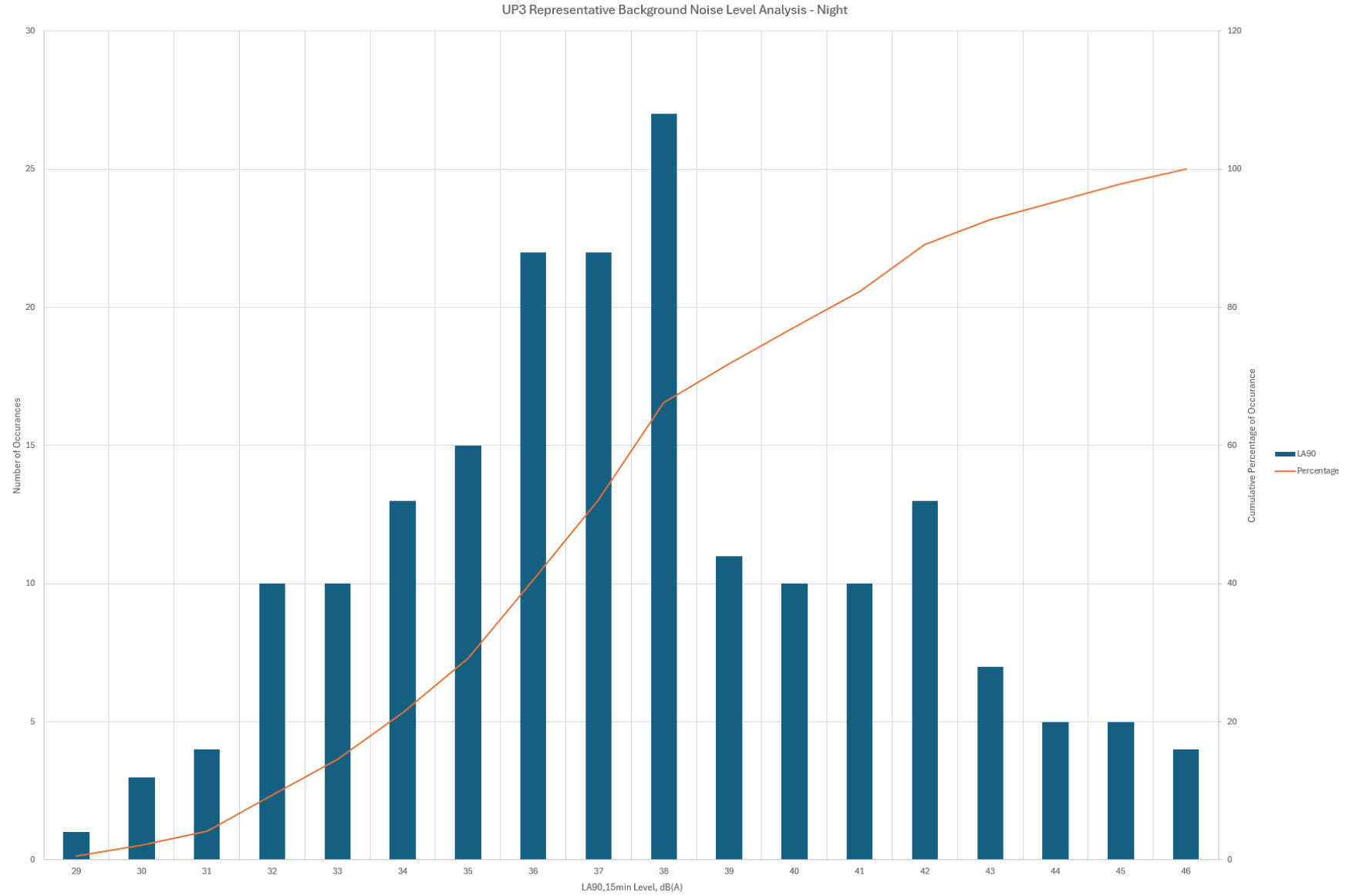


Sound Survey Time History Graph

Measurement Position UP3 - Thursday 18 September 2025 to Tuesday 23 September 2025




UP3 Representative Background Noise Level Analysis - Day
Number of Occurances
Cumulative Percentage of Occurance
LA90,1hr Level, dB(A)
LA90
Percentage
0
10
20
30
40
50
60
70
0
20
40
60
80
100
120
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52


UP3 Representative Background Noise Level Analysis - Night
Number of Occurances
Cumulative Percentage of Occurance
LA90,15min Level, dB(A)
LA90
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
46