



LAND OFF CRAWLEY ROAD, FAYGATE

FAIRFAX ACQUISITIONS LTD

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NOISE IMPACT ASSESSMENT LAND OFF CRAWLEY ROAD, FAYGATE

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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 east of Crawley Road, Horsham, RH12 4RT.

The development consists of circa. 120 new residential dwellings, alongside associated landscaping, internal road network and car parking spaces. The site is located within the administrative boundary of Horsham District Council (HDC).

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);
- 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

Guidance on the assessment of noise in relation to planning within the administrative boundaries of Horsham District Council 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 rise 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 tones 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 $L_{Aeq,8h}$		
	70 dB	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.
	65 dB		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.
	60 dB		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.
	55 dB		
	50 dB		
	60 dB		
	55 dB		
	50 dB		
	45 dB		
	40 dB		
		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:

- Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.
- 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".
- $L_{Aeq,16h}$ is for daytime 0700 – 2300, $L_{Aeq,8h}$ is for night-time 2300 – 0700.
- 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 east of Crawley Road, Horsham, RH12 4RT. The surrounding area is predominately suburban in nature with some farmland nearby. The site is bound by Crawley Road to the west, Old Crawley road and fields to the north, woodland to the east and residential properties to the south.

The nearby properties are mostly residential in nature, with some commercial offices located to the north (approx. 215 m away). The main noise source affecting the proposed development site is road traffic from Crawley Road directly to the west 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: Proposed Development Site



Image Credit: Google Earth

3.2 Proposed Development

The proposed development consists of circa. 120 residential dwellings, consisting of a mixture of detached, semi-detached and terraced properties alongside a new internal road network, road connection to Crawley Road and associated landscaping. The proposed development can be seen on Figure 3.2 below (drawing ref.: 2508/SK.04).

Figure 3.2: Proposed Development



4 BASELINE NOISE SURVEY

A baseline noise survey was conducted between 04/03/2026 – 10/03/2026 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 traffic sources and capture background noise levels. Additional short-term noise measurements were undertaken on deployment and collection to 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 ($\geq \pm 0.5$ 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	29/01/2026	93.9	94.0
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: IHORSH64) 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 and some small periods of rainfall, noise data gathered during these periods have been removed to avoid impacting the validity of results.

4.3 On-Site Observations

At UP1, on deployment, the noise climate was reasonably loud. It was dominated by road traffic on Crawley Road. 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. On collection, the noise sources were the same and levels similar.

At UP2, on deployment, the noise climate was quiet. It was dominated by wind noise, with some bird song and traffic noise from Crawley Road also audible. 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 $L_{Amax,T}$ 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, $L_{Aeq,16hr}$, dB	Average Night-Time (23:00 – 07:00 hours) Noise Level, $L_{Aeq,8hr}$, dB	10 th Highest Night-time (23:00 – 07:00 hours) $L_{Amax,T}$, dB
UP1	68	61	78
UP2	51	44	68

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 Crawley Road have been determined. This then allowed the prediction of noise levels due to Crawley Road across the proposed development site for each measurement period.

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. Contour colours have been selected based on the ProPG Stage 1 Risk Assessment levels, as detailed in Table 2.1.

Figure 5.1: Predicted Daytime $L_{Aeq,16Hr}$ Level

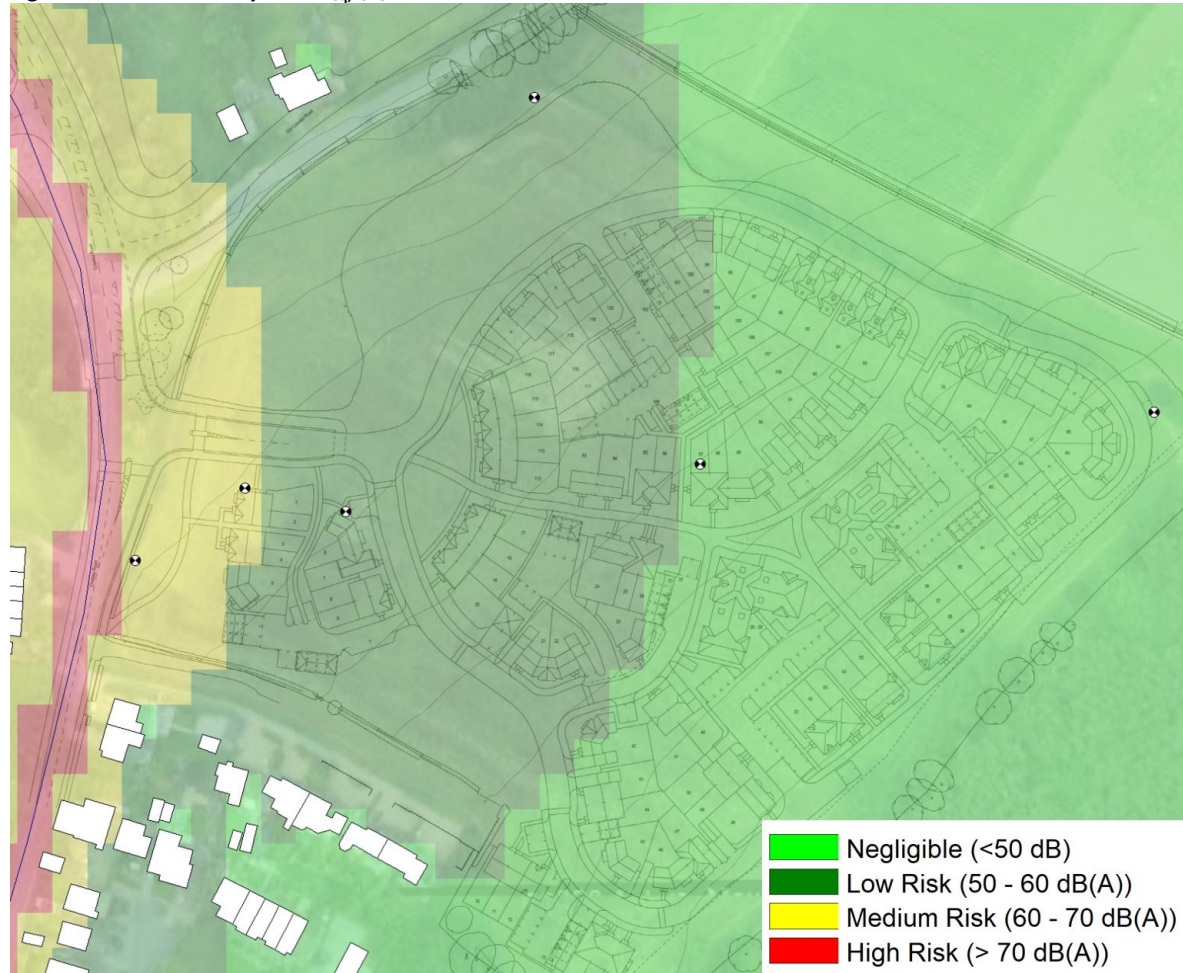


Figure 5.2: Predicted Night-time $L_{Aeq,8hr}$ Levels

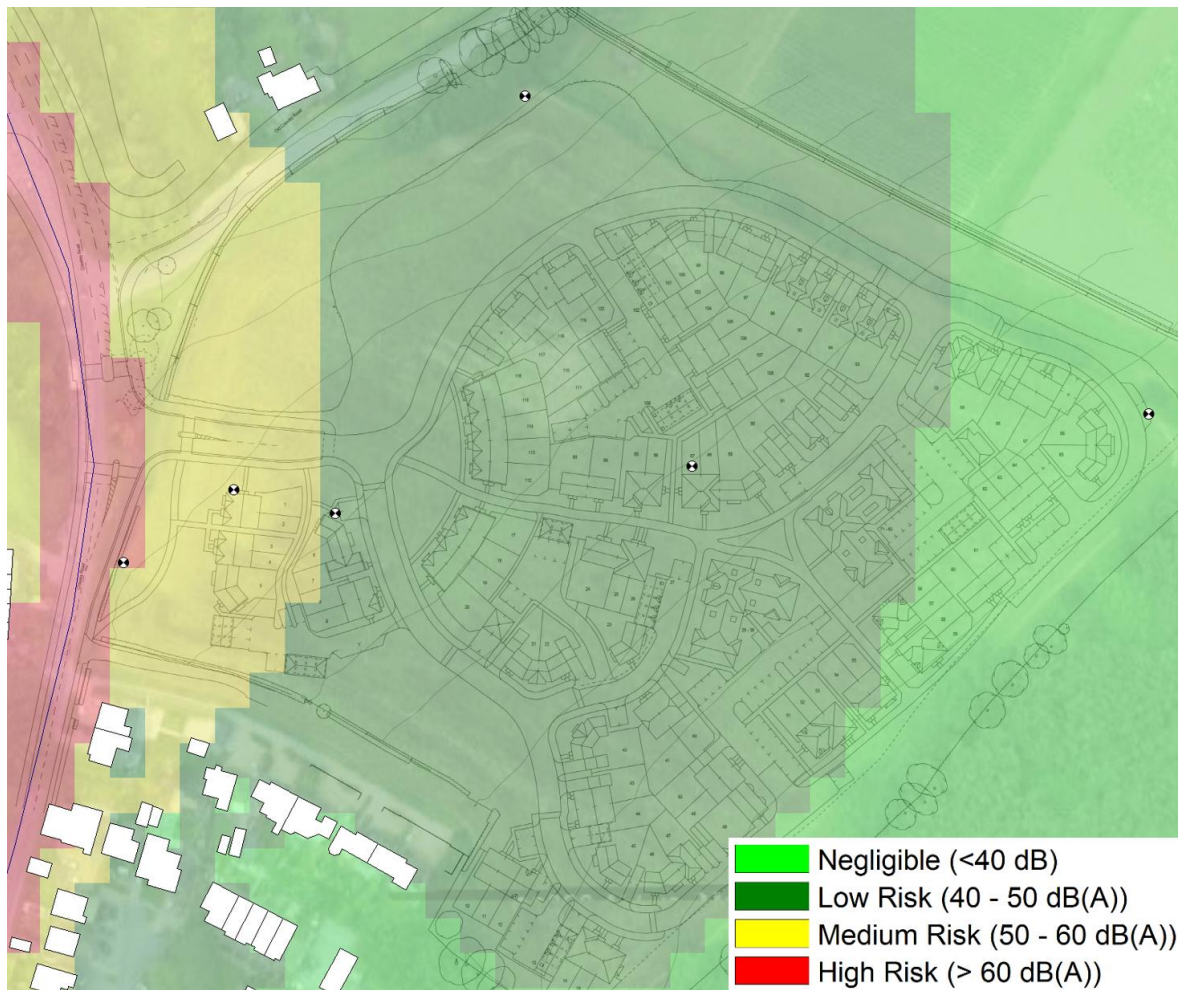
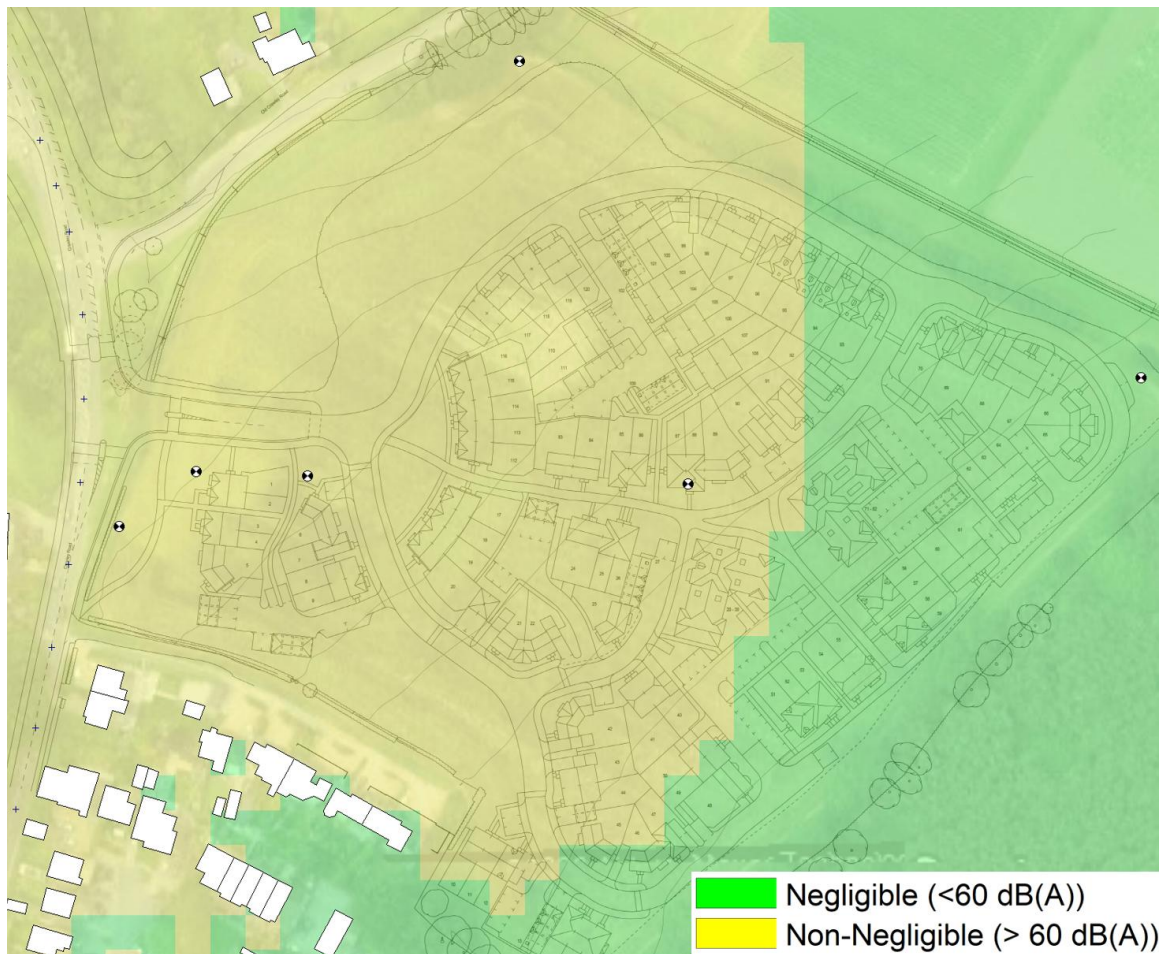


Figure 5.3: Predicted 10th Highest $L_{AFmax,2min}$ Levels



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 Crawley Road, sitting within the yellow sections on Figure 5.2 (night-time) above.

Section 2 is made up of the properties in the centre of the site, contained in the 'low risk', dark green section shown on Figure 5.2 (night-time) above.

Section 3 consists of the remainder of the properties, sitting within the light green contours on Figure 5.3 above. Table 5.1 below contains the noise levels from the most exposed properties sitting in each section.

Table 5.1: Assessment noise levels

Location	Daytime	Night-time	10 th Highest $L_{AFmax,2min}$
Section 1	60	53	74
Section 2	56	49	69
Section 3	49	42	61

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 2.4.

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)	60	Low
	Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00)	53	Medium
	10 th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00)	74	-
Section 2	Daytime $L_{Aeq,16hr}$ (07:00 – 23:00)	56	Low
	Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00)	49	Low
	10 th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00)	69	-
Section 3	Daytime $L_{Aeq,16hr}$ (07:00 – 23:00)	49	Negligible
	Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00)	42	Low
	10 th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00)	61	-

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 source affecting the proposed development is road 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 masterplan drawing, there is not much space to rearrange the locations of dwellings, however, as there are only a few dwellings in the most exposed section (Section 1), 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. Alternatively, the building fabric construction could be uprated to provide additional noise insulation at these properties.

As the site is predominately affected by road traffic from Crawley Road, 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 its nearest noise source (i.e., for properties located close to Crawley Road, 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 Crawley Road. Any such fence should be a 2 m high, close boarded acoustic fence with a superficial mass of 15 kgm⁻². Noise levels could also be reduced by introducing acoustic fences in place of standard fencing around the gardens.

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)	47	+12
	Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00)	40	+10
	10 th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00)	61	+16
Section 2	Daytime $L_{Aeq,16hr}$ (07:00 – 23:00)	43	+8
	Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00)	36	+6
	10 th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00)	56	+11
Section 3	Daytime $L_{Aeq,16hr}$ (07:00 – 23:00)	36	+1
	Night-Time $L_{Aeq,8hr}$ (23:00 – 07:00)	29	-1
	10 th Highest Night-Time $L_{Amax,2min}$ (23:00 – 07:00)	48	+3

As can be seen from the above, target levels are not met at most locations and 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 $L_{AFmax,T}$ 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.

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 Acquisition Ltd (client).

Table 8.2: Assessment drawings

Drawing Title	Drawing Number	Revision	Date
Illustrative Base Masterplan	2126/PL.08	Rev.J	February 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: Façade 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 / 6 mm glass)	32 / 29
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

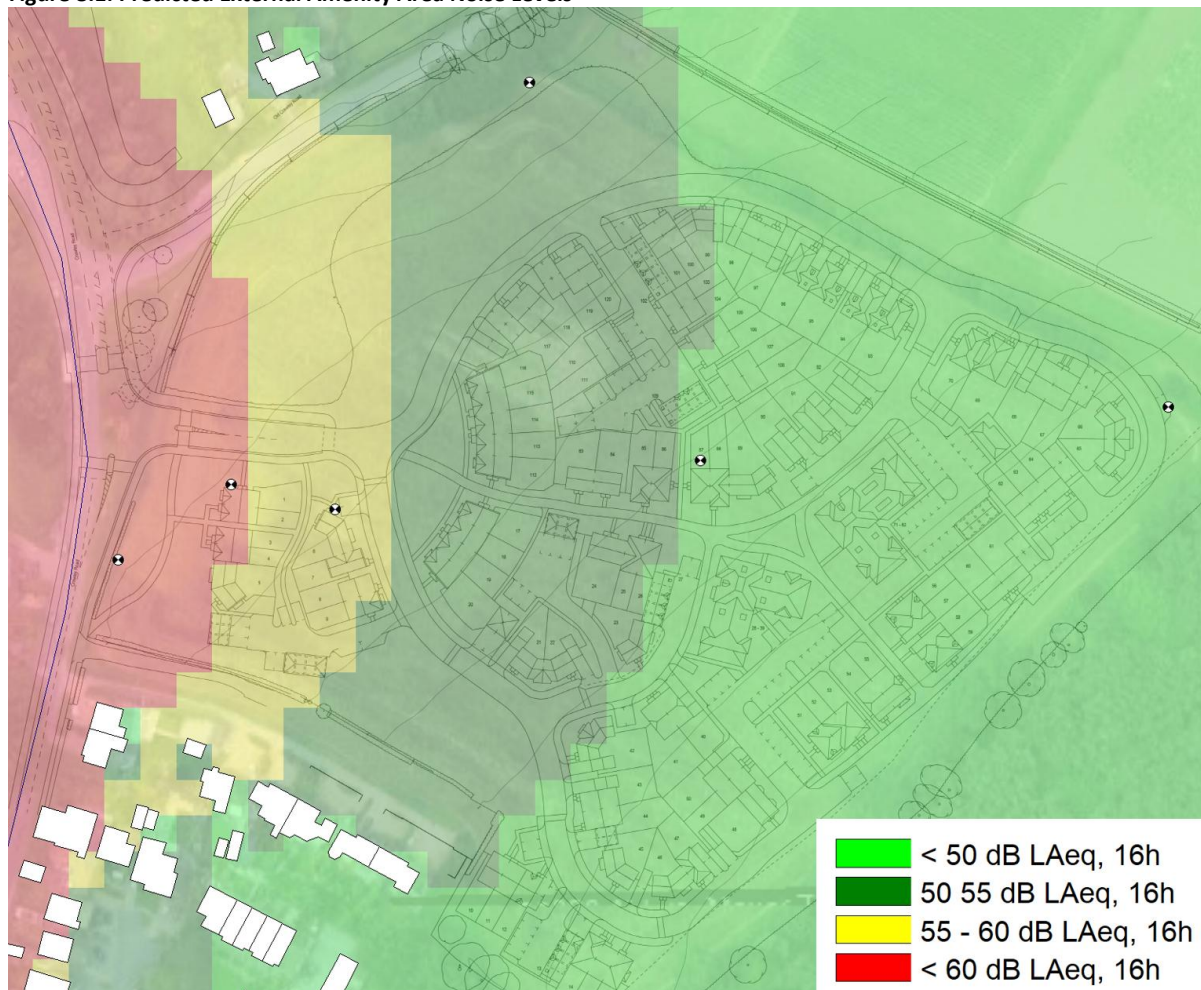
As detailed above, BS 8233:2014 states that:

“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, some 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 $L_{Aeq,T}$, namely, the amenity areas associated with dwellings 1 – 9. The rest of the amenity areas across the site experience noise levels below the upper guideline value. It should be noted that screening effects from buildings forming the proposed development and garden fences have not been accounted for and as such, external amenity area noise levels will be lower in reality.

To remedy this, the dwellings could be rearranged such that their external amenity areas are within the sections experiencing noise levels below the upper guideline values. Dwellings could be oriented such that the gardens are on the opposite side to the road, so the building can shield it from noise. Furthermore, the addition of acoustic fences in place of garden fences will reduce noise levels in their respective gardens. Regardless, there is open green space located to the north of the proposed development site which experiences noise levels below the upper guideline value and as such, the external amenity area noise level requirements for the proposed development will be met for all properties whether or not changes are made to the scheme.

Figure 8.1: Predicted 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:

- 40 dB $L_{Aeq,T}$ averaged over 8 hours (between 11pm and 7am).
- 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 and some in Section 2, 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	$L_{Aeq,8hr} = 53$	$L_{Aeq,8hr} = 40$
	$L_{AFmax,2min} = 74$	$L_{AFmax,2min} = 61$
Section 2	$L_{Aeq,8hr} = 49$	$L_{Aeq,8hr} = 36$
	$L_{AFmax,2min} = 69$	$L_{AFmax,2min} = 56$
Section 3	$L_{Aeq,8hr} = 42$	$L_{Aeq,8hr} = 29$
	$L_{AFmax,2min} = 61$	$L_{AFmax,2min} = 48$

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	59	47
UP2	47	36

10 SUMMARY

Anderson Acoustics Ltd was commissioned by Fairfax Acquisitions Ltd to provide a noise impact assessment to support a planning application for a new residential development located to the east of Crawley Road, Horsham, RH12 4RT.

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, it is our opinion that there is no reason for planning permission to be refused with regards to noise.

APPENDIX A

ACOUSTIC TERMINOLOGY

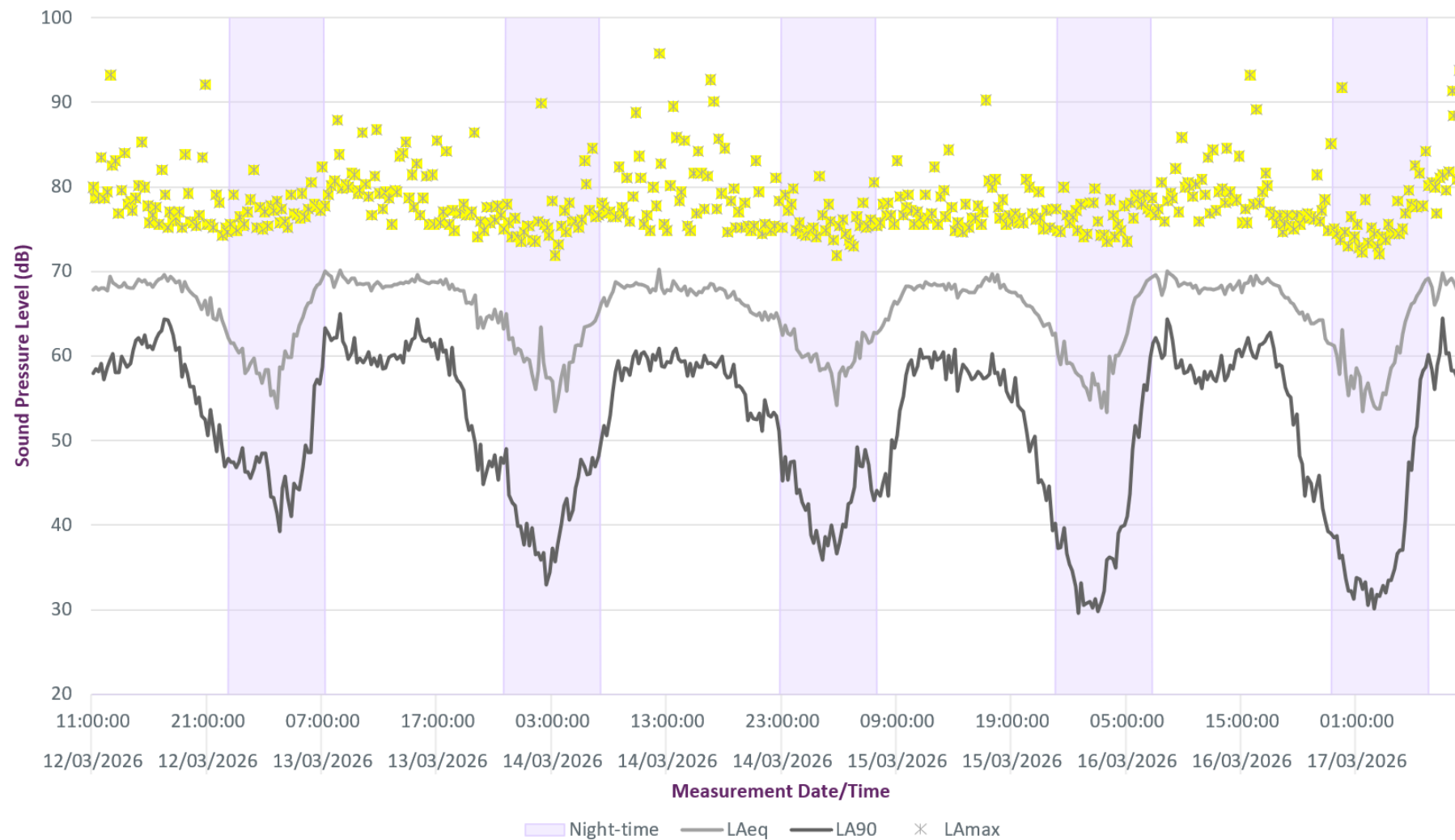
Please visit: <https://andersonacoustics.co.uk/resources/acoustics-glossary>

APPENDIX B

SURVEY DATA

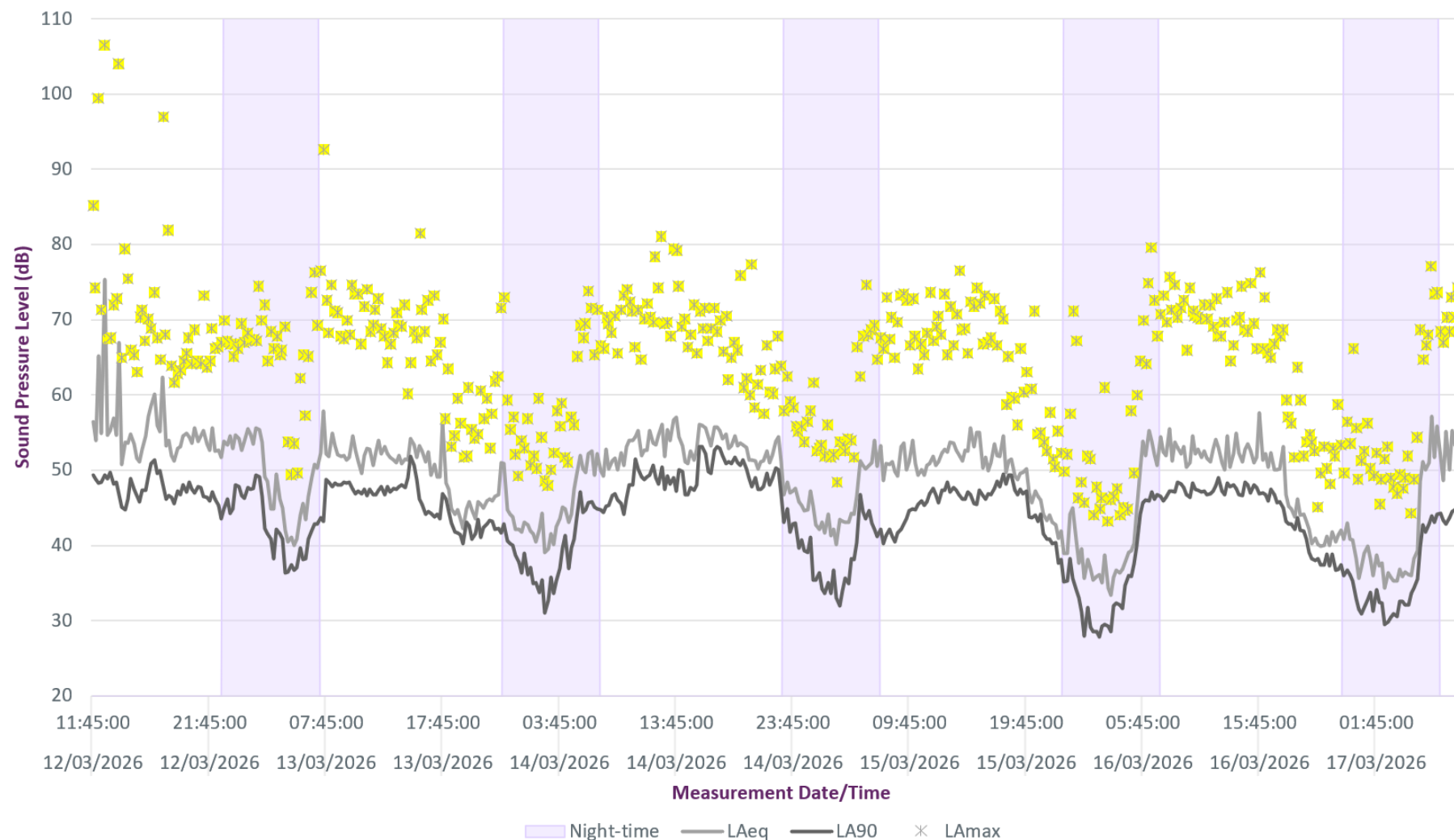
Sound Survey Time History Graph

Measurement Position UP1 - Thursday 12 March 2026 to Tuesday 17 March 2026



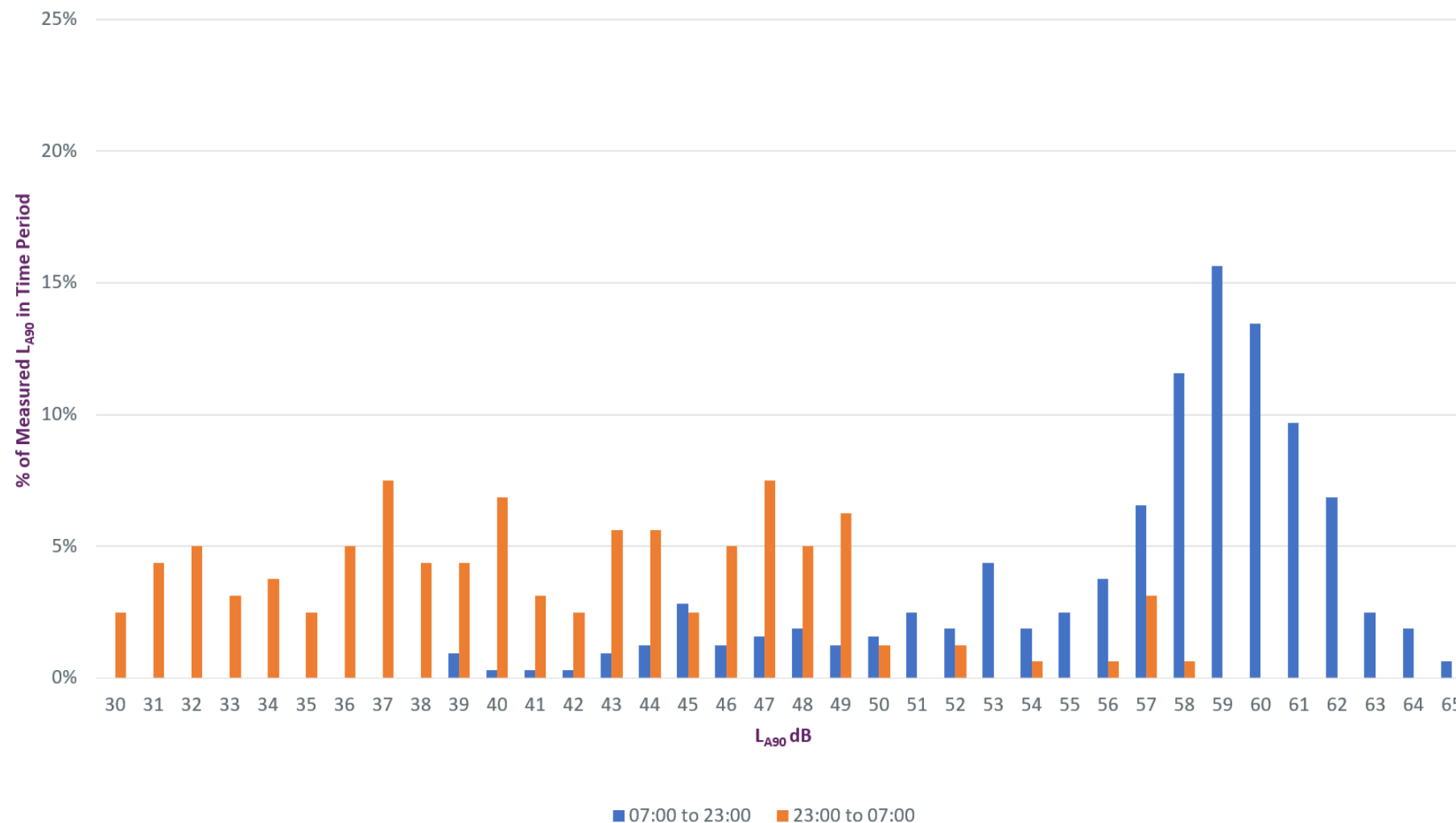
Sound Survey Time History Graph

Measurement Position UP2 - Thursday 12 March 2026 to Monday 16 March 2026



Sound Survey L_{A90} Time Histogram

Measurement Position UP1 - Thursday 12 March 2026 to Tuesday 17 March 2026



Sound Survey L_{A90} Time Histogram

Measurement Position UP2 - Thursday 12 March 2026 to Monday 16 March 2026

