



PREPARED: 22 April 2025

94-98 ADDISON ROAD, READING

PROPG STAGE 1 NOISE RISK ASSESSMENT

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LIST OF ATTACHMENTS

AS13980/SS1	Indicative Site Plan
AS13980/TH1-TH3	Environmental Noise Time Histories
APPENDIX A	Acoustic Terminology

Project Ref:	AS13980	Project Name:	94-98 Addison Road, Reading
Report Ref:	AS13980.250414.R1	Report Title:	ProPG Stage 1 Risk Assessment
Client Name:	Davis Planning Ltd		
Project Manager:	Ian MacArthur		
Report Author:	Ian MacArthur		
Clarke Saunders Acoustics Winchester SO22 5BE		This report has been prepared in response to the instructions of our client. It is not intended for and should not be relied upon by any other party or for any other purpose.	

1.0 EXECUTIVE SUMMARY

- 1.1 Clarke Saunders Acoustics has undertaken an assessment of the existing environmental noise levels at 94-98 Addison Road, Reading, RG1 8EG to determine its suitability for residential development.
- 1.2 The site suitability has been assessed following the principles of ProPG: Planning and Noise *New Residential Development, 2017* (ProPG).
- 1.3 The Stage 1 Risk Assessment has demonstrated that the site has a 'negligible' risk of adverse impact on dwellings with respect to noise.

2.0 INTRODUCTION

- 2.1 Clarke Saunders Acoustics (CSA) has been commissioned to undertake an assessment of the existing environmental noise levels at 94-98 Addison Road, Reading, RG1 8EG to determine its suitability for residential development.
- 2.2 Environmental noise survey data has been used to determine the site's suitability for residential development following the principles of ProPG: Planning and Noise *New Residential Development 2017*.
- 2.3 The ProPG outlines a two-stage methodology for new residential developments. Stage 1 comprises an environmental noise survey and risk assessment to categorise the anticipated noise risk on prospective dwellings. For sites that present a risk that is above 'Negligible', a Stage 2 Acoustic Design Statement is recommended outlining elements of Good Acoustic Design (GAD) followed as well as details of how desirable internal and external noise levels are achieved.
- 2.4 This report sets out the findings of the ProPG Stage 1 Risk Assessment.
- 2.5 Please see Appendix A for a glossary of acoustic terminology used in this report.

3.0 DESCRIPTION OF SITE AND PROPOSALS

- 3.1 The development site lies within a defined urban area in Reading, circa 400m to the north-west of Reading Railway Station. Residential dwellings are sited to the north and south whilst the eastern boundary of the existing dwellings abuts the rear courtyard of New Hope Community Church and attached residential units.
- 3.2 The site is currently unoccupied; however, it is understood that its last use was as an office space for a charity (Berkshire Women's Aid).
- 3.3 Current buildings comprise the end of terrace two-storey building (no. 94), and separate two storey building set back within the courtyard (forming nos. 96-98).
- 3.4 The application proposals involve conversion of no.94 to two one-bedroom flats, with conversion of the building at no.96-98 to form two one-bed flats and a two-bed flat, plus a two-storey office at the northern side.
- 3.5 Road traffic from the surrounding city road network is the predominant noise source. During the site visits, no noise sources from the Community Church were evident, or from

the industrial estate further to the west. Occasional noise contributions from aircraft activity in the area were noted, albeit at a relatively low level.

3.6 The site and surroundings are shown in AS13980/SS1.

4.0 RELEVANT STANDARDS AND GUIDANCE

4.1 PROPG: PLANNING AND NOISE

4.1.1 The Professional Practice Guidance on Planning & Noise – New Residential Development, 2017 (ProPG), outlines a two-step procedure for identifying the noise risk of a site and facilitating early consideration of potential noise issues and good acoustic design.

4.1.2 The two stages are summarised as follows:

- Stage 1 – an initial noise risk assessment of the proposed development site; and
- Stage 2 – a systematic consideration of four key elements, including:
“demonstrating Good Acoustic Design Process; observing internal Noise level guidelines; undertaking an External Amenity Area Noise Assessment; and consideration of Other Relevant Issues”

4.1.3 This report addresses ProPG Stage 1 noise risk assessment.

4.1.4 The use of the ProPG supports wider Government planning and noise policy and guidance, including the National Planning Policy Framework (NPPF) as detailed in Section **Error(Reference source not found-**

4.1.5 Whilst this guidance is designed for use with new residential developments, the core principles apply to assessment of converted buildings. In the absence of any statutory tool for numerical assessment of noise impact on future residential use, it is considered appropriate for use in this assessment.

4.2 OVERHEATING

4.2.1 ProPG states that reasonable steps should be taken to minimise overheating during summer months through good acoustic design. It may be desirable for residents to open windows to mitigate overheating, resulting in higher noise levels internally. Where internal noise level guidelines are likely to be exceeded when windows are open, a more detailed assessment of the potential impact on occupants should be provided in the Stage 2 Acoustic Design Statement.

4.2.2 The Building Regulations 2010: Approved Document O – Overheating (ADO) came into effect in June 2022, introducing noise limits with respect to overheating for new residential dwellings. This development is conversion of an existing building and as such, the requirements of ADO would not apply.

4.3 NATIONAL PLANNING POLICY FRAMEWORK (DECEMBER 2024)

4.3.1 In March 2012 the ‘National Planning Policy Framework’ (NPPF) was introduced as the current planning policy guidance within England. In its current revision, December 2024, paragraph 198 and 200 states the following:

198.

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site of the wider area to impacts that could arise from the development. In doing so they should:

- *Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- *Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for the recreational and amenity for this reason; and*
- *Limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation. "*

200.

"Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed."

5.0 ENVIRONMENTAL NOISE SURVEY

5.1 PROCEDURES & EQUIPMENT

- 5.1.1 A survey of the existing ambient and background noise levels was undertaken at location P1 as presented in the attached summary sheet, AS13958/SS1.
- 5.1.2 Measurements of consecutive L_{Aeq} , L_{Amax} , L_{A10} and L_{A90} sound pressure levels were recorded between 12:00 hours on Friday 11th April 2025 and 12:00 hours Monday 14th April 2025.
- 5.1.3 Measurements were made following procedures in BS7445:1991 *Description and measurement of environmental noise Part 2 – Acquisition of data pertinent to land use*.
- 5.1.4 The weather across the survey period was generally dry with light winds, conditions considered suitable for the determination of environmental noise levels.
- 5.1.5 The following equipment was used for the duration of the survey:
 - 1 No. Rion data logging sound level meter type NL-52;
 - 1 No. Rion sound level calibrator type NC-74;
- 5.1.6 The field calibration of the sound level meters was verified before and after use. The calibration drift was within the limits defined in the Association of Noise Consultants (ANC) Green Book: *Environmental Sound Measurement Guide*. Sound measurements are therefore suitably representative of that experienced at the development site.

- 5.1.7 All equipment has current laboratory calibration, with calibration certificates available upon request.

5.2 SURVEY RESULTS

- 5.2.1 Figures AS13980/TH1-TH3 show the L_{Aeq} , L_{Amax} , L_{A10} and L_{A90} sound pressure levels as time histories at the measurement position.
- 5.2.2 The average noise levels at the monitoring positions are summarised for the daytime and night-time periods and shown below in Table 5.1.

DAYTIME $L_{Aeq,16-hour}$ (07:00 – 23:00)	NIGHT-TIME $L_{Aeq,8-hour}$ (23:00 – 07:00)	TYPICAL NIGHT-TIME L_{AFmax}^*	TYPICAL BACKGROUND L_{A90}^{**}	
			DAYTIME	NIGHT-TIME
47 dB	41 dB	60 dB	36 dB	28 dB

Table 5.1: Summary of measured noise levels

[dB ref.20μPa]

*typical derived from the top 90th percentile of the L_{AFmax} dataset

**typical derived from the bottom 10th percentile of the L_{A90} dataset

- 5.2.3 Whilst it is understood that no external mechanical plant is to be installed to serve the dwellings and offices, the above background (L_{A90}) noise levels are provided, should future plant noise impact assessment be required.

6.0 RISK ASSESSMENT

6.1 PROPG STAGE 1

- 6.1.1 As shown in the appended summary sheet, AS13980/SS1, the site presents a ‘negligible’ risk of adverse impact on dwellings in the development site.
- 6.1.2 The ProPG, states that where risk of potential adverse impact is negligible, “the development site is likely to be acceptable from a noise perspective, and the application need not normally be delayed on noise grounds”.

6.2 OVERHEATING

- 6.2.1 Approved Document O applies to new residential buildings only and would therefore not be applicable to this site.
- 6.2.2 ProPG states that an ‘overheating’ scenario should be considered where, typically on a hot summer day / night, residents may require additional cooling, perhaps more so than might always be achievable through passive whole-dwelling ventilation systems.
- 6.2.3 Given the low ambient noise levels at site, use of openable windows to provide additional ventilation or cooling would readily achieve internal noise level guidelines and present no constraint on the site or surroundings.

7.0 CONCLUSION

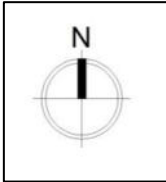
- 7.1.1 The ProPG Stage 1 Noise Risk Assessment has identified the development site as 'negligible' risk in terms of noise impact.
- 7.1.2 On this basis, there are no acoustic constraints on the proposed development that would require consideration or mitigation, and an Acoustic Design Statement (ADS) is not required.



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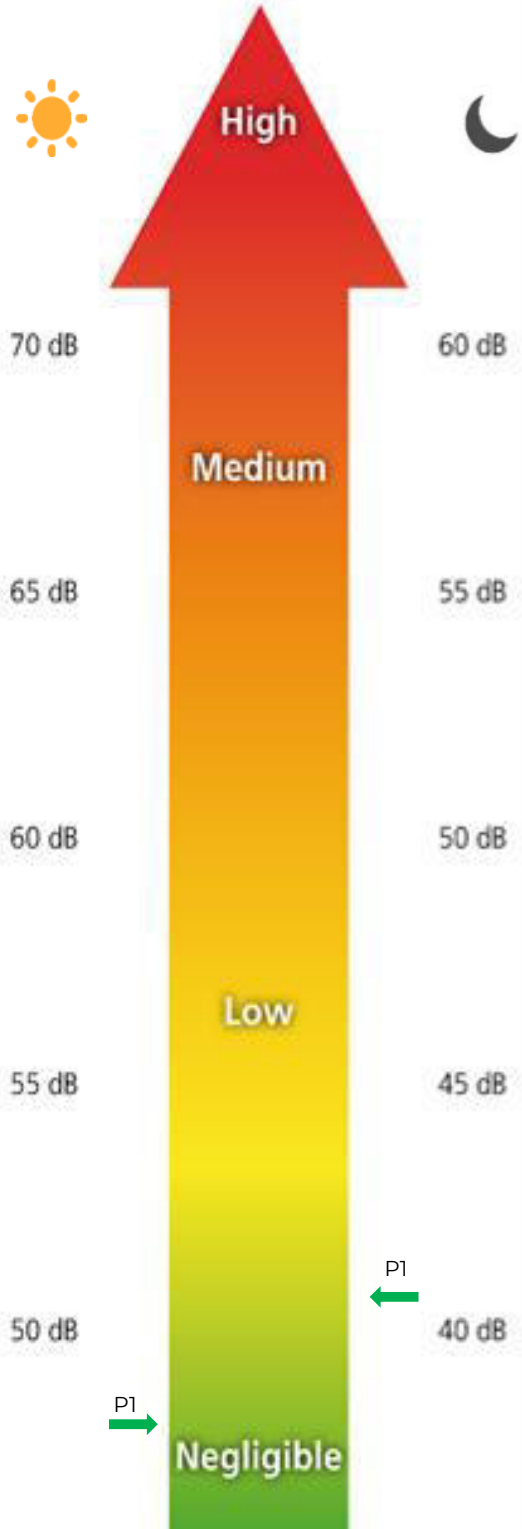
CLARKE SAUNDERS ACOUSTICS

ProPG: Planning & Noise – Stage 1 Risk Assessment Summary



Project: 94-98 Addison Road, Reading
Figure: AS13980/SS1
Date: 14/04/2025

Position P1:
Daytime: 47 dB $L_{Aeq,16hour}$
Night-time: 41 dB $L_{Aeq,8hour}$; 60 dB $L_{Amax,fast}$

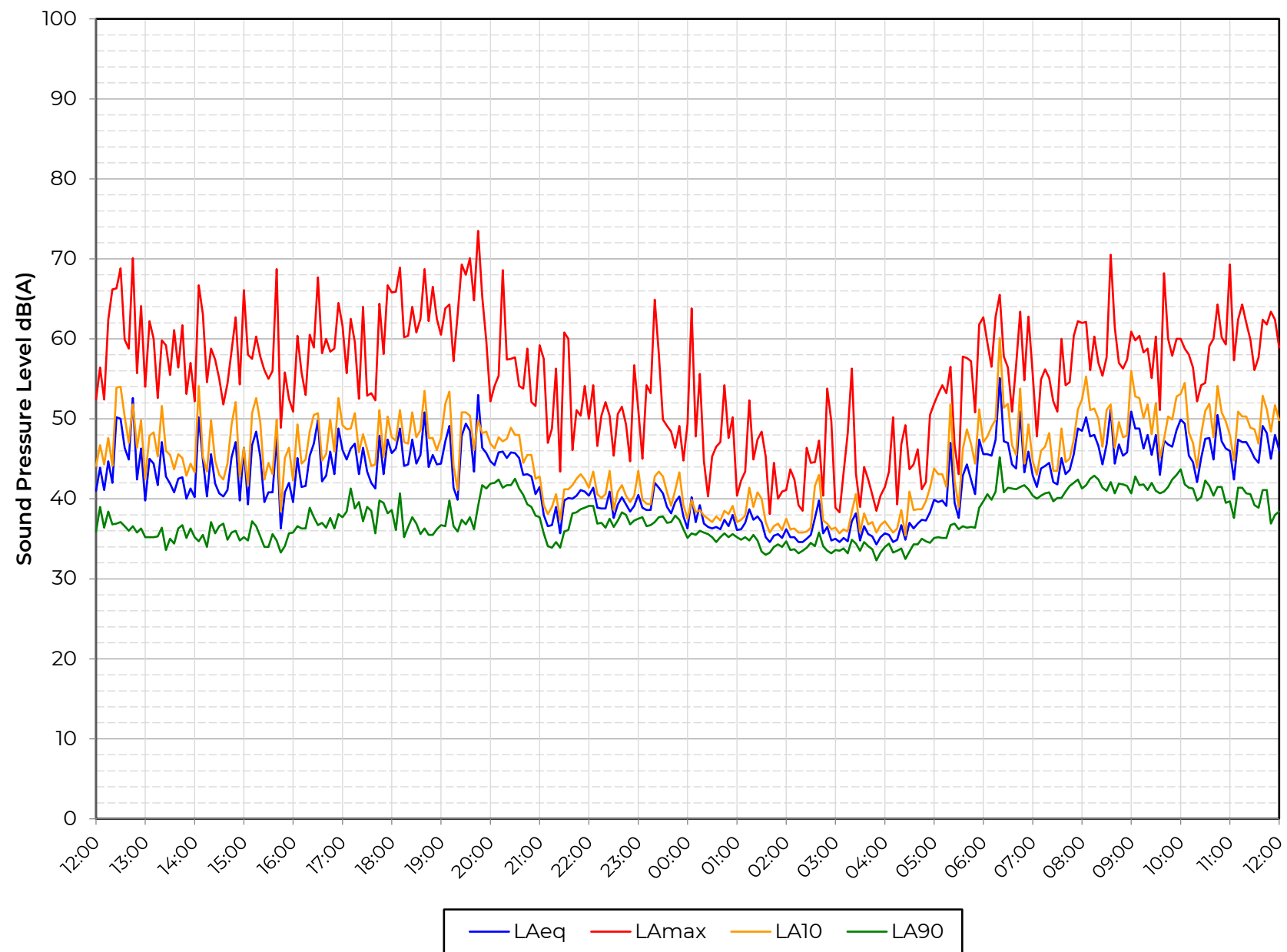


Executive Summary

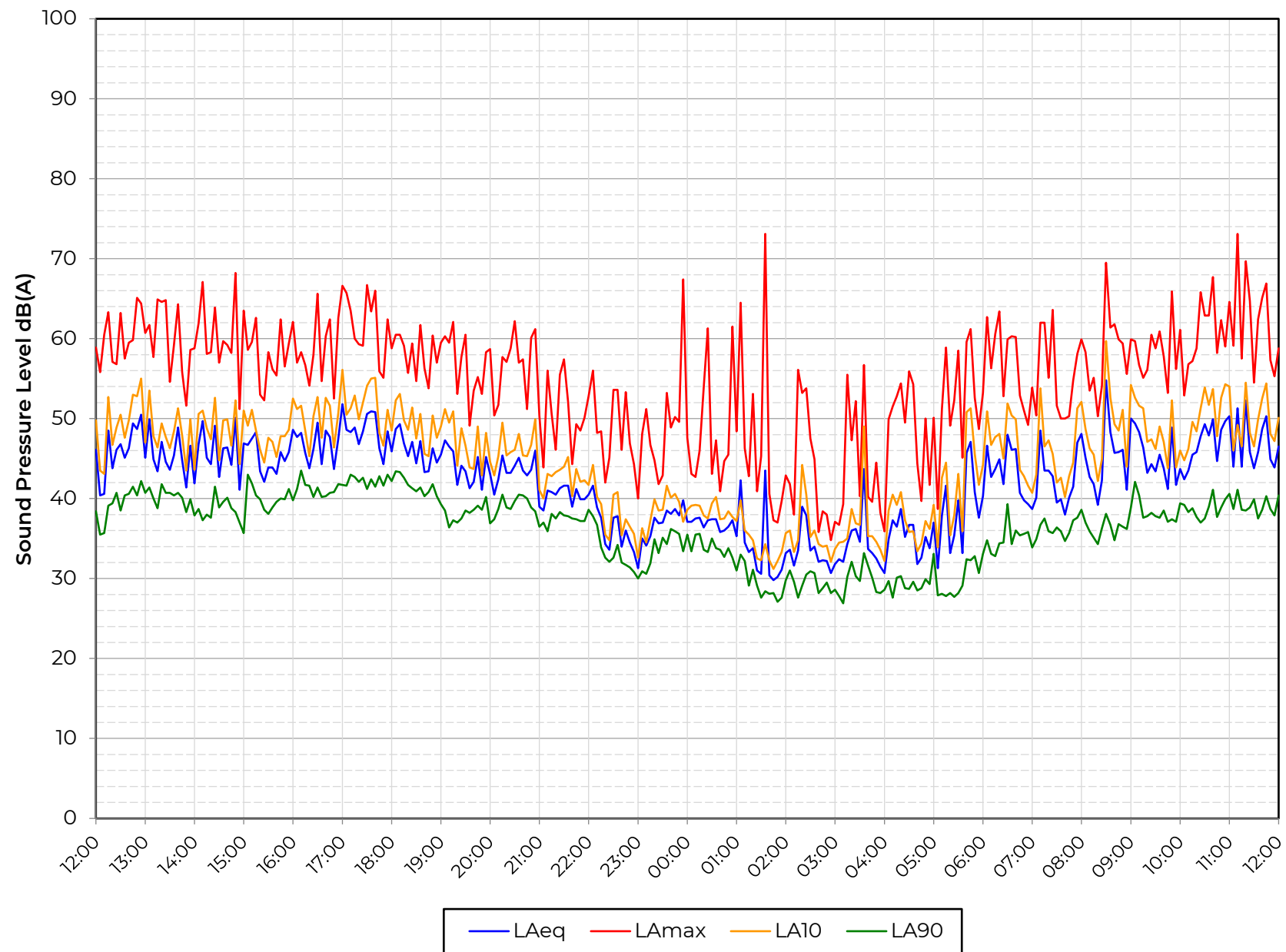
A survey of the existing noise climate was undertaken at one monitoring position between Friday 11th April and Monday 14th April 2025. The positions were chosen to determine the residual noise levels at the development site from road traffic on the surrounding road network.

With regards to the ProPG, noise levels are considered to represent a ‘negligible’ risk of adverse impact on the proposed dwellings. The development site is likely to be acceptable from a noise perspective and the application need not be delayed on noise grounds.

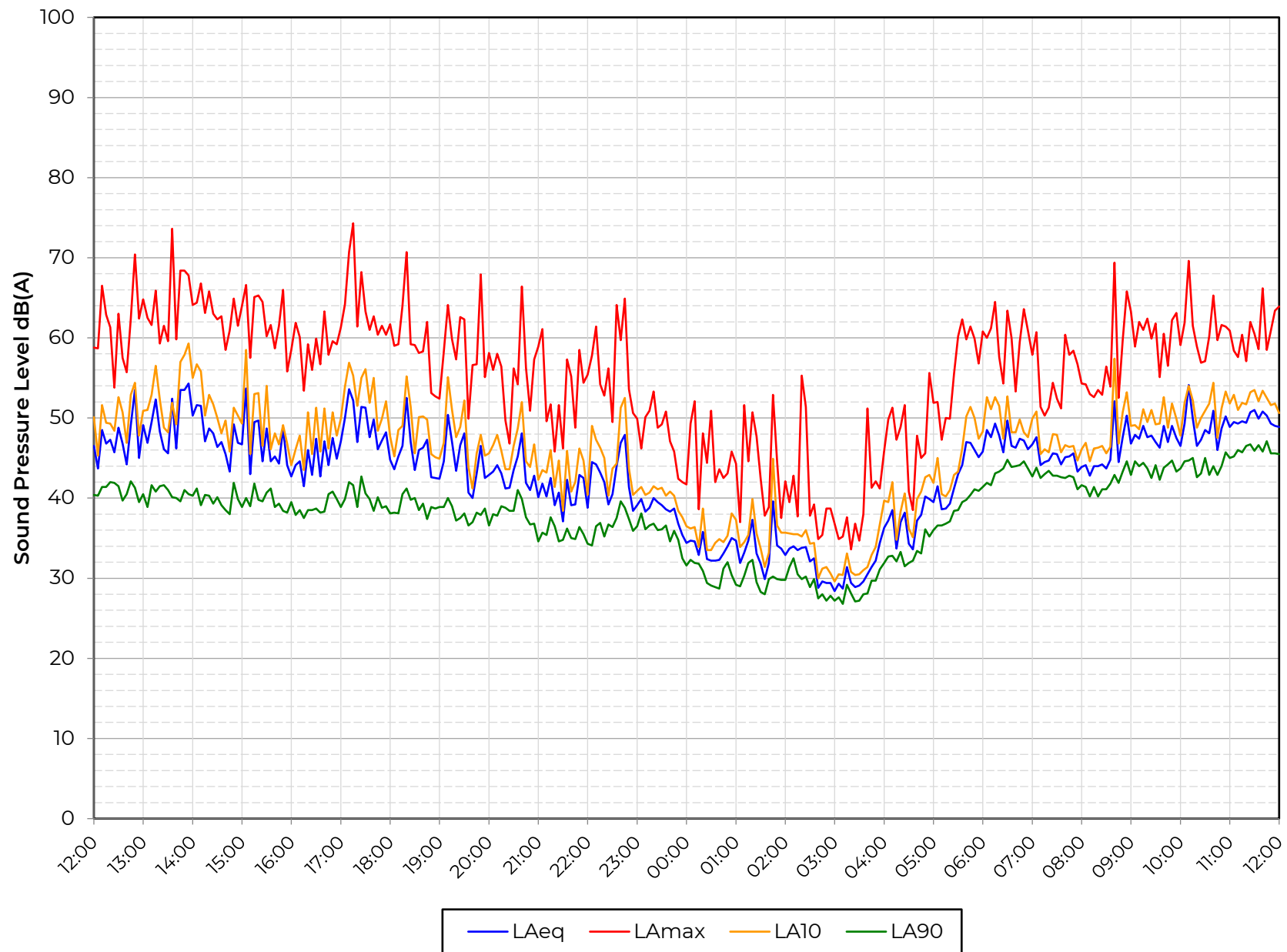
Position 1



Position 1



Position 1



Acoustic Terminology

The human impact of sounds is dependent upon many complex interrelated factors such as 'loudness', its frequency (or pitch) and variation in level. In order to have some objective measure of the annoyance, scales have been derived to allow for these subjective factors.

Sound	Vibrations propagating through a medium (air, water, etc.) that are detectable by the auditory system.
Noise	Sound that is unwanted by or disturbing to the perceiver.
Frequency	The rate per second of vibration constituting a wave, measured in Hertz (Hz), where 1Hz = 1 vibration cycle per second. The human hearing can generally detect sound having frequencies in the range 20Hz to 20kHz. Frequency corresponds to the perception of 'pitch', with low frequencies producing low 'notes' and higher frequencies producing high 'notes'.
dB(A):	Human hearing is more susceptible to mid-frequency sounds than those at high and low frequencies. To take account of this in measurements and predictions, the 'A' weighting scale is used so that the level of sound corresponds roughly to the level as it is typically discerned by humans. The measured or calculated 'A' weighted sound level is designated as dB(A) or L_A .
L_{eq}:	A notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the actual, fluctuating sound measured over that period (e.g. 8 hour, 1 hour, etc). The concept of L_{eq} (equivalent continuous sound level) has primarily been used in assessing noise from industry, although its use is becoming more widespread in defining many other types of sounds, such as from amplified music and environmental sources such as aircraft and construction. Because L_{eq} is effectively a summation of a number of events, it does not in itself limit the magnitude of any individual event, and this is frequently used in conjunction with an absolute sound limit.
L_{10} & L_{90}:	Statistical L_n indices are used to describe the level and the degree of fluctuation of non-steady sound. The term refers to the level exceeded for n% of the time. Hence, L_{10} is the level exceeded for 10% of the time and as such can be regarded as a typical maximum level. Similarly, L_{90} is the typical minimum level and is often used to describe background noise. It is common practice to use the L_{10} index to describe noise from traffic as, being a high average, it takes into account the increased annoyance that results from the non-steady nature of traffic flow.
L_{max}:	The maximum sound pressure level recorded over a given period. L_{max} is sometimes used in assessing environmental noise, where occasional loud events occur which might not be adequately represented by a time-averaged L_{eq} value.
NR	<i>Noise Rating</i> . A single figure noise level rating that takes into account the frequency content of an acoustic environment.
R	<i>Sound Reduction Index</i> . Effectively the Level Difference of a building element when measured in an accredited laboratory test suite in accordance with the procedures laid down in BS EN ISO 10140-2:2010 and corrected for its size and the reverberant characteristics of the receive room.
D	The sound insulation performance of a construction is described in terms of the difference in sound level on either side of the construction in the presence of a sound source on one side and the reverberant characteristics of the adjoining 'receive' space. D is the arithmetic Level Difference in decibels between the

source and receive sound levels when filtered into frequency bands.

D_{nT}	<i>Weighted Standardised Level Difference.</i> As defined in BS EN ISO 717-1, representing the Weighted Level Difference, when standardised for reference receiving room reverberant characteristics.
$D_{n,e}$	Normalised sound insulation of small building elements of fixed dimensions, such as vents, measured in an accredited laboratory test suite in accordance with the procedures laid down in BS EN ISO 10140-2:2010.
$D_{n,f}$	Flanking sound insulation of lightweight elements, such as curtain wall mullions, measured in an accredited laboratory test suite in accordance with the procedures laid down in ISO 10848-2:2006
R_w D_w $D_{nT,w}$ $D_{n,e,w}$ $D_{n,f,w}$	Value of parameter, determined as above, but weighted in accordance with the procedures laid down in BS EN ISO 717-1 to provide a single-figure value.
C, C_{tr}	Spectral adaptation terms to be added to a single number quantity such as $D_{nT,w}$, to take account of the sound insulation within frequency ranges of particular interest.
$L'_{nT,w}$	<i>Weighted Standardised Impact Sound Pressure Level</i> as defined in BS EN ISO 717-2, representing the level of sound pressure when measured within a space where the floor above is under excitation from a calibrated tapping machine, standardised for the receiving room reverberant characteristics.
ΔL_w	Change in impact sound pressure level when a floor is fitted with a 'soft' or resilient covering, as measured in an accredited laboratory test suite in accordance with the procedures laid down in BS EN ISO 10140-3:2010.

Octave Band Frequencies

In order to determine the way in which the energy of sound is distributed across the frequency range, the International Standards Organisation has agreed on "preferred" bands of frequency for sound measurement and analysis. The widest and most commonly used band for frequency measurement and analysis is the Octave Band.

In these bands, the upper frequency limit is twice the lower frequency limit, with the band being described by its "centre frequency" which is the average (geometric mean) of the upper and lower limits, e.g. 250 Hz octave band extends from 176 Hz to 353 Hz. The most commonly used octave bands are:

Octave Band Centre Frequency Hz	63	125	250	500	1000	2000	4000	8000
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Human Perception of Broadband Noise

Because of the logarithmic nature of the decibel scale, it should be borne in mind that sound levels in dB(A) do not have a simple linear relationship. For example, 100dB(A) sound level is not twice as loud as 50dB(A). It has been found experimentally that changes in the average level of fluctuating sound, such as from traffic, need to be of the order of 3dB before becoming definitely perceptible to the human ear. Data from other experiments have indicated that a change in sound level of 10dB is perceived by the average listener as a doubling or halving of loudness. Using this information, a

APPENDIX A

ACOUSTIC TERMINOLOGY AND HUMAN RESPONSE TO BROADBAND SOUND

guide to the subjective interpretation of changes in environmental sound level can be given.

INTERPRETATION

Change in Sound Level dB	Subjective Impression	Human Response
0 to 2	Imperceptible change in loudness	Marginal
3 to 5	Perceptible change in loudness	Noticeable
6 to 10	Up to a doubling or halving of loudness	Significant
11 to 15	More than a doubling or halving of loudness	Substantial
16 to 20	Up to a quadrupling or quartering of loudness	Substantial
21 or more	More than a quadrupling or quartering of loudness	Very Substantial

Earth Bunds and Barriers - Effective Screen Height

When considering the reduction in sound level of a source provided by a barrier, it is necessary to establish the "effective screen height". For example if a tall barrier exists between a sound source and a listener, with the barrier close to the listener, the listener will perceive the sound as being louder if he climbs up a ladder (and is closer to the top of the barrier) than if he were standing at ground level. Equally if he sat on the ground the sound would seem quieter than if he were standing. This is explained by the fact that the "effective screen height" is changing with the three cases above. In general, the greater the effective screen height, the greater the perceived reduction in sound level.

Similarly, the attenuation provided by a barrier will be greater where it is aligned close to either the source or the listener than where the barrier is midway between the two.