



Maple Place, Eastleigh

Noise Assessment of Residential Amenity

2 April 2026

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Comments

Comments

Comments

Revision		Status	
Pnn	Preliminary (shared; non-contractual)	S1	Coordination
Cnn	Contractual	S2	Information
		S3	Review & Comment
		S4	Review & Authorise
		S5	Review & Acceptance
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1. Introduction

Waterman Infrastructure & Environment Ltd (Waterman) has been appointed by Eastleigh Borough Council (*the applicant*) to undertake a noise assessment to determine the suitability of land at Former Crockery and Samson's Gym (237 Chamberlayne Road and 5b Derby Road), Eastleigh, SO50 5HX (*the Site*) for residential development. The proposed Development is referred to as Maple Place.

The Site is located within the administrative boundary of Eastleigh Borough Council (EBC).

A glossary of the acoustic terminology used within this report is presented as **Appendix A**.

1.1 Existing Site Description

The 'brownfield' Site is currently unoccupied. The Former Crockery and Samson's Gym has been demolished. To the north is Derby Road and to the east is Chamberlayne Road, both with residential land use beyond. South and west of the Site are residential. Chamberlayne is a no-through road to Derby Road and therefore only serves the residents. **Figure 1-1** presents the location of the Site.

1.2 The Development

The description of the development is as follows:

"Construction of 12no. dwellings comprising of 9no. apartments and 3no. houses, with associated landscaping, parking and access from Derby Road."

1.3 Noise & Vibration Considerations

The main consideration to residential development is road traffic noise from Derby Road directly north. The surrounding area is residential and therefore no other localised noise sources are anticipated with the exception of some residential traffic on Chamberlayne Road.

Southampton Airport runway is approximately 765 metres to the southwest of the Site. The airport was granted planning permission (F/19/86707) in August 2022 for a 164-metre extension to the northern end of the runway, which was completed in September 2023. The Environmental Statement of the permitted extension reports the Site is outside the 54dB $L_{Aeq,16h}$ 2033 with Development noise contour¹. The 2024 Average Summer Day Contour² for Southampton Airport illustrates that the Site is outside the 51dB $L_{Aeq,16h}$ noise contour. Further to this it is understood that the Site is not under the flight path of aircraft associated with Southampton Airport. This is therefore not considered further.

There are no vibration sources, such as a railway line adjacent or near (within 25 metres) to the Site, which can give rise to tactile vibration or structure borne noise. On this basis vibration is not considered a material consideration to the development and has been scoped out.

¹ ESA2 Appendix 11.2. Appendix 11.2 WSP (Noise & Vibration) Aircraft Noise Contours.

² <https://www.southamptonairport.com/media/dzagitt1/sou-annual-noise-report-2024.pdf>

Figure 1-1: Site Location Plan



Source: MHA (drawing 25-073-CRC-MHA-XX-XX-DR-AR-0001 Rev C02)

2. Planning Policy, Legislation & Guidance

This section presents the key planning policy, legislation and guidance documents pertaining to noise within England relevant to the Proposed Development. These documents set out the aims, many of which are comparable, without providing details on specific noise levels, the latter of which are transposed into British Standards or sector specific guidance which are presented within Section 3 of this report.

2.1 National Planning Policy Framework

The National Planning Policy Framework³ (NPPF December 2024) promotes ‘good design’ as part of ‘sustainable development’ and advocates ‘preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels ofnoise pollution...’

Paragraph 198 of NPPF states ‘*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 or the wider area to impacts that could arise from the development. In doing so they should:*

- a) 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;*
- b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason;’*

Paragraph 200 of the NPPF discusses the ‘agent of change principle’. ‘*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.*’

The NPPF reflects advice within Noise Policy Statement for England (NPSE) in that they promote the avoidance of significant adverse impacts and reduction of other adverse impacts on health and quality of life; set within the context of the Government’s policy on sustainable development.

2.2 Noise Policy Statement For England

Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development the Noise Policy Statement For England⁴ (NPSE) aims to:

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.

It introduces the concept of noise “*effect levels*” although it does not equate these to a specific level of noise as this is likely to be different for different noise sources, receptors and time of day. The effect levels are as follows:

- NOEL – No Observed Effect Level: Level below which no effect on health and quality of life due

³ Ministry of Housing, Communities & Local Government. (12th December 2024, amended 7th February 2025) National Planning Policy Framework. HMSO. Available at <https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf>

⁴ Defra. (2010) Noise Policy Statement For England (NPSE).

to noise can be detected;

- LOAEL – Lowest Observed Adverse Effect Level: Level above which adverse effects on health and quality of life can be detected;
- SOAEL – Significant Observed Adverse Effect Level: Level above which significant adverse effects on health and quality of life occur.

Predominantly, guidance is drawn from the World Health Organisation (WHO) when setting specific noise levels to the above effect levels, which essentially have been transposed into various British Standards, Policy and Guidance.

2.3 Local Planning Policy

The Eastleigh Borough Local Plan 2016-2036 was adopted on 25 April 2022⁵⁶. It sets out the policies and plans to guide future development to 2036. It will be used to determine planning applications in the Borough and replaces the 'saved' policies in the Adopted Local Plan 2001-2011.

Policy DM8, Pollution of Eastleigh Borough's Local Plan 2016-2036 states:

'Development will not be permitted if it is likely to cause loss of amenity or impact on public health or other unacceptable environmental impacts through;

iii. noise or vibration...

Development susceptible to particular forms of pollution will not be permitted:

where it will be affected by such pollution, unless measures can be taken that adequately mitigate the polluting effects; or

where it would inhibit existing economic or other activities giving rise to unacceptable polluting effects.'

⁵ <https://www.eastleigh.gov.uk/planning-and-building/planning-policy-and-implementation/local-plan/local-plan-adoption>

⁶ EBC. (2022). Eastleigh Borough Local Plan (2016-2036). Adopted April 2022.

<https://www.eastleigh.gov.uk/media/11806/to-be-published-final-local-plan-april-2022-v4.pdf>

3. Residential Amenity Noise Criteria

Compliance with the noise assessment criteria presented within Section 3 of this report allows the Planning Policy requirements discussed within Section 2 to be satisfied.

Table 3.1 presents a summary of guideline values currently used in the assessment of residential amenity in England, drawn from BS8233:2014⁷ 'Guidance on Sound Insulation and Noise Reduction for Buildings' and ProPG⁸ 'Planning & Noise – New Residential Development'.

Table 3-1: Residential Noise Criteria

Activity	Location	Noise Level	
		Day time	Night-time
Resting	Living room	35 dB L _{Aeq,16h}	-
Dining	Dining room/area	40 dB L _{Aeq,16h}	-
Sleeping (daytime resting)	Bedrooms	35 dB L _{Aeq,16h}	30 dB L _{Aeq,8h} 45 dB L _{Amax,F} (note 1)
Relaxing, Enjoyment	Private gardens	50-55dB ² L _{Aeq,16h}	-

Note: ¹Not to be exceeded for more than 10 times within the night-time period.

When considering external amenity spaces such as gardens, balconies and terraces, the guidance provided in BS 8233 and reproduced in ProPG is:

“the acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed and noise levels should ideally not be above the range 50-55 dB L_{Aeq,16h}. These guideline values may not be achievable in all circumstances where development might be desirable. In such a situation, development should be designed to achieve the lowest practicable noise levels in these external amenity spaces but should not be prohibited.”

3.1 ProPG New Residential Development

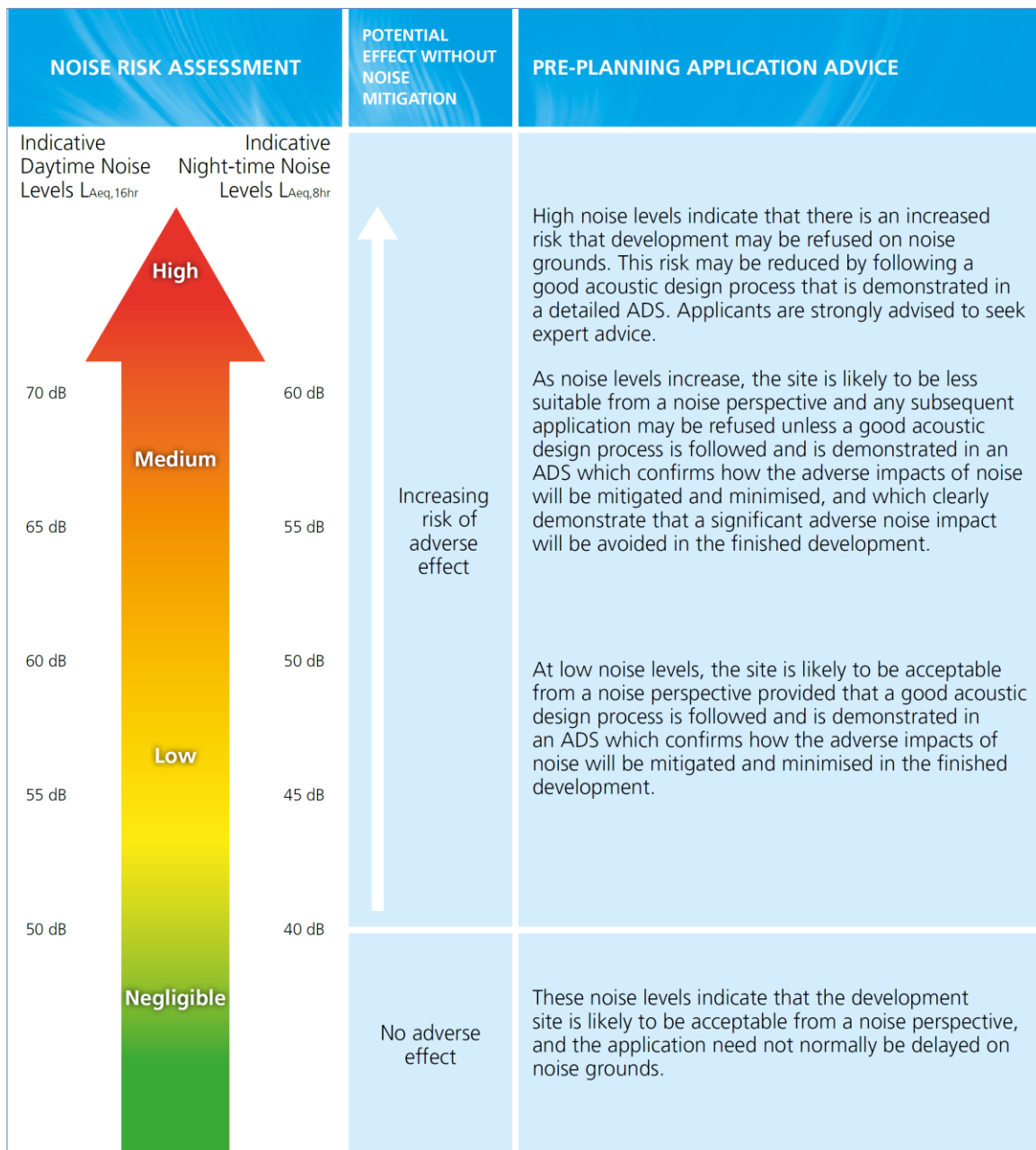
ProPG provides a methodology for undertaking a preliminary noise assessment of a proposed development site. The Stage 1 ProPG Initial Noise Risk Assessment is based on the prevailing day (07:00-23:00) and night-time (23:00-07:00) noise levels at the site, established through either measurement or prediction, without any new or additional mitigation. This provides an indication of the likely risk of adverse effects from noise were no subsequent mitigation be included as part of the development proposals. It should indicate whether the Site is considered to pose a negligible, low, medium or high risk from a noise perspective. It is on this basis that the preliminary noise assessment of the Site will be undertaken.

Figure 3.1 has been reproduced from ProPG illustrating the associated noise risks based on the prevailing noise levels. It is important to note that the assessment of noise risk serves to provide an indication as to the initial suitability of the site for residential development and as to what the acoustic issues are likely to be.

⁷ BSI (2014) BS8233:2014 'Guidance on sound insulation and noise reduction for buildings.' BSI

⁸ ANC, IoA, CiEH. (2017) Professional Practice Guidance (ProPG) on Planning & Noise. New Residential Development. Ingenious Design.

Figure 3-1: ProPG Stage 1 Initial Site Noise Risk Assessment



Note:

- 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, $L_{Aeq,8hr}$ is for night-time 2300-0700.
- An indication that there may be more than 10 noise events at night (2300-0700) with $L_{Amax,F} > 60dB$ means the site should not be regarded as negligible.

3.2 Approved Document O - Overheating

Approved Document O⁹ states:

“Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits. a. 40dB $L_{Aeq,T}$, averaged over 8 hours (between 11pm and 7am). b. 55dB L_{AFmax} , more than 10 times a night (between 11pm and 7am).”

This is roughly equivalent to external prevailing noise level of ≥ 50 dB $L_{Aeq,8h}$ and 65dB L_{AFmax} . Where these conditions prevail, the assumption is bedroom windows would be closed during the nighttime period and that reliance can't be placed on the use of opening of windows to combat overheating.

⁹ HM Government. (2021). The Building Regulations 2010 – Approved Document O – Overheating. Requirement O1: Overheating mitigation Regulations: 40B.
<https://assets.publishing.service.gov.uk/media/6218c5aad3bf7f4f0b29b624/ADO.pdf>

4. Baseline Environmental Noise Conditions

A baseline environmental noise survey was undertaken between Wednesday 25th March to Friday 27th March 2026 over a 48-hour weekday period. An environmental noise logger was installed at the northern boundary with the Derby Road (LT1) with the other at the south-eastern boundary with Chamberlayne Road (LT2).

The noise monitoring locations are shown on **Figure 4-1** with a summary of the measured noise levels presented as **Table 4-1**. Full details are presented in **Appendix B**.

Table 4-1: Summary of Measured Noise Levels

Location	Period	dB			dB LA90,range	dB LA90,Mode
		dB LAeq,T	LAFmax (90th perc)	dB LA10,T		
LT1 Derby Road (Northern Boundary)	Day (07:00-23:00)	61	78	63	41-55	51
	Night (2300-0700)	53	73	49	35-54	41
LT2 Chamberlayne Road (Eastern Boundary)	Day (07:00-23:00)	55	73	57	43-55	51
	Night (2300-0700)	50	65	49	35-55	43

The dominant noise source incident on the Site was noted to be road traffic noise from Derby Road.

4.1 CadnaA Noise Model

A 3-dimensional CadnaA noise model of the existing Site and surrounds was developed using OS free data¹⁰, Defra LiDAR¹¹ data and drawings provided by MH Architects (Site Location Plan drawing reference 25-073-CRE-MHA-XX-XX-DR-AR-0001 Rev C02), which is considered a robust approach given the site, setting and surrounds. The calculation methodology used was ISO 9613 (2024) with 0.5 absorption. The noise model was calibrated using the measured noise levels.

Table 4-2 presents a comparison between the measured noise levels and those predicted using CadnaA noise modelling software.

¹⁰ [OS OpenMap - Local | Open Data Downloads | Data | OS Data Hub](https://osdatahub.os.uk/data/downloads/open/OpenMapLocal)
<https://osdatahub.os.uk/data/downloads/open/OpenMapLocal>

¹¹ [Defra Survey Data Download](https://environment.data.gov.uk/survey) <https://environment.data.gov.uk/survey>

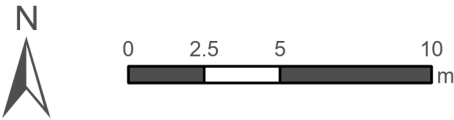
Table 4-2: Comparison Between Measured & Predicted Noise Levels

Location (dominant source)	Period	Measured Noise Level dB L _{Aeq}	Cadna dB L _{Aeq}	CadnaA minus Measured
LT1 (Derby Road)	Day	61.1	60.9	-0.2
	Night	52.5	52.6	+0.1
LT2 (Chamberlayne Road)	Day	55.3	55.5	+0.2
	Night	49.5	47.2	-2.3

There is good correlation between the predicted noise levels using Cadna noise modelling software and the measured noise levels. It is considered this provide a robust basis on which to assess the suitability of the site for residential use.



- Site Boundary
- Noise Monitoring Locations



Project Details	WIE18174-109: Maple Place
Figure Title	Figure 4.1: Noise Monitoring Locations
Figure Ref	WIE18174-109_GIS_NM_4.1A
Date	April 2026
File Location	Projects\WIE18174-109\GIS\WIE18174-109_GIS_NM
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5. Noise Assessment

5.1 ProPG Initial Site Noise Risk Assessment

The calibrated CadnaA noise model has been used to produce noise contour plots across the site without any buildings and hoarding (undeveloped Site) to provide an indication of the ProPG noise risk. **Figure 5-1** presents the predicted daytime noise contours at 1.5m above ground level and **Figure 5-2** presents the predicted night-time noise contours at 4.0m above ground level, which generally reflects the location of residents during these time periods (daytime ground floor/garden; night-time first floor level bedroom), although it is appreciated that the proposed Development is multi-storey.

During the daytime period the noise risk is medium (orange) adjacent to Derby Road reducing to low-medium (yellow), decreasing to low (light green) within the southern area of the Site. During the night-time period, approximately 1/3 of the site (northern area) is medium noise risk (orange) with 2/3 of the site (southern area) being low-medium risk (yellow) with a strip of medium-high risk (brown) adjacent to Derby Road. This indicates that a good acoustic design process will need to be followed to mitigate and minimise the effects of noise within the northern area of the site. As previously stated, this is for the undeveloped site. Once the Development is built out noise levels within the southern area of the Site and rear facades of the Development buildings will be significantly lower, as illustrated in Sections 5.2 and 5.3.

Figure 5-1: ProPG Daytime Noise Contour Plot dB L_{Aeq,16h} (1.5m agl) – Undeveloped



Figure 5-2: ProPG Night-Time Noise Contour Plot dB L_{Aeq,8h} (4.0m agl) – Undeveloped



5.2 External Amenity

With regard to external amenity, a daytime noise level of $\leq 55\text{dB L}_{Aeq,16h}$ is generally the accepted approach based on current credited guidance within ProPG and BS8233. **Figure 5-3**, indicates that this condition is predicted to be satisfied within the garden areas at the rear of the houses and apartments together with the area west of Chamberlayne Road. Balconies facing Derby Road are predicted to exceed the guideline value of $\leq 55\text{dB L}_{Aeq,16h}$ with levels above 60dB(A) , which is not unexpected for areas facing a main road.

Noise levels within the balcony areas facing Derby Road could be reduced further through provision of solid balustrades.

5.3 Internal Ambient Noise Levels

It is generally accepted that where daytime façade noise levels are $\leq 50\text{dB L}_{Aeq,16h}$ the internal ambient noise level (IANL) with windows open (based on 50% glazing) would be $\leq 35\text{dB L}_{Aeq,16h}$ thereby satisfying the criteria of BS8233:2014. Similarly, night-time façade noise levels of $\leq 45\text{dB L}_{Aeq,8h}$ and $\leq 60\text{dB L}_{Amax}$ would result in IANLs of $\leq 30\text{dB L}_{Aeq,8h}$ and $\leq 45\text{dB L}_{Amax}$ with windows open, again satisfying the criteria of BS8233.

Where the design intent is a natural ventilation strategy through opening of windows then BS8233:2014 considers that IANLs could be increased by 5dB and reasonable internal conditions still provided. This equates to a daytime façade noise level of $\leq 55\text{dB L}_{Aeq,16h}$ and night-time façade noise levels of $\leq 50\text{dB L}_{Aeq,8h}$ and $\leq 65\text{dB L}_{Amax}$. This approach is also reflected in ProPG.

Figures 5-4 and 5-5 indicate that for the northern façade of the apartments including returns (east and west facades), guideline IANLs would be exceeded when windows are open. The noise levels are such that enhanced glazing would be required. On facades which are screened, such as the southern façade of the apartments, noise levels are sufficiently reduced that reasonable IANLs are predicted to be satisfied when windows are open and therefore there are no specific mitigation requirements. The predicted façade noise

levels on the eastern facades of houses on Chamberlayne Road would result in reasonable IANLs with windows open, excepting the house nearest Derby Road. At the rear and south façade of the houses, due to screening from the building structure itself, there are no noise mitigation considerations for the houses, good IANLs would be achieved with windows open.

Figure 5-3: Daytime External Amenity

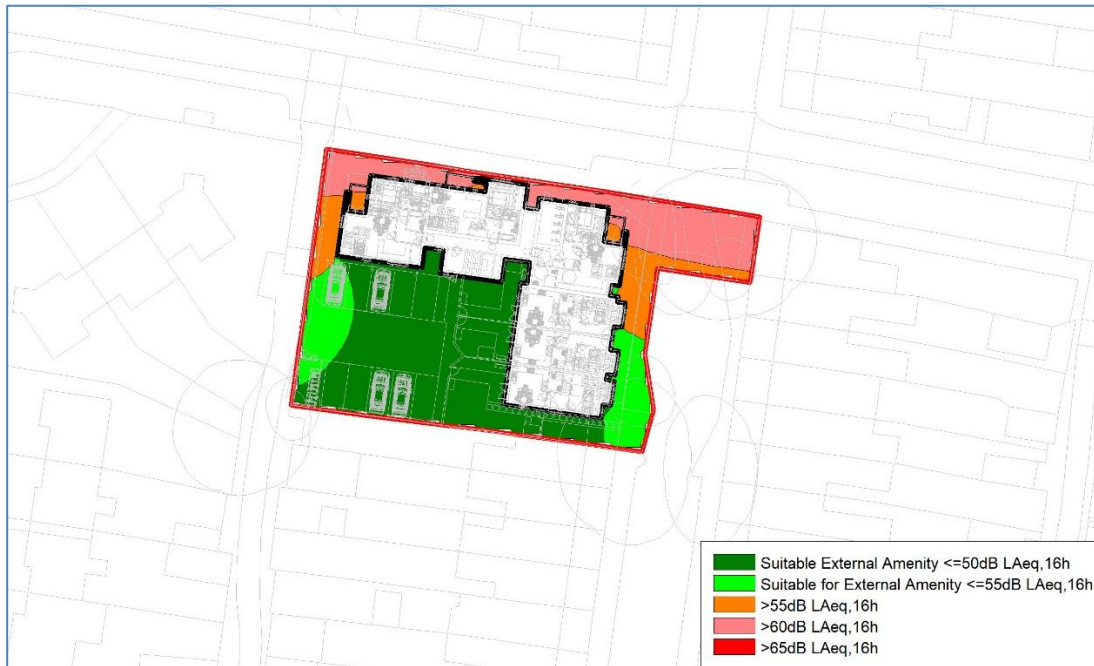


Figure 5-4: Daytime Façade Noise Levels dB LAeq,16h and Indicative Mitigation

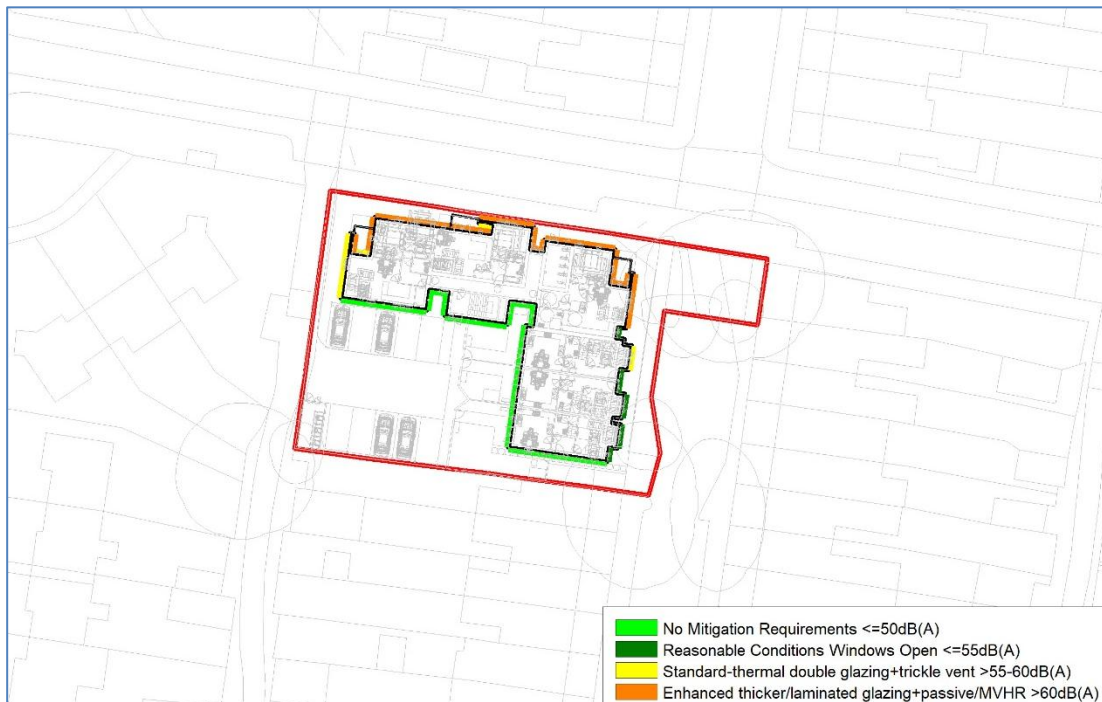


Figure 5-5: Night-Time Façade Noise Levels dB $L_{Aeq,16h}$ and Indicative Mitigation (Bedrooms)

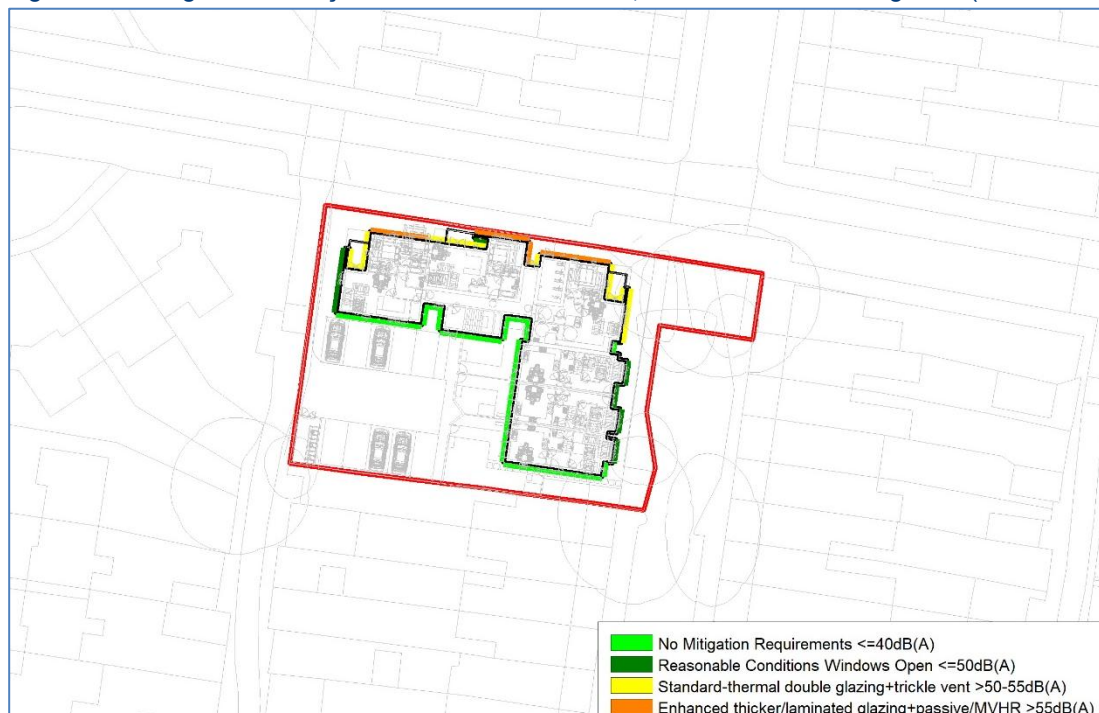


Table 5-1 presents preliminary glazing and ventilation sound insulation specification based on external noise levels. On the northern façade of the apartments preliminary indication is glazing affording 33dB R_{w+Ctr} and ventilator affording 39dB $D_{n,e,w+Ctr}$ will be required to satisfy BS8233 guideline IANLs.

Table 5-1: Acoustic Specification for Glazing and Ventilation (*Transportation noise only*)

External Noise Level Not Exceeding		Acoustic Performance Requirement	
Day dB L_{Aeq}	Night dB L_{Aeq} (dB L_{AFmax})	Windows dB R_{w+Ctr}	Ventilators dB $D_{n,e,w+Ctr}$
<50	<45 (<60)	No requirement	
57	52 (67)	26 (Standard Thermal Glazing)	32 (Standard Window Mounted Trickle Ventilator)
60	55 (70)		
63	58 (73)	29	35
66	61 (76)	32	38
69	64 (79)	35	41
72	67 (82)	38	44

5.4 Ventilation & Approved Document O

For the rear (southern) façade of the apartments the predicted noise levels indicate that opening of windows could be used to combat overheating.

For the rear (western) façade of the houses the predicted noise levels indicate that opening of windows could be used to combat overheating. This is also the case for the eastern façade of the houses, excepting the house nearest to Derby Road.

6. Conclusions

The conclusions are as follows:

- The dominant noise source at the site is road traffic noise from Derby Road to the north. It exhibits diurnal variation with lower noise levels during the night-time period than the daytime period. The average ambient night-time level is approximately 6 to 9dB lower than the daytime level.
- ProPG initial site noise risk assessment indicates the site is predominantly medium risk in the northern area reducing to low-medium risk within the southern area.
- Guideline IANLs are predicted to be exceeded with windows open on the northern façade and returns of the apartments facing Derby Road. The predicted noise levels are such that enhanced glazing is required on the northern facades. Preliminary indication is glazing affording 33dB R_{w+Ctr} and ventilator affording 39dB $D_{n,e,w+Ctr}$ is likely to be required. At the southern (screened) facades of the apartments and western (screened) facades of the houses, the predicted noise levels indicate no specific mitigation is required and good IANLs would be achieved with windows open.
- Reasonable IANLs are predicted to be satisfied on the eastern façade of the houses on Chamberlayne Road with windows open, excepting the eastern façade of the house nearest Derby Road.
- Predicted daytime noise levels within the garden areas at the rear of the houses and apartments satisfy guideline values and are therefore suitable for external amenity with no specific mitigation. Noise levels within balcony areas facing Derby Road are predicted to exceed 60dB $L_{Aeq,16h}$. Levels could be reduced further through provision of solid balustrades.
- Opening of windows at the rear (southern) façade of the apartments could be used to combat heating. This would not however be a viable option for the northern façade of the apartments facing Derby Road (and returns) due to prevailing road traffic noise levels.
- Opening of windows of the houses to combat overheating is viable, with the exception of the eastern façade of the house nearest Derby Road.

In summary, suitable residential amenity could be provided through provision of suitable glazing and ventilation. The predicted noise levels are such that although mitigation needs to be incorporated for the exposed facades, it would not make development unfeasible.

Appendices

A. Glossary of Acoustic Terminology

AAWT-18h	Annual Average Week Day Traffic over the time period 0600-0000. Only includes Monday to Friday data.																		
Ambient sound	The totally encompassing sound in a given situation at a given time, usually composed of sound from all sources near and far.																		
Assessment period	The period in a day over which assessments are made.																		
A-weighting	A frequency weighting applied to measured or predicted sounds levels in order to compensate for the non-linearity of human hearing.																		
Background noise	Background noise is the term used to describe the noise measured in the absence of the noise under investigation. It is described as the average of the minimum noise levels measured on a sound level meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L_{90} noise level (see below).																		
Background Sound Level dB $L_{A90,T}$	A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels.																		
Broadband	Containing the full range of frequencies.																		
Decibel [dB]	The level of noise is measured objectively using a Sound Level Meter. This instrument has been specifically developed to mimic the operation of the human ear. The human ear responds to minute pressure variations in the air. These pressure variations can be likened to the ripples on the surface of water but of course cannot be seen. The pressure variations in the air cause the eardrum to vibrate and this is heard as sound in the brain. The stronger the pressure variations, the louder the sound that is heard. The range of pressure variations associated with everyday living may span over a range of a million to one. On the top range may be the sound of a jet engine and on the bottom of the range may be the sound of a pin dropping. Instead of expressing pressure in units ranging from a million to one, it is found convenient to condense this range to a scale 0 to 120 and give it the units of decibels. The following are examples of the decibel readings of every day sounds: <table> <tr> <td>Four engine jet aircraft at 100m</td><td>120 dB</td></tr> <tr> <td>Riveting of steel plate at 10m</td><td>105 dB</td></tr> <tr> <td>Pneumatic drill at 10m</td><td>90 dB</td></tr> <tr> <td>Circular wood saw at 10m</td><td>80 dB</td></tr> <tr> <td>Heavy road traffic at 10m</td><td>75 dB</td></tr> <tr> <td>Telephone bell at 10m</td><td>65 dB</td></tr> <tr> <td>Male speech, average at 10m</td><td>50 dB</td></tr> <tr> <td>Whisper at 10m</td><td>25 dB</td></tr> <tr> <td>Threshold of hearing, 1000 Hz</td><td>0 dB</td></tr> </table>	Four engine jet aircraft at 100m	120 dB	Riveting of steel plate at 10m	105 dB	Pneumatic drill at 10m	90 dB	Circular wood saw at 10m	80 dB	Heavy road traffic at 10m	75 dB	Telephone bell at 10m	65 dB	Male speech, average at 10m	50 dB	Whisper at 10m	25 dB	Threshold of hearing, 1000 Hz	0 dB
Four engine jet aircraft at 100m	120 dB																		
Riveting of steel plate at 10m	105 dB																		
Pneumatic drill at 10m	90 dB																		
Circular wood saw at 10m	80 dB																		
Heavy road traffic at 10m	75 dB																		
Telephone bell at 10m	65 dB																		
Male speech, average at 10m	50 dB																		
Whisper at 10m	25 dB																		
Threshold of hearing, 1000 Hz	0 dB																		
dB(A): A-weighted decibels	The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the 'A' filter. A sound level measured with this filter switched on is denoted as dB(A). Practically all noise is measured using the A filter. The sound pressure level in dB(A) gives a close indication of the subjective loudness of the noise.																		
Façade Noise Level	A noise level measured or predicted at the façade of a building, typically at a distance of 1m, containing a contribution made up of reflections from the façade itself (+3 dB).																		
Free Field Noise Level	A noise level measured or predicted which is unaffected by reflections, generally taken as being 3m from any reflecting surface excepting the ground.																		
L_{Amax} noise level	This is the maximum noise level recorded over the measurement period.																		
L_{Amin} noise level	This is the lowest level during the measurement period.																		

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$L_{Aeq,T}$ noise level	This is the 'equivalent continuous A-weighted sound pressure level, in decibels' and is defined in British Standard 7445 as the 'value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time'. It is a unit commonly used to describe construction noise, noise from industrial premises and is the most suitable unit for the description of other forms of environmental noise.
L_{A90} noise level	This is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during quieter periods. It is often referred to as the background noise level and is used in the assessment of disturbance from industrial noise.
L_{A10} noise level	This is the noise level which is achieved for 10% of the monitoring period and is often used to describe road traffic noise.
Rating Level, dB $L_{Ar,Tr}$	Specific sound level plus any adjustment for the characteristic features of the sound.
Residual Sound	Ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound source.
Sound Reduction Index (R)	The sound reduction index is a single-number rating of the sound reduction through a wall or other building element. Since the sound reduction may be different at different frequencies, test measurements are subjected to a standard procedure which yields a single number that is about equal to the average sound reduction in the middle of the human hearing range.
Specific Sound Level, $L_{Aeq,Tr}$	Equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given time interval T.
Weighted Sound Reduction Index dB R_w	Single number rating used to describe the laboratory airborne sound insulation properties of a material or building element over a range of frequencies, typically 100-3150Hz.
C_{TR}	An adjustment to the R_w scale to take account of the lower performance against a typical spectrum of road traffic noise dominated by low frequencies.
$D_{ne,W}$	Weighted element normalised level difference.
PPV	Ground vibration is measured in terms of Peak Particle Velocity (PPV) with units in mm/s. It should be noted that the PPV refers to the movement within the ground of molecular particles and not surface movement. The displacement value in mm refers to the movement of particles at the surface (surface movement).

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B. Baseline Noise Survey

Table B1 presents the equipment detail used for the baseline noise survey.

Table B1: Equipment Detail

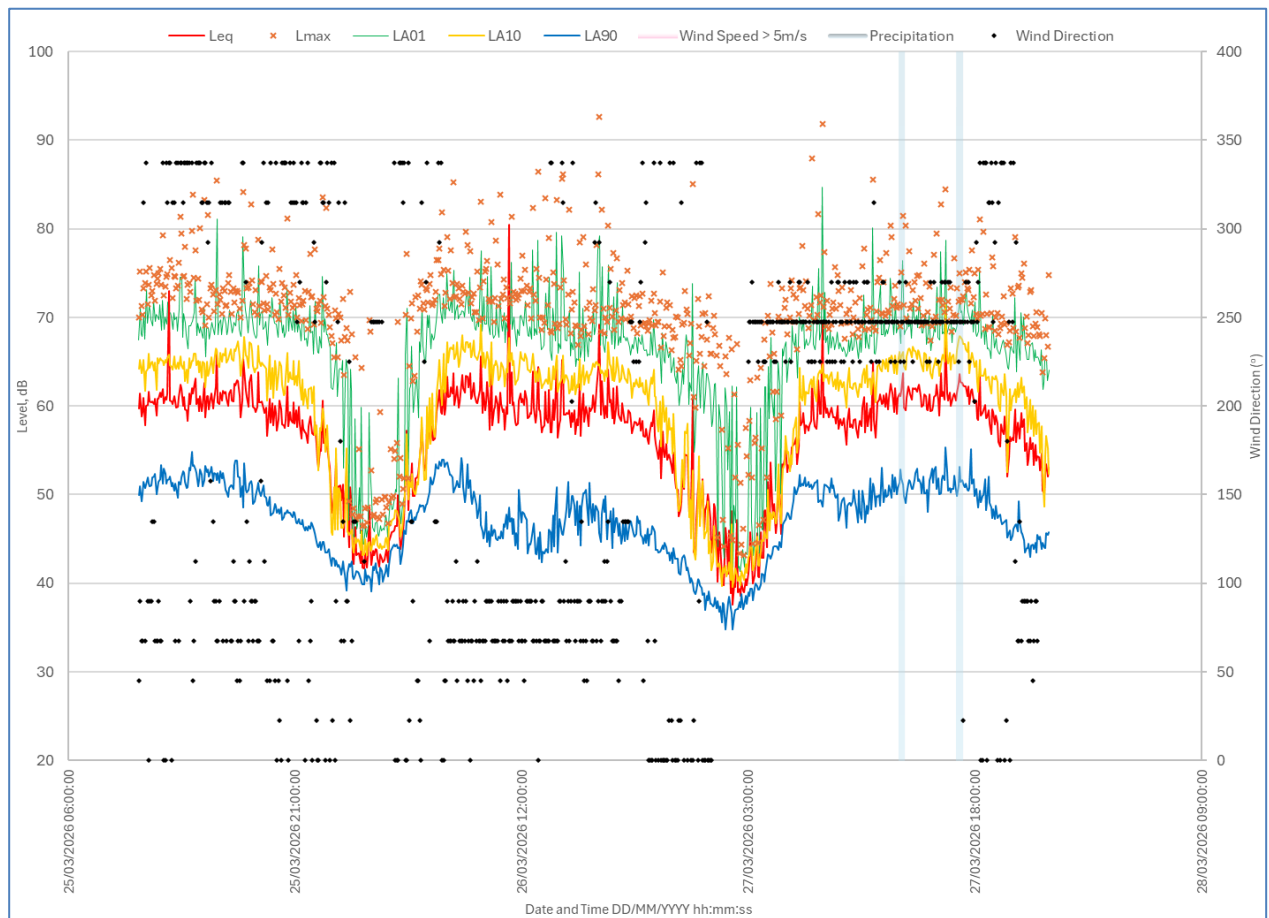
Location	Description	Serial Number	Date of Last Calibration
LT1 Derby Road	Rion NL-52 Type 1 Sound Level Meter	98734	27 th February 2025 Certificate Number 1511409-3
	Rion NH-25 Pre-amplifier	87555	
	Rion UC-59 Microphone	14063	
LT2 Chamberlayne Road	Rion NL-52 Type 1 Sound Level Meter	921231	11 th April 2024 Certificate Number 1508401-1
	Rion NH-25 Pre-amplifier	21273	
	Rion UC-59 Microphone	04266	
All	Acoustic Calibrator Rion NC-75	35270122	1 st October 2025 Certificate Number 1513567-2

The equipment was field calibrated at the beginning and end of the noise survey with no significant drift in calibration.

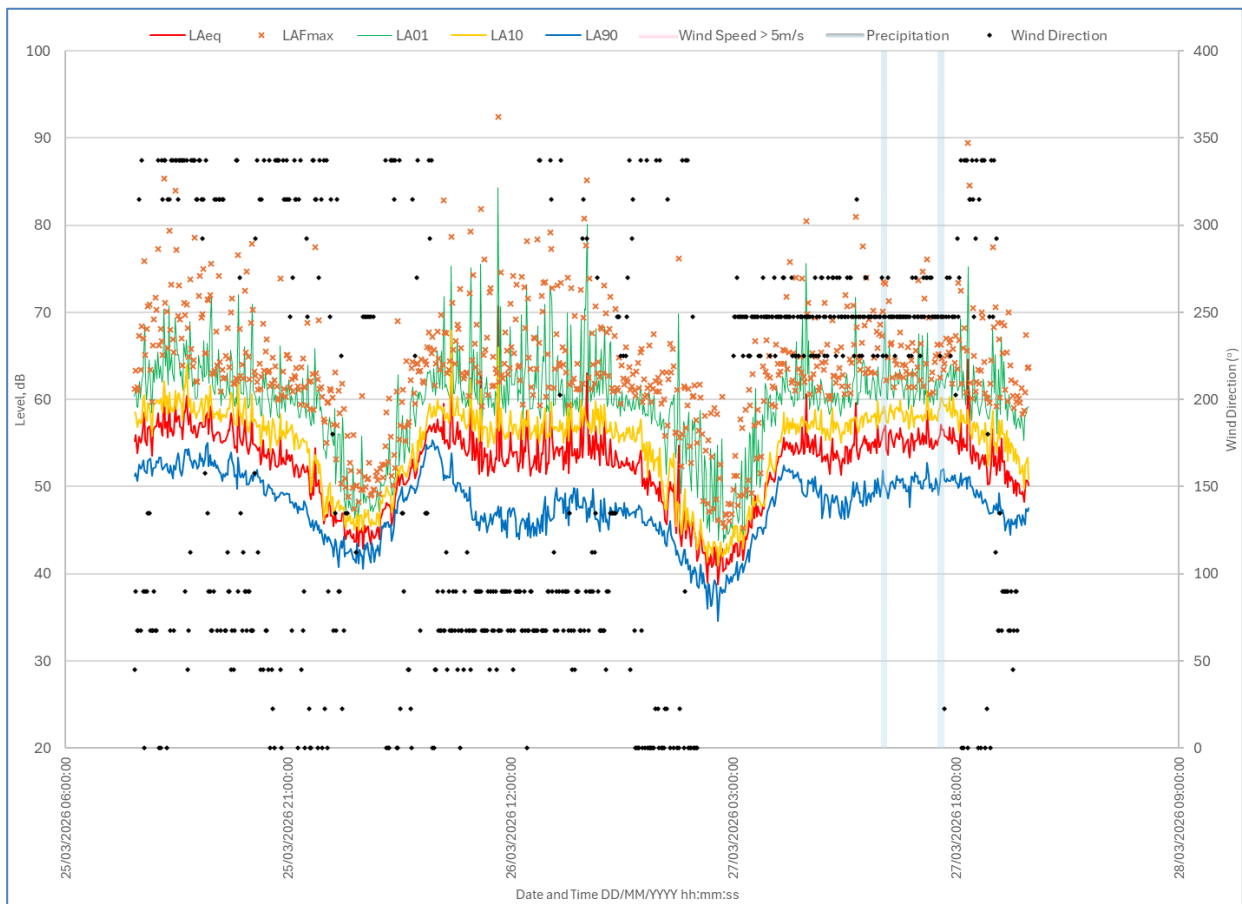
The weather during the survey was suitable for valid noise measurement with wind speed not exceeding 5m/s and predominantly no rain. Data sets during periods of rain were not included in the data analysis.

Graph B1 presents the time history plot of measured noise levels at monitoring location LT1 (Derby Road), and **Graph B2** presents the time history plot of LT2 (Chamberlayne Road).

Graph B1: Derby Road



Graph B2: Chamberlayne Road



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