



PREPARED: 20 July 2026

29A Castle Street, Salisbury

Noise Impact Assessment

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LIST OF ATTACHMENTS

AS14666/SP1	Indicative Site Plan
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AS14666/TH1-TH8	Environmental Noise Time Histories
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Project Ref:	AS14666	Project Name:	29A Castle Street, Salisbury
Report Ref:	AS14666.260625.R1.1	Report Title:	Noise Impact Assessment
Client Name:	Fanfic Ltd		
Project Manager:	Michael Symmonds		
Report Author:	Michael Symmonds		
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 assessed the noise environment in the vicinity of 29A Castle Street, Salisbury, SP1 1TT, to assess the site's suitability for residential use.
- 1.2 An environmental noise survey has measured noise intrusion from nearby external plant units, the results of which have indicated that the building's existing glazing is capable of controlling noise ingress to suitable internal levels, with reference to the Wiltshire Council Public Protection Department Consultation response. The target noise levels are achieved with windows closed.
- 1.3 Consideration has been given to background ventilation for the site, and acoustic performances for trickle vents have been specified where these may be installed as part of the proposed window frame replacements.
- 1.4 Should it be desired for the target internal noise levels to be met with open windows, secondary glazing would allow for a plenum-type window opening. Such a system can be designed to provide a suitable inside to outside noise level difference such that the desirable targets can be achieved during both daytime and night-time periods.
- 1.5 The building can be made acoustically suitable for residential use, where nearby noise sources should not result in adverse impacts on the future occupiers of the development.

2.0 INTRODUCTION

- 2.1 Fanfic Ltd proposes to convert 29A Castle Street, Salisbury, SP1 1TT, to a Class C3 dwellinghouse (application ref. PL/2026/02496). The site currently falls under Use Class E and is a Grade II Listed Building.
- 2.2 Clarke Saunders Acoustics (CSA) has been commissioned to undertake a noise impact assessment to determine if the site can be made suitable for residential use, focussing on the internal ambient noise levels within proposed habitable rooms.
- 2.3 A summary of the acoustic terminology used throughout the report is provided in Appendix A.

3.0 COMPETENCE

- 3.1 This project has been managed by Michael Symmonds, a Senior Consultant at Clarke Saunders Acoustics (CSA), who is also the author of this report.
- 3.2 Michael Symmonds holds a Master's degree in Acoustical Engineering, obtained from the Institute of Sound and Vibration Research at the University of Southampton. He has over eight years of experience in the consultancy field and is a Corporate Member of the Institute of Acoustics.
- 3.3 The environmental noise survey was undertaken by Joel Bird, an Assistant Consultant at CSA under the supervision of Michael Symmonds.
- 3.4 Joel Bird holds a Master's degree in Acoustical Engineering, obtained from the Institute of Sound and Vibration Research at the University of Southampton. He is an Associate Member of the Institute of Acoustics.

- 3.5 The report adheres with the principles required by the Institute of Acoustics in their Code of Conduct, and the work is within the author's own area of knowledge and expertise. Where opinions have been expressed these represent true and complete professional opinions on the matters to which they refer.
- 3.6 CSA is a full member of the Association of Noise Consultants (ANC). The author of this report is a Corporate Member of the Institute of Acoustics.

4.0 SITE DESCRIPTION & PROPOSALS

- 4.1 29A Castle Street is a Grade II Listed Building located in the centre of Salisbury, surrounded by a mixture of commercial and residential buildings. The site is set back from Castle Street by circa 30m and is accessed through a pedestrian archway.
- 4.2 Avon House, a large building comprising shops, restaurants and offices, surrounds the site to the west and south, with several items of plant located on its roof. It is noted that the western windows of the site's second floor have line of sight to some of these plant items. Line of sight to other nearby plant units is obscured by various elements of building massing.
- 4.3 The proposals involve the site's change of use from a Use Class E sunbed studio to a Use Class C3 four-bedroom dwelling. Whilst this would typically fall under a Class MA permitted development, the building's listed status means that a full planning application is required.
- 4.4 The internal layout of the site will be altered to provide a kitchen and living room at ground floor level, and two bedrooms at both first and second floor levels. Most of the building's existing window frames will be replaced, albeit it is understood that the original panes of glass are intended to be reused.
- 4.5 There are no external amenity spaces included as part of the proposal.
- 4.6 The site can be seen in context with its surroundings in the attached site plan, Figure AS14666/SP1. The proposed internal layout of the site can be seen in Figure AS14666/SP2.

5.0 LOCAL AUTHORITY REQUIREMENTS & RELEVANT GUIDANCE

5.1 WILTSHIRE COUNCIL

- 5.1.1 In June 2026, Trish Morse, a Senior Public Protection Officer for Wiltshire Council, made the following comments regarding the application:

“Whilst the site itself is located along an alleyway set back from the busy Castle Street, aerial imagery indicates the presence of a number of commercial plant installations in close proximity. These have the potential to adversely impact the amenity of future occupants of the proposed dwelling.

No noise assessment has been submitted in support of the application to demonstrate that noise from nearby commercial plant will not give rise to adverse effects on future occupiers, or that appropriate internal ambient noise levels can be achieved in accordance with relevant guidance, including WHO Guidelines and BS8233.

In the absence of a suitable noise impact assessment, it is not possible to determine whether acceptable living conditions can be provided. As such, a recommendation for refusal is made at this time."

- 5.1.2 Reference has also been made to the Wiltshire Council Planning Consultation Guidance Note – Noise and Vibration (dated 31/10/2023).

5.2 BS8233 & WHO

- 5.2.1 BS8233:2014 *Guidance on sound insulation and noise reduction for buildings* provides guidance on suitable IANLs for various types of buildings.

- 5.2.2 Table 4 (reproduced below) of the standard provides recommended levels for steady external noise sources in dwellings.

Activity	Location	07:00 to 23:00	23:00 to 07:00
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 $L_{Aeq,8hour}$

Table 5.1: Indoor ambient noise levels for dwellings

- 5.2.3 The World Health Organisation *Guidelines for Community Noise (2000)* (WHO) suggests that noise maxima in bedrooms at night should not exceed 45dB L_{Amax} more than 10-15 times per night.

6.0 ENVIRONMENTAL NOISE SURVEY

6.1 PROCEDURE & EQUIPMENT

- 6.1.1 A survey of the existing ambient noise levels was undertaken at external and internal positions at first and second floor level. The monitoring positions are shown in the appended site plans, Figures AS14666/SP1 and AS14666/SP2.
- 6.1.2 The external position was selected to capture the noise generated by the plant items on the roof of Avon House, at a position representative of the most affected proposed residential windows. The internal position was selected to measure the existing indoor ambient noise levels within a proposed bedroom at second floor level. All windows remained closed for the duration of the survey.
- 6.1.3 The monitors were set to record measurements of consecutive 5-minute L_{Aeq} , L_{Amax} , L_{A10} and L_{A90} sound pressure levels between the hours of 12:00 on Thursday 2nd July and 10:30 on Monday 6th July 2026.
- 6.1.4 The following equipment was used during the survey:
- 1 no. Rion Class 1 sound level meter type NA28;
 - 1 no. Rion Class 1 sound level meter type NL32;
 - 1 no. Rion sound level calibrator type NC74.

6.1.5 Additional attended measurements of internal and external noise levels around the site were conducted between 11:30 and 13:30 on 2nd July 2026. These measurements were synchronised with the automated noise measurements and were undertaken at the positions indicated in Figures AS14666/SP1 and AS14666/SP2. Internal measurements were undertaken with windows open and closed.

6.1.6 The following equipment was used during the attended measurements:

- 1 no. Norsonic Class 1 sound level meter type 118;
- 1 no. Norsonic sound level calibrator type 1251.

6.1.7 The calibration of the sound level meters was verified before and after use, with no significant calibration drift detected. All equipment has current certified traceable laboratory calibration which is available for inspection on request.

6.1.8 Measurements were made following procedures in BS7445:1991 (ISO1996-2:1987) *Description and measurement of environmental noise Part 2 - Acquisition of data pertinent to land use*.

6.1.9 The weather during the survey period was typically calm with light winds, and as such is considered suitable for the purposes of measuring environmental noise.

6.2 RESULTS

6.2.1 Figures AS14666/TH1-TH8 show the L_{Aeq} , L_{Amax} , L_{A10} and L_{A90} sound pressure levels as time histories at each of the measurement positions.

6.2.2 The average noise levels for the daytime (07:00 – 23:00 hours) and night-time (23:00 – 07:00 hours) periods are shown in Table 6.1. The external noise levels are free-field values.

Position	Monitoring Period	Average Ambient $L_{Aeq,5mins}$	Typical Highest* L_{AFmax}
Position 1 (external)	Daytime	51 dB	-
	Night-time	49 dB	60 dB
Position 2 (internal)	Daytime	31 dB	-
	Night-time	28 dB	43 dB

Table 6.1: Environmental noise survey results [dB ref. 20 μ Pa]

*derived as the L_{AFmax} value exceeded no more than 10 times per night

6.2.3 The noise levels measured during the attended measurements, recorded are summarised in Table 6.2.

Position	Window Open or Closed?	Measured Short-term Daytime Ambient $L_{Aeq,T}$
Attended Position 1	N/A (external measurement)	53 dB (T=20mins)
Attended Position 2	Closed	32 dB (T=10mins)
	Open	46 dB (T=10mins)
Attended Position 3	Closed	33 dB (T=10mins)
	Open	44 dB (T=10mins)
Attended Position 4	Closed	29 dB (T=10mins)

Table 6.2: Attended noise measurement results

[dB ref. 20 μ Pa]

6.2.4 The noise climate within the proposed bedrooms is primarily determined by plant noise from Avon House, with some contributions from individual vehicle pass-bys on Castle Street.

7.0 ASSESSMENT

- 7.1 As there are no external amenity spaces included in this proposal, this assessment focusses on the internal noise levels. Internal noise level targets have been set to achieve those stated in Table 5.1.
- 7.2 From inspection of the time histories, it appears that the plant items on Avon House are typically operational between circa 01:30 and 17:30 hours, except for on Sunday where the plant begins operation at 05:30 hours.
- 7.3 Despite the plant being operational for the majority of the night-time period, the internal ambient noise levels measured during the survey comply with the targets identified in the Public Protection department response for both daytime and night-time periods.
- 7.4 The results of the attended internal measurements indicate that these other rooms experience similar levels of noise intrusion as those measured during the daytime at Position 2. It is, therefore, expected that the internal noise levels in all proposed habitable rooms will achieve the targeted levels, for both the day and night-time periods, with windows closed.
- 7.5 Separate consideration has been given to the background ventilation case, where it is assumed that trickle ventilators can be installed as part of the proposed window frame replacements.
- 7.6 Table 7.1 presents the required sound reduction performance of the natural ventilation system.

Façade	Ventilator Sound Reduction Performance
Rear	$D_{n,ew}$ 27 dB
Front	$D_{n,ew}$ 27 dB

Table 7.1: Trickle ventilator acoustic performance requirements

- 7.7 These specifications are provided on the basis of a single ventilator per room. Where more than one ventilator will be installed, the performance requirement will increase by a factor of $+10\log(N)$, where N is the number of ventilators in the room.

7.8 CONSIDERATION OF THE OPEN WINDOW SCENARIO

- 7.8.1 It is acknowledged that the Wiltshire guidance suggests that when considering noise with character, such as that from mechanical plant, the desirable noise levels in Table 5.1 should be achieved with windows open. This section discusses how noise intrusion can be suitably controlled by use of secondary glazing systems.
- 7.8.2 During the daytime period, windows on the western façade are exposed to sufficiently low noise levels such that the internal ambient noise levels are likely to be commensurate with the targets in BS8233.
- 7.8.3 If it is desired that the target internal noise levels are achieved during the night-time period without the need for closed windows, secondary glazing would be required. The primary and secondary panes could form a plenum-type opening, which can provide increased outside to inside attenuation.
- 7.8.4 On the basis of the night-time external free-field average noise level of $L_{Aeq,8hr}$ 49dB at the rear façade, an outside to inside level difference of 19dB is required. This level difference value is readily achievable with many commercially available secondary glazing systems. This level of attenuation would also be sufficient for controlling noise maxima during the night-time period.
- 7.8.5 On the basis of the short-term ambient noise levels measured at the front façade being $L_{Aeq,20mins}$ 53dB, an outside to inside level difference of 18dB would be required to meet the target daytime criteria. This would also be achieved by a similar system as described above, which is also expected to suitably control night-time noise intrusion.
- 7.8.6 The provision of plenum windows would, therefore, allow windows to be open during both daytime and night-time periods whilst maintaining suitable internal acoustic conditions, such that adverse impact should not be experienced by the future residents.
- 7.8.7 The installation of secondary glazing would also further reduce internal noise levels when windows are closed.

8.0 CONCLUSIONS

- 8.1 Clarke Saunders Acoustics has conducted an assessment of the noise environment in the vicinity of 29A Castle Street, Salisbury, SP1 1TT. This assessment has been conducted to determine the site's suitability for residential use, referencing the requirements of the local authority, as advised in the Public Protection Department Consultation comment.
- 8.2 The survey results have indicated that the existing glazing is capable of controlling external plant noise intrusion to the targets requested by Wiltshire Council, across both the day and night-time periods, with windows closed.
- 8.3 Consideration has been given to background ventilation requirements, where acoustic performances for trickle vents have been specified on the assumption that they can be installed as part of the proposed window frame replacements.

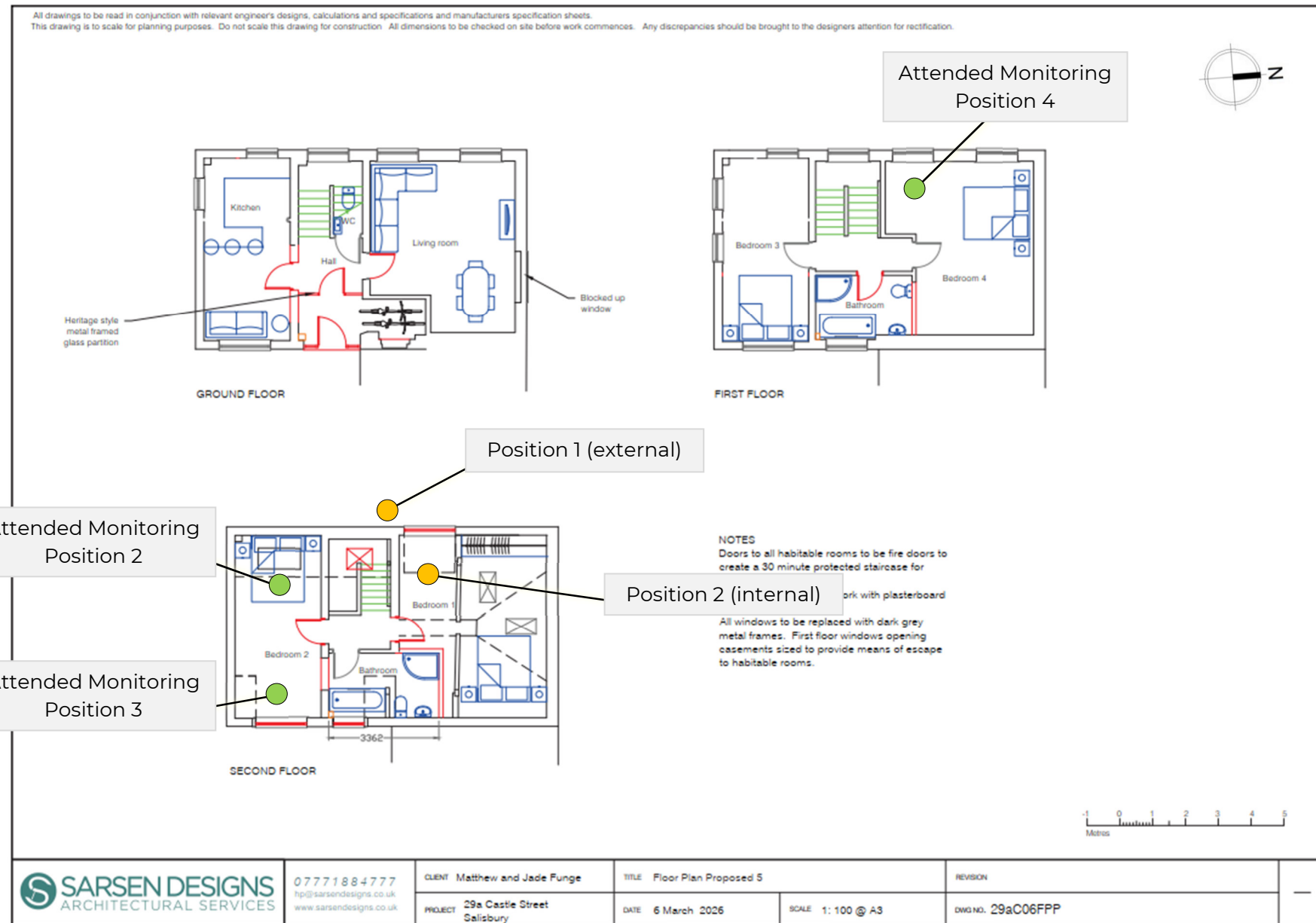
- 8.4 Should it be desired for the target internal noise levels to be met with open windows, secondary glazing would allow for a plenum-type window opening. Such a system can be designed to provide a suitable inside to outside noise level difference such that the desirable targets can be achieved. during both daytime and night-time periods.
- 8.5 The building can be made acoustically suitable for residential use, where the noise sources in the area should not result in adverse impact on the future occupiers of the development.

M Symmonds

Michael Symmonds MIOA
CLARKE SAUNDERS ACOUSTICS



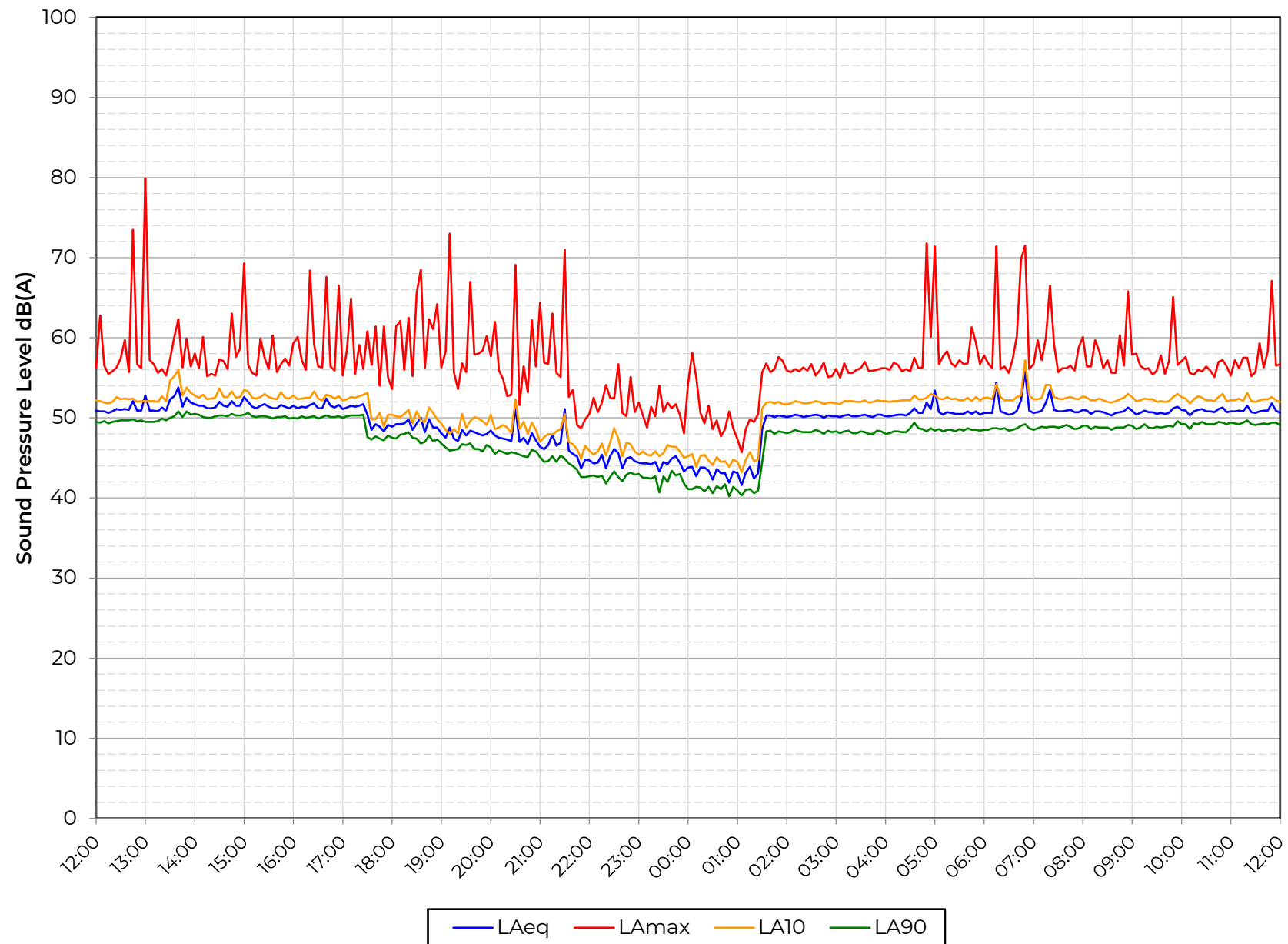
Indicative Site Plan



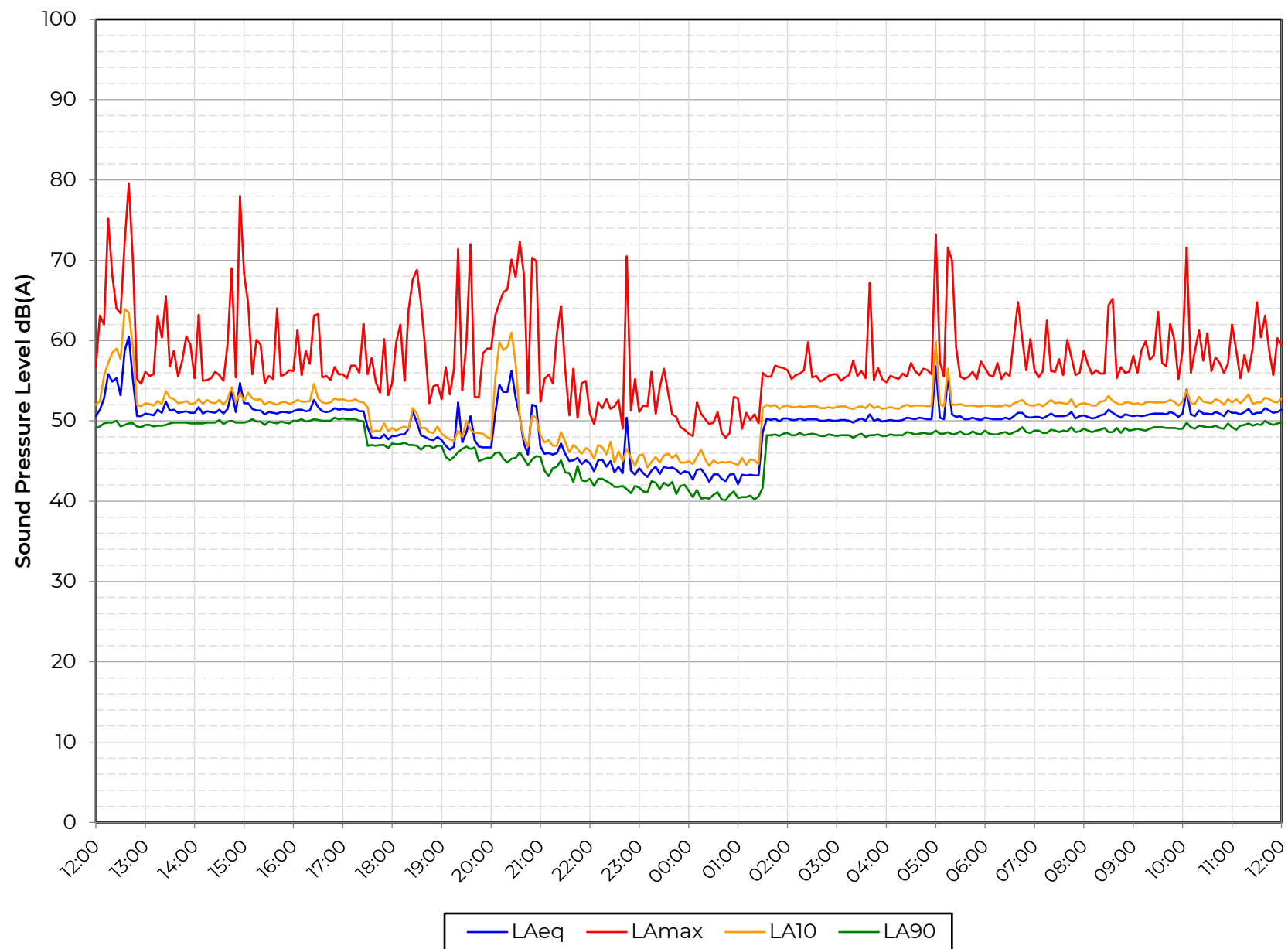
Indicative Layout Plan

Figure AS14666/SP2

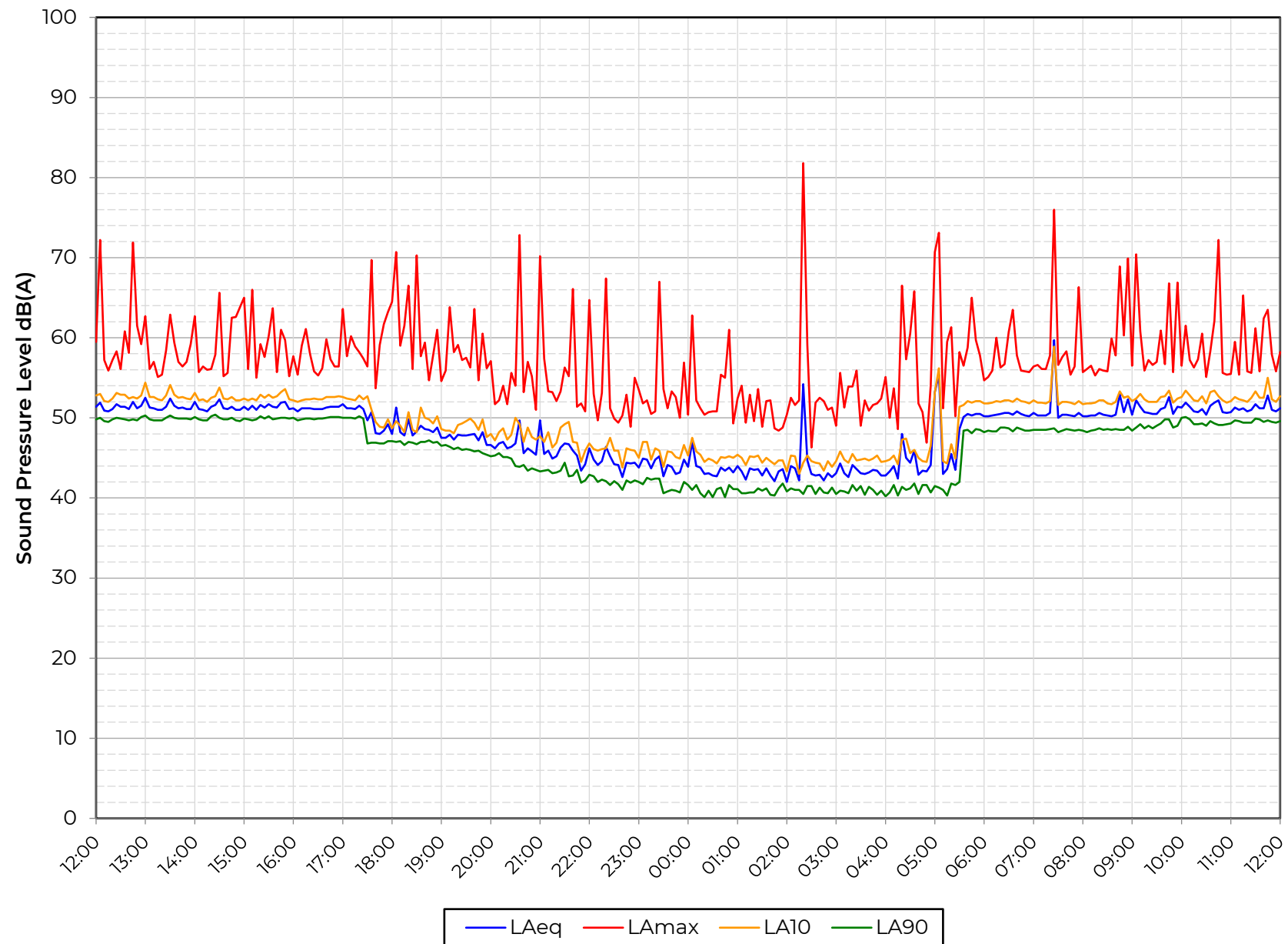
Position 1 (External)



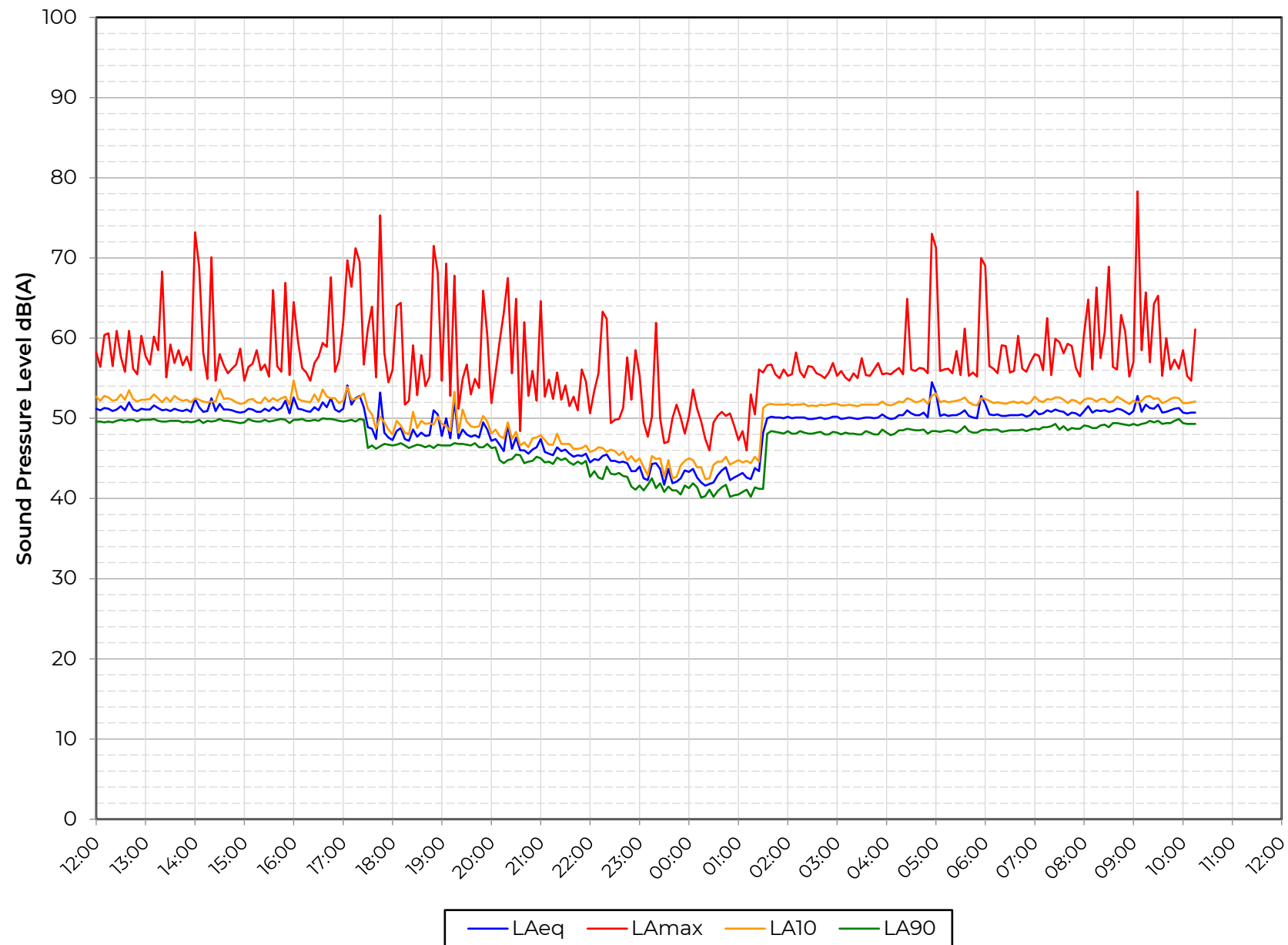
Position 1 (External)



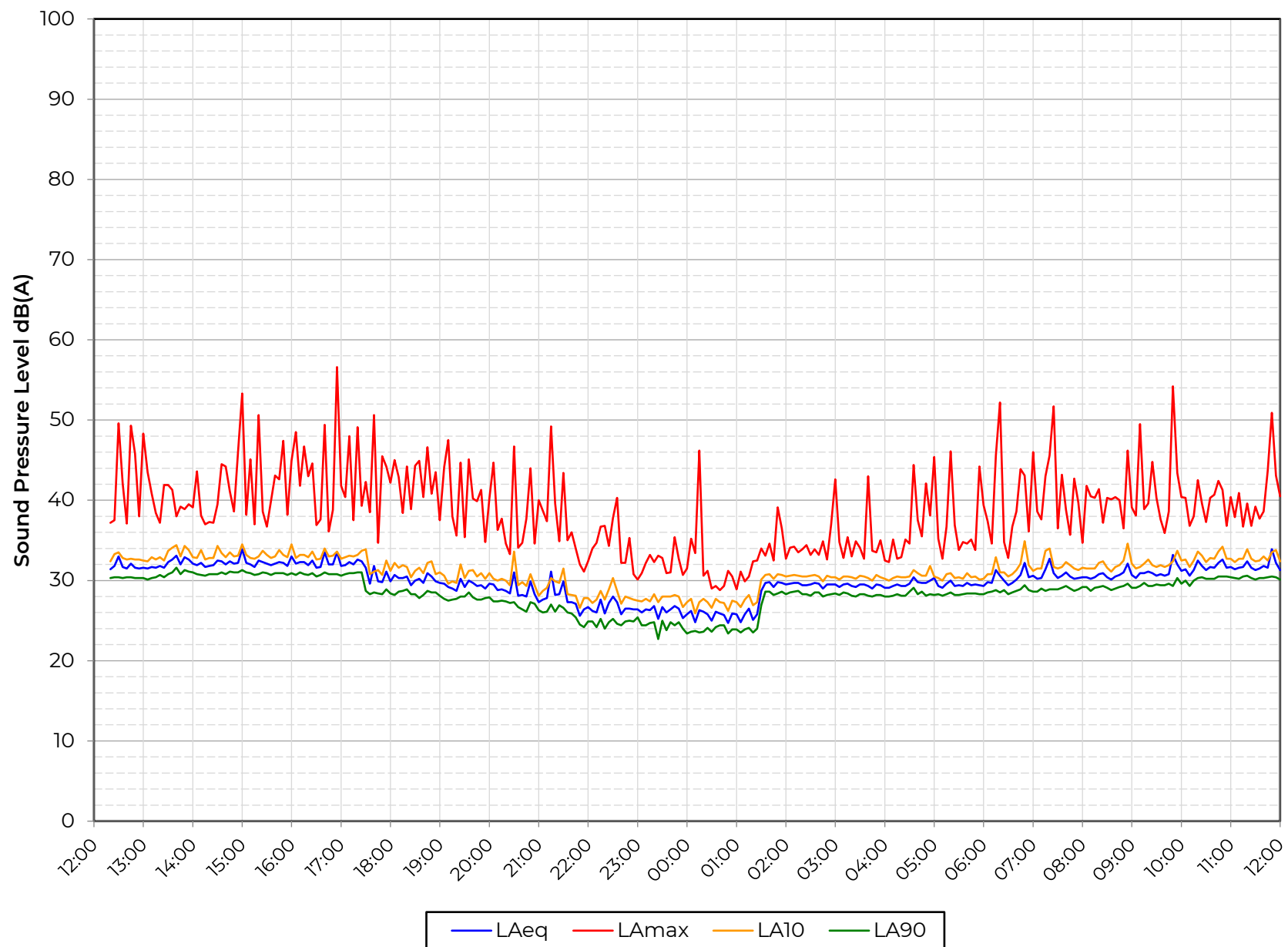
Position 1 (External)



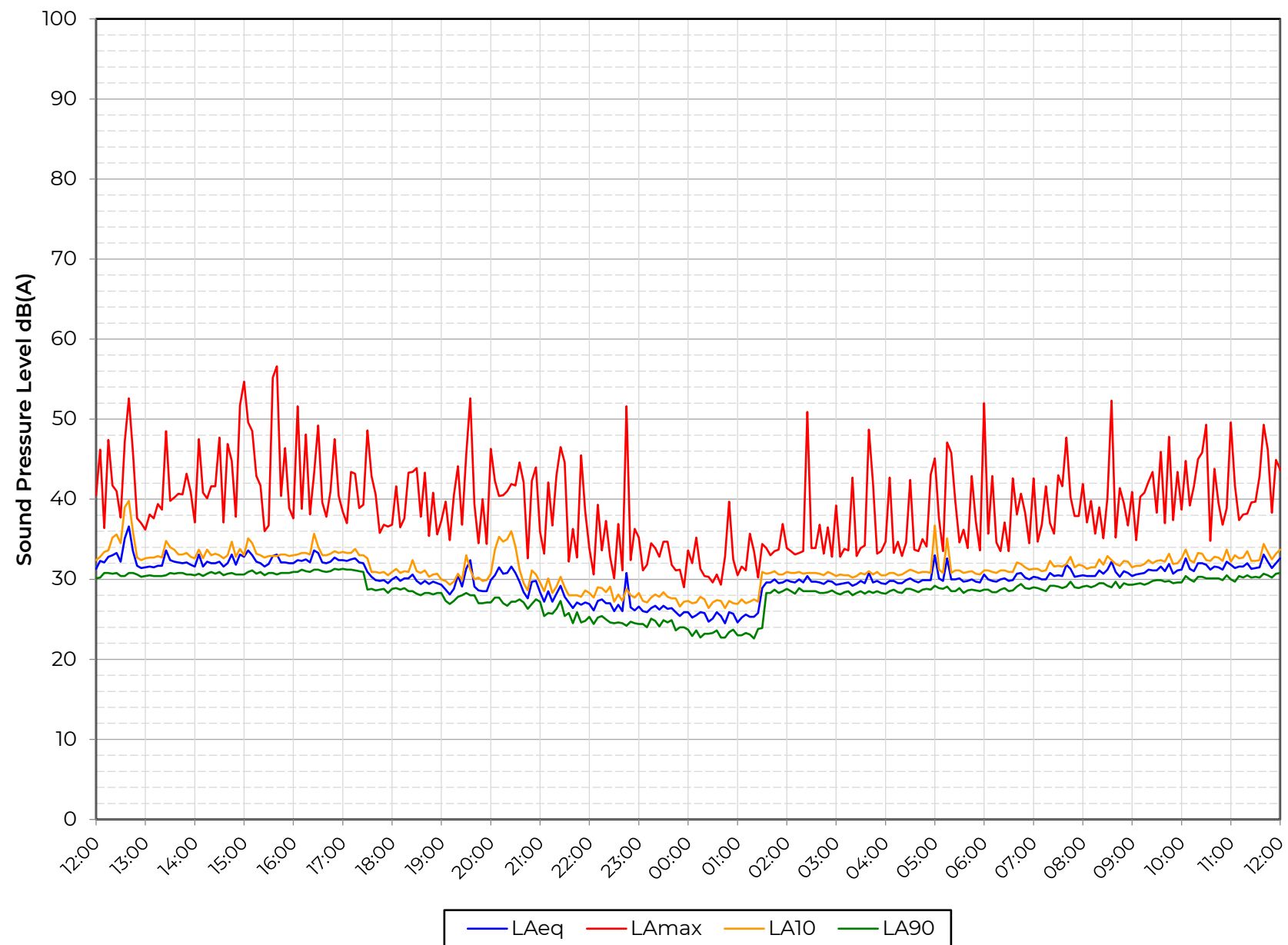
Position 1 (External)



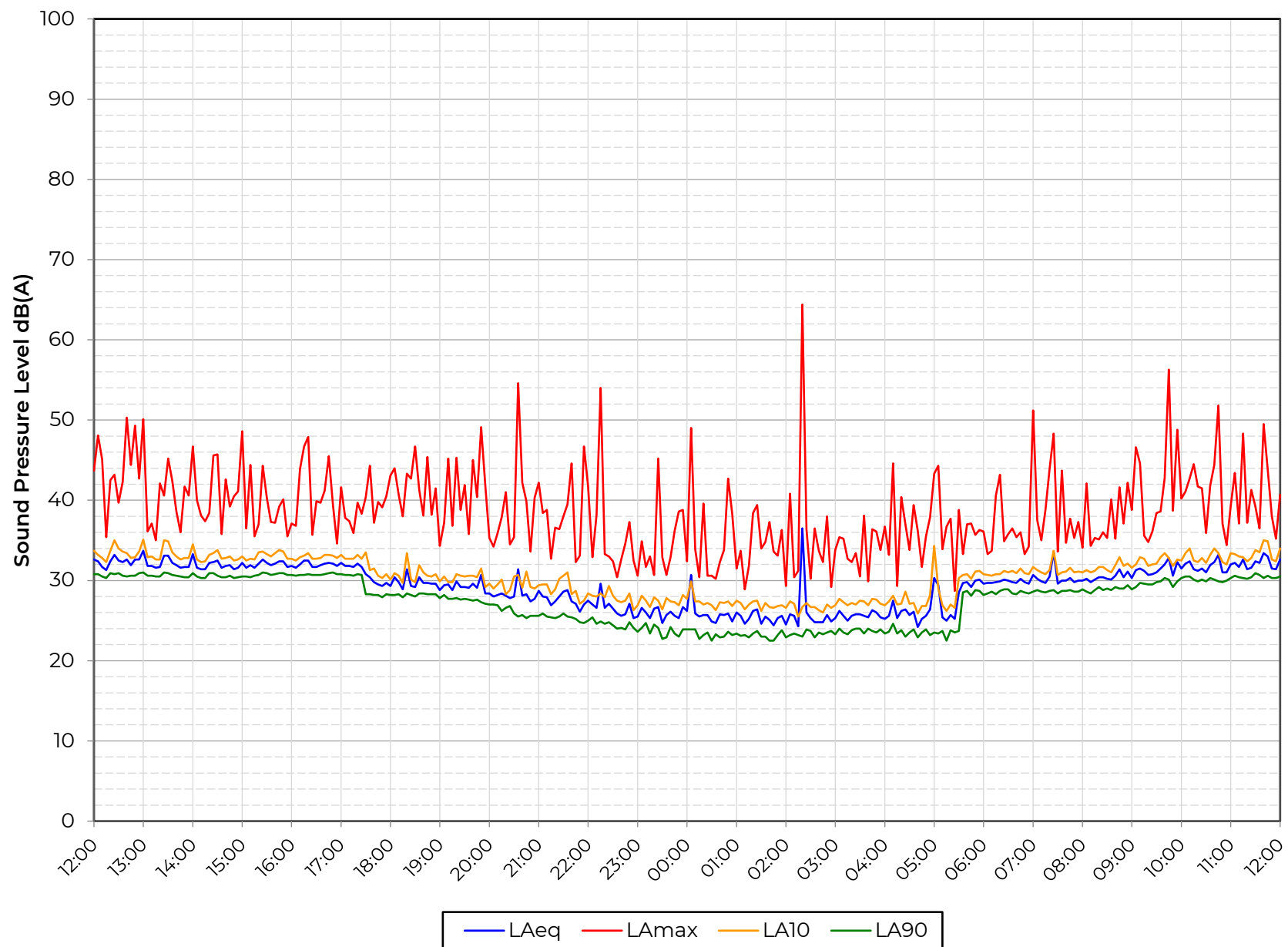
Position 2 (Internal)



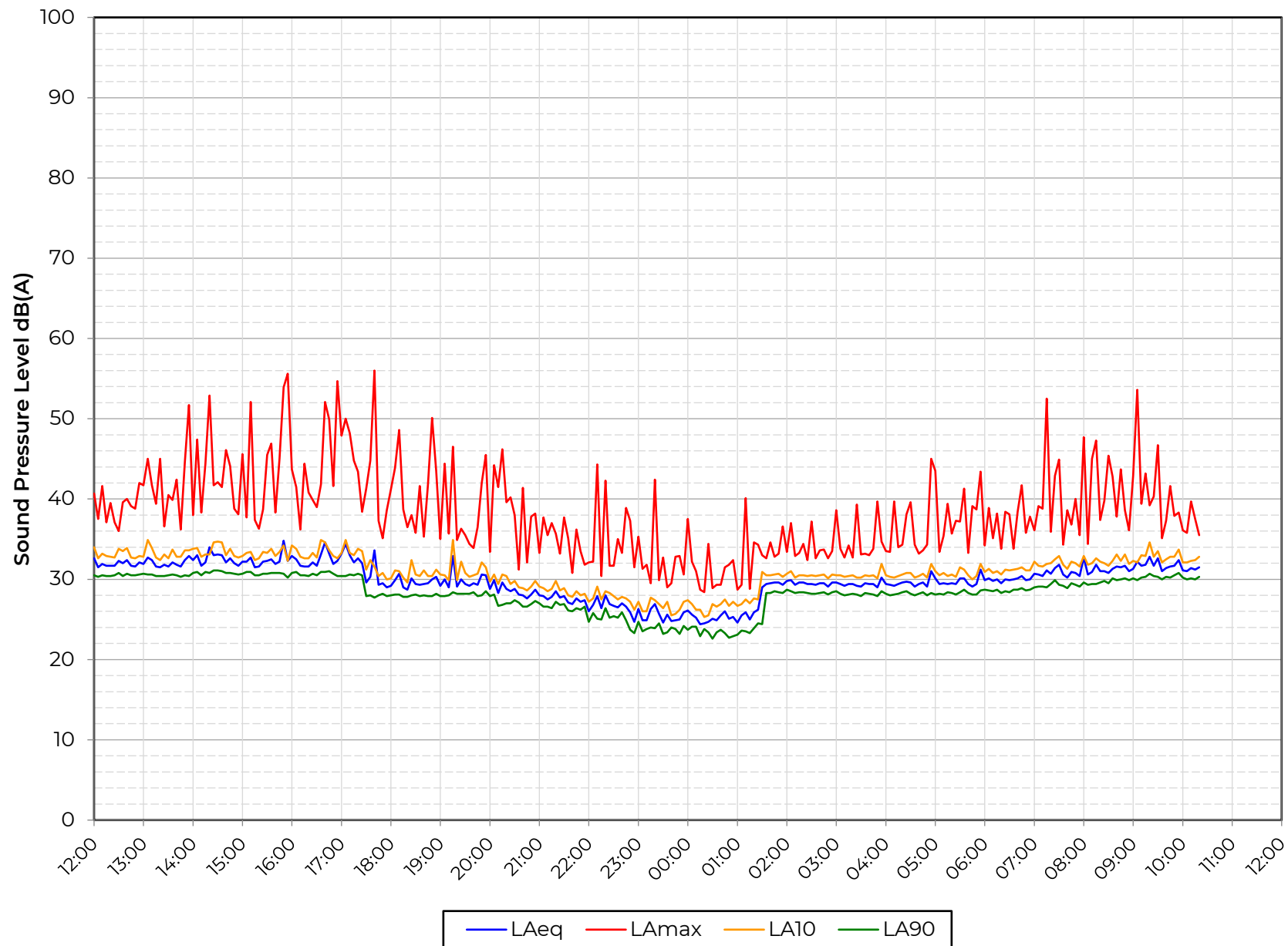
Position 2 (Internal)



Position 2 (Internal)



Position 2 (Internal)



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 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 they climb up a ladder (and are closer to the top of the barrier) than if they were standing at ground level. Equally if they sat on the ground the sound would seem quieter than if 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.