



NOISE IMPACT ASSESSMENT

on behalf of

RP Tyson Construction Ltd

for

Land at Devonshire Street

Report Number NA103403-RPT02_V1

Date of Report 27 April 2026

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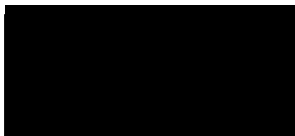
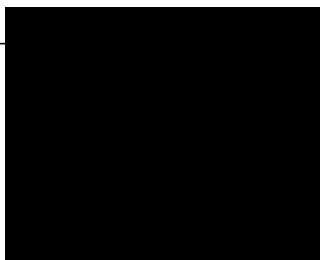
Summary

A noise assessment has been undertaken to demonstrate compliance with the requirements of Condition 13 of the planning permission associated with the new residential development at Land at Devonshire Street.

An environmental sound survey has been undertaken to establish the existing sound climate at the locations of proposed noise sensitive receptors (NSRs) during periods representative of a typical 24-hour period. An initial noise risk assessment of the development has been undertaken.

The recorded sound levels have been compared to the requirements of Condition 13, and shown to be generally in compliance. There is one exceedance due to multiple emergency vehicles passing by at night which are atypical, when these are removed from the data set, full compliance is achieved by the development.

The Condition can therefore be discharged.

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Signed:		Signed:		
Date:	27 April 2026	Date:	27 April 2026	
Revision Number	Date	Updated by	Checked by	Changes made

Advisory Note

The suitability of any recommended noise mitigation measures within this report should be approved by the relevant architects, structural engineers, building contractors, fire consultants and material manufacturers constituting the wider design team, prior to procurement and field application. This should ensure that when the recommended noise control measures are implemented on site, they will satisfy the requirements of all disciplines and not cause any health and safety issues.

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1 Introduction

- 1.1 Miller Goodall Ltd has undertaken a noise assessment to discharge a planning condition for a residential development of 24 units at Land at Devonshire Street. The report provides details of internal noise measurements made at the site, and compares the results with criteria previously approved by the Council as part of the planning condition.

2 Policy, Standards and Guidance

- 2.1 The following planning policy and acoustics standards and guidance have been considered in this assessment:
- Noise Policy Statement for England (NPSE)
 - National Planning Policy Framework (NPPF)
 - ProPG: Planning & Noise, Professional Practice Guidance on Planning & Noise: New Residential Development, May 2017 (ProPG)
 - BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' (BS 8233)
- 2.2 Further detail of the scope and extent of this guidance is provided in **Appendix A: Policy, Standards and Guidance**.

3 Planning Condition 13

- 3.1 Planning Condition 13 specifically relates to internal noise levels and part b of the condition relating to pre-occupation verification work is reproduced below.

"b) Prior to first occupation of the residential apartments, a verification report shall be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report. The report shall also undertake post completion testing to confirm that the internal noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the internal noise criteria.

Reason- To secure a reduction in noise from traffic or other sources in order to protect future residents from noise disturbance and to reduce the potential for overheating,

pursuant to policies SP1 and DM1 of the Manchester Core Strategy (2012) and saved UDP policy DC26."

- 3.2 The "approved acoustic consultant's report" referenced in the condition is the report produced by E3P in October 2023, ref: 50-940-R1-4. The criteria from this report are reproduced for reference in **Table 1**.

Table 1: Noise Criteria

Space	$L_{Aeq,T}$ (dB)	$L_{AF,max}$ (dB)
Living Room, Bedrooms (Daytime)	35	N/A
Bedrooms (Night-time)	30	45 (up to 15 times per night)

4 Site Description

- 4.1 The site location is shown in **Appendix B: First Floor Layout and Monitoring Location**. It is in an urban location in Ardwick, Manchester, with Devonshire Street forming the western boundary and Coverdale Crescent forming the north boundary. To the east are residences, and a care home is at the southern boundary.
- 4.2 The dominant noise source at the site is road traffic noise from Devonshire Street and other nearby major roads.

5 Sound Survey

5.1 Measurements Procedure

- 5.1.1 Unattended sound monitoring was undertaken in one bedroom at the development, overlooking Devonshire Street between approximately 12:30 on 10th April, and 16:30 on 11th April 2026. A sound level meter was set up and mounted on a tripod at approximately 1.5 m above floor level at the first floor and in the middle of the room.
- 5.1.2 The calibration of the sound level meter was checked before and after the measurements, with negligible deviation (≤ 0.1 dB) recorded.

5.2 Environmental Sound Climate

5.2.1 During the installation and collection of the equipment, the noise climate was observed to be dominated by road traffic noise on Devonshire Street.

6 Monitoring Results

6.1 A time history graph for the full unattended monitoring period at MPI, plotted in 15-minute time intervals, is presented in **Appendix C: Environmental Sound Survey Results**. All data are presented as sound pressure levels in dB re 20 μ Pa.

6.2 A summary of the broadband measurement data for the unattended monitoring at MPI is provided in **Table 2**, with 15-minute data throughout the survey also presented in **Appendix C: Environmental Sound Survey Results**.

Table 2: Summary of unattended environmental sound monitoring results at MPI

Date	Day	Period	Start Time hh:mm	Elapsed Time, T hh:mm	$L_{Aeq,T}^{*1}$ dB	Overall $L_{AF,max}^{*2}$ dB	$L_{A90,T}^{*3}$ dB
10/04/2026	Friday	Daytime	12:30	10:30	33	68	24
10/04/2026 to 11/04/2026	Friday to Saturday	Night-time	23:00	08:00	34 ^{*4}	79	19
11/04/2026	Saturday	Daytime	07:00	07:30	34	71	24
Overall Daytime Levels					34	71	24
Overall Night-time Levels					34 ^{*4}	79	19

*1. The values presented for the $L_{Aeq,T}$ are the log average of the $L_{Aeq,15min}$ values recorded within the corresponding period, of length T.

*2. The values presented for the $L_{AF,max}$ are the highest $L_{AFmax,2min}$ values recorded within the period.

*3. The values presented for the $L_{A90,T}$ have been calculated using the LRB Method from the Little Red Book of Acoustics¹, from the $L_{A90,15min}$ values recorded within the corresponding period, of length T. The value presented is the most commonly occurring $L_{A90, 15min}$ value during the period, for which no less than 45% of the total histogram data occurs below.

*4. These levels are higher than permitted in bedrooms. This is discussed in Section 7 where atypical events are removed, resulting in the ambient level reducing to 29 dB.

¹ The Little Red Book of Acoustics: A Practical Guide, Fourth Edition (2024) published by Blue Tree Acoustics

7 Assessment

- 7.1 Recorded sound levels are compared with the criteria for the development which were provided in *E3P* report ref: 50-940-R1-4, dated October 2023. A comparison of the day- and night-time noise levels with the criteria is shown in **Table 3**.

Table 3: Measured noise levels (including atypical sources) vs. criteria

Description	Measured Noise Levels		E3P Criteria		Exceedance of Criteria	
	dB $L_{Aeq,T}$	dB 10 th $L_{AF,max}$	dB $L_{Aeq,T}$	dB 10 th $L_{AF,max}$	dB $L_{Aeq,T}$	dB $L_{AF,max}$
Bedroom (day)	34	N/A	35	N/A	- 1	N/A
Bedroom (night)	34	45	30	45	+ 4	0

- 7.2 While the night-time ambient noise level (L_{Aeq}) shows an exceedance of the internal criterion, a detailed review of the survey data shows that there were two emergency sirens passing the site around 01:00. The $L_{Aeq,15min}$ when these sirens passed was 48 dB, and this was enough to significantly alter the overall 8-hour night-time level recorded.
- 7.3 Sirens are not expected to be a common occurrence at the site, as the development site is on a side road, not a main artery road in / out of the city. Consequently, if the sirens are excluded from the data and assessment, as it is an atypical feature of the noise climate (siren noise only occurred for 3 minutes during the entire night-time period), the $L_{Aeq,8hr}$ reduces to 29 dB, which is compliant with the criterion for night-time internal ambient noise levels.
- 7.4 The conclusion for the site, is that when excluding atypical sources of noise, the internal criteria are achieved at all times. These “typical” noise levels are shown in **Table 4**.

Table 4: Measured noise levels (excluding atypical sources) vs. criteria

Description	Measured Noise Levels		E3P Criteria		Exceedance of Criteria		Comment
	dB $L_{Aeq,T}$	dB 10 th $L_{AF,max}$	dB $L_{Aeq,T}$	dB 10 th $L_{AF,max}$	dB $L_{Aeq,T}$	dB $L_{AF,max}$	
Bedroom (day)	34	N/A	35	N/A	- 1	N/A	Ok
Bedroom (night)	29	44	30	45	- 1	- 1	Ok

8 Summary and Conclusion

- 8.1 A survey and assessment have been undertaken to compare internal noise levels at Land at Devonshire Street with Planning Conditions for the development. The survey was undertaken over a 24-hour period in a bedroom considered to be the worst-affected by ambient noise sources.
- 8.2 The results have shown that, excluding atypical noise sources (3 minutes of sirens at night), compliance with the internal noise criteria is achieved at all times. Planning Condition 13 can therefore be discharged.

APPENDICES

Appendix A: Policy, Standards and Guidance

1 Noise Policy Statement for England

1.1 The Noise Policy Statement for England (NPSE²) sets out the long-term vision of noise policy.

The Noise Policy aims, as presented in this document, are:

“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

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

1.2 The NPSE makes reference to the concepts of NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level) as used in toxicology but applied to noise impacts. It also introduces the concept of SOAEL (Significant Observed Adverse Effect Level) which is described as the level above which significant adverse effects on health and the quality of life occur.

1.3 The first aim of the NPSE is to avoid significant adverse effects, taking into account the guiding principles of sustainable development (as referenced in Section 1.8). The second aim seeks to provide guidance on the situation that exists when the potential noise impact falls between the LOAEL and the SOAEL, in which case:

“...all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development”.

1.4 Importantly, the NPSE goes on to state:

“This does not mean that such adverse effects cannot occur”.

²Noise Policy Statement for England, Defra, March 2010

- 1.5 The Statement does not provide a noise-based measure to define SOAEL, acknowledging that the SOAEL is likely to vary depending on the noise source, the receptor and the time in question. NPSE advises that:

“Not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available”

- 1.6 It is therefore likely that other guidance will need to be referenced when applying objective standards for the assessment of noise, particularly in reference to the SOAEL, whilst also taking into account the specific circumstances of a proposed development.

2 National Planning Policy Framework

- 2.1 The National Planning Policy Framework (NPPF³) was updated most recently in February 2025. The NPPF advises that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives). One of these is an environmental objective which is described in par. 8 (c):

“to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.”

- 2.2 At par. 187 NPPF advises that:

“Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans...”

³ National Planning Policy Framework, Ministry of Housing, Communities and Local Government, December 2023

2.3 Par. 198 goes on to state:

“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; ...”

2.4 Par. 200 seeks to ensure that any development does not prejudice the legally permitted operations and activities of other, existing non-residential uses, stating:

“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.”

3 ProPG: Planning & Noise, Professional Practice Guidance on Planning & Noise: New Residential Development, May 2017 (ProPG)

- 3.1 The primary goal of ProPG is to assist the delivery of sustainable development by promoting good health and wellbeing through the effective management of noise. It seeks to do that through encouraging a good acoustic design process in and around proposed new residential development having regard to national policy on planning and noise.
- 3.2 It provides a recommended approach for new residential development that would be exposed predominantly to noise from existing transport sources. The recommended

approach is also considered suitable where some industrial or commercial noise contributes to the acoustic environment provided that it is not dominant

3.3 ProPG promotes a 2-stage, approach. 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. The four key elements to be considered in parallel

- Element 1 – demonstrating a “Good Acoustic Design Process”;
- Element 2 – observing internal “Noise Level Guidelines”;
- Element 3 – undertaking an “External Amenity Area Noise Assessment”; and
- Element 4 – consideration of “Other Relevant Issues”.

3.4 The approach is underpinned by the preparation and delivery of an “Acoustic Design Statement” (ADS), unless a site is assessed as negligible risk, in which case an ADS is not necessary.

4 BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings

4.1 This standard provides recommended guideline acoustic design criteria for new dwellings and is supported by guidance contained within WHO GCN⁴. The guideline noise design criteria of BS 8233 apply to external noise “*without a specific character*” (previously and sometimes termed or referred to as “*anonymous noise*”) such as that associated with road and rail traffic.

Internal Amenity

4.2 The Standard states that for external noise without a specific character, such as road traffic, it is desirable that the internal ambient noise level does not exceed the guideline values shown in **Table A4.1**.

4.3 The note to paragraph 7.7.1 states that where noise has a specific character (i.e. it contains features such as a distinguishable, discrete and continuous tone, is irregular enough to

⁴ World Health Organisation Guidelines for Community Noise, 1999

attract attention, or has strong low-frequency content) “lower noise limits might be appropriate”.

Table A4.1: BS 8233: 2014 guideline indoor ambient noise levels for dwellings

Location	Activity	07:00 to 23:00	23:00 to 07:00
Living Room	Resting	35 dB $L_{Aeq,16hr}$	–
Dining room/area	Dining	40 dB $L_{Aeq,16hr}$	–
Bedroom	Sleeping (daytime resting)	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$

4.4 Note 7 to Table 4 of BS 8233 states:

“Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved.”

4.5 Guidance on reasonable acoustic design criteria for individual noise events are also provided, and the Standard advises that:

“regular individual noise events...can cause sleep disturbance. A guideline value may be set in terms of SEL^5 or $L_{Amax,F}$ depending on the character and number of events per night. Sporadic noise events could require separate values”.

4.6 For Internal spaces, the Standard states that:

“..to avoid sleep disturbance, sound pressure levels at the outside facades of living spaces should not exceed 45 dB L_{Aeq} (taken as a façade level, and equating to a free-field external level of 42 dB L_{Aeq}) and 60 dB L_{Amax} so that people may sleep with bedroom windows open.”

External Amenity

4.7 BS 8233:2014 adopts guideline external noise values provided in WHO for external amenity areas such as gardens, patios and private outdoor amenity spaces. BS 8233:2014 adopts

⁵ Sound exposure level or L_{AE}

guideline external noise level limits provided in WHO for external amenity areas such as gardens and patios. The standard states that it is “*desirable*” that the external noise does not exceed 50 dB $L_{Aeq,16hr}$ with an upper guideline value of 55 dB $L_{Aeq,16hr}$ whilst recognising in paragraph 7.7.3.2 that development in higher noise areas, such as urban areas or those close to the transport network, may require a compromise between elevated noise levels (i.e., above 55 dB $L_{Aeq,16hr}$) and other factors that determine if development in such areas is warranted. In such circumstances, the development should be designed to achieve the lowest practicable noise levels in external amenity areas, but should not be prohibited.

4.8 The standard also states:

“Other locations, such as balconies, roof gardens and terraces, are also important in residential buildings where normal external amenity space might be limited or not available, i.e. in flats, apartment blocks, etc. 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.”

Appendix B: First Floor Layout and Monitoring Location

Appendix C: Environmental Sound Survey Results

Start Time (dd/mm/yyyy hh:mm)	Elapsed Time, T (hh:mm)	$L_{Aeq,T}$ (dB)	$L_{AF,max}$ (dB)	$L_{A90,T}$ (dB)
10/04/2026 13:00	00:15	32	46	25
10/04/2026 13:15	00:15	31	46	25
10/04/2026 13:30	00:15	31	41	24
10/04/2026 13:45	00:15	32	50	23
10/04/2026 14:00	00:15	36	61	25
10/04/2026 14:15	00:15	31	44	24
10/04/2026 14:30	00:15	31	48	25
10/04/2026 14:45	00:15	30	46	23
10/04/2026 15:00	00:15	31	48	25
10/04/2026 15:15	00:15	33	55	26
10/04/2026 15:30	00:15	30	48	25
10/04/2026 15:45	00:15	31	47	24
10/04/2026 16:00	00:15	32	49	26
10/04/2026 16:15	00:15	31	44	24
10/04/2026 16:30	00:15	32	53	24
10/04/2026 16:45	00:15	31	43	24
10/04/2026 17:00	00:15	32	49	25
10/04/2026 17:15	00:15	31	48	24
10/04/2026 17:30	00:15	30	43	23
10/04/2026 17:45	00:15	32	42	23
10/04/2026 18:00	00:15	33	52	25
10/04/2026 18:15	00:15	31	43	26
10/04/2026 18:30	00:15	31	49	25
10/04/2026 18:45	00:15	31	40	24
10/04/2026 19:00	00:15	32	42	25

Start Time (dd/mm/yyyy hh:mm)	Elapsed Time, T (hh:mm)	$L_{Aeq,T}$ (dB)	$L_{AF,max}$ (dB)	$L_{A90,T}$ (dB)
10/04/2026 19:15	00:15	32	52	24
10/04/2026 19:30	00:15	31	40	24
10/04/2026 19:45	00:15	34	56	23
10/04/2026 20:00	00:15	34	57	24
10/04/2026 20:15	00:15	34	57	25
10/04/2026 20:30	00:15	30	38	23
10/04/2026 20:45	00:15	41	65	23
10/04/2026 21:00	00:15	31	47	25
10/04/2026 21:15	00:15	31	40	25
10/04/2026 21:30	00:15	32	40	29
10/04/2026 21:45	00:15	32	40	29
10/04/2026 22:00	00:15	32	40	28
10/04/2026 22:15	00:15	30	40	22
10/04/2026 22:30	00:15	30	40	22
10/04/2026 22:45	00:15	39	68	23
10/04/2026 23:00	00:15	31	40	23
10/04/2026 23:15	00:15	31	40	22
10/04/2026 23:30	00:15	30	44	22
10/04/2026 23:45	00:15	30	39	23
11/04/2026 00:00	00:15	30	43	23
11/04/2026 00:15	00:15	31	57	20
11/04/2026 00:30	00:15	28	41	20
11/04/2026 00:45	00:15	29	40	22
11/04/2026 01:00	00:15	29	40	21
11/04/2026 01:15	00:15	28	36	18
11/04/2026 01:30	00:15	28	44	19

Start Time (dd/mm/yyyy hh:mm)	Elapsed Time, T (hh:mm)	$L_{Aeq,T}$ (dB)	$L_{AF,max}$ (dB)	$L_{A90,T}$ (dB)
11/04/2026 01:45	00:15	27	38	19
11/04/2026 02:00	00:15	27	41	20
11/04/2026 02:15	00:15	26	37	19
11/04/2026 02:30	00:15	27	41	19
11/04/2026 02:45	00:15	26	38	19
11/04/2026 03:00	00:15	26	40	18
11/04/2026 03:15	00:15	26	37	19
11/04/2026 03:30	00:15	27	39	18
11/04/2026 03:45	00:15	26	39	18
11/04/2026 04:00	00:15	25	37	19
11/04/2026 04:15	00:15	24	36	18
11/04/2026 04:30	00:15	27	40	19
11/04/2026 04:45	00:15	26	41	19
11/04/2026 05:00	00:15	27	48	19
11/04/2026 05:15	00:15	26	44	19
11/04/2026 05:30	00:15	27	38	19
11/04/2026 05:45	00:15	31	45	20
11/04/2026 06:00	00:15	32	41	24
11/04/2026 06:15	00:15	32	57	20
11/04/2026 06:30	00:15	31	45	23
11/04/2026 06:45	00:15	33	55	25
11/04/2026 07:00	00:15	31	41	24
11/04/2026 07:15	00:15	32	42	25
11/04/2026 07:30	00:15	33	54	26
11/04/2026 07:45	00:15	33	43	26
11/04/2026 08:00	00:15	32	43	25

Start Time (dd/mm/yyyy hh:mm)	Elapsed Time, T (hh:mm)	$L_{Aeq,T}$ (dB)	$L_{AF,max}$ (dB)	$L_{A90,T}$ (dB)
11/04/2026 08:15	00:15	35	57	24
11/04/2026 08:30	00:15	32	42	24
11/04/2026 08:45	00:15	33	47	24
11/04/2026 09:00	00:15	31	44	21
11/04/2026 09:15	00:15	32	42	22
11/04/2026 09:30	00:15	32	42	23
11/04/2026 09:45	00:15	33	44	23
11/04/2026 10:00	00:15	32	42	25
11/04/2026 10:15	00:15	33	41	23
11/04/2026 10:30	00:15	33	47	27
11/04/2026 10:45	00:15	33	42	30
11/04/2026 11:00	00:15	33	43	30
11/04/2026 11:15	00:15	32	42	26
11/04/2026 11:30	00:15	33	58	24
11/04/2026 11:45	00:15	31	45	24
11/04/2026 12:00	00:15	33	52	26
11/04/2026 12:15	00:15	34	53	24
11/04/2026 12:30	00:15	31	48	24
11/04/2026 12:45	00:15	32	54	25
11/04/2026 13:00	00:15	32	51	26
11/04/2026 13:15	00:15	31	46	24
11/04/2026 13:30	00:15	32	44	26
11/04/2026 13:45	00:15	31	45	24
11/04/2026 14:00	00:15	41	71	26
11/04/2026 14:15	00:15	31	49	23
11/04/2026 14:30	00:15	31	45	25

Start Time (dd/mm/yyyy hh:mm)	Elapsed Time, T (hh:mm)	$L_{Aeq,T}$ (dB)	$L_{AF,max}$ (dB)	$L_{A90,T}$ (dB)
11/04/2026 14:45	00:15	41	68	27
11/04/2026 15:00	00:15	34	57	27
11/04/2026 15:15	00:15	32	42	24
11/04/2026 15:30	00:15	31	48	24
11/04/2026 15:45	00:15	40	67	25
11/04/2026 16:00	00:15	34	55	26

Glossary of Terms

Decibel (dB) The unit used to quantify sound pressure levels; it is derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is $20 \mu\text{Pa}$, the threshold of normal hearing is in the region of 0 dB, and 140 dB is the threshold of pain. A change of 1 dB is usually only perceptible under laboratory conditions.

dB L_A Decibels measured on a sound level meter incorporating a frequency weighting (A-weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB L_A broadly agree with an individual's assessment of loudness. A change of 3 dB L_A is the minimum perceptible under normal conditions, and a change of 10 dB L_A corresponds roughly to halving or doubling the loudness of a sound. The background noise level in a living room may be about 30 dB L_A ; normal conversation about 60 dB L_A at 1 meter; heavy road traffic about 80 dB L_A at 10 meters; the level near a pneumatic drill about 100 dB L_A .

$L_{A90,T}$ The A-weighted noise level exceeded for 90% of the specified measurement period (T). In BS 4142:2014+A1:2019 it is used to define background noise level.

$L_{Aeq,T}$ The equivalent continuous sound level. The sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period (T). $L_{Aeq,T}$ is used to describe many types of noise and can be measured directly with an integrating sound level meter.

$L_{AF,max}$ The highest A-weighted noise level recorded during the time-period using a Fast time-weighting. It is usually used to describe the highest noise level that occurred during the event.

