

Bowlee Football & Community Wellbeing Hub

Noise Impact Assessment Report

Client:

Rochdale Borough Council and Rochdale AFC
Number One Riverside
Smith Street, Rochdale, OL16 1XU

Date:

28 July 2026

Our Ref:

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**JAMESON
ACOUSTICS**

Consultants in acoustics,
noise and vibration

Document Control

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0	27-05-2026	AJ	-
1	20-07-2026	AJ	Minor corrections to text
2	28-07-2026	AJ	To show frozen site plan

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Executive Summary

Planning permission is sought for the redevelopment of Bowlee playing fields site for new football training facilities for Rochdale AFC and a new community health and wellbeing hub including reception, cafe, and new and enhanced sport pitches.

Jameson Acoustics Limited has been commissioned to undertake an assessment of the potential noise impacts generated by the proposed development when operational.

The assessment finds that acceptable noise levels from the operation of the sports pitches can be achieved at all nearby noise sensitive receptors. However, for a single dwelling to the south-west (456nr Heywood Old Rd), it is recommended that a solid acoustic barrier (e.g. timber fence) is erected along the boundary of the dwelling's rear garden to ensure the proposed noise limit can be achieved across the full garden space.

In relation to the operation of the proposed buildings, noise emission limits have been proposed for any new items of external fixed plant.

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1.0 Introduction

Planning permission is sought for the redevelopment of Bowlee playing fields site for new football training facilities for Rochdale AFC and a new community health and wellbeing hub including reception, cafe, and new and enhanced sport pitches.

Jameson Acoustics Limited has been commissioned to undertake an assessment of the potential noise impacts generated by the proposed development when operational.

Our assessment and findings are presented herein.

NB: For a description of the acoustic terminology used herein, please see Appendix A.

2.0 Objectives

To review relevant design standards and good practice guides to determine the assessment methodology and criteria.

To carry out a baseline environmental noise survey at the site over a minimum 24-hour period, to establish baseline noise levels in accordance with BS 7445 and BS 4142.

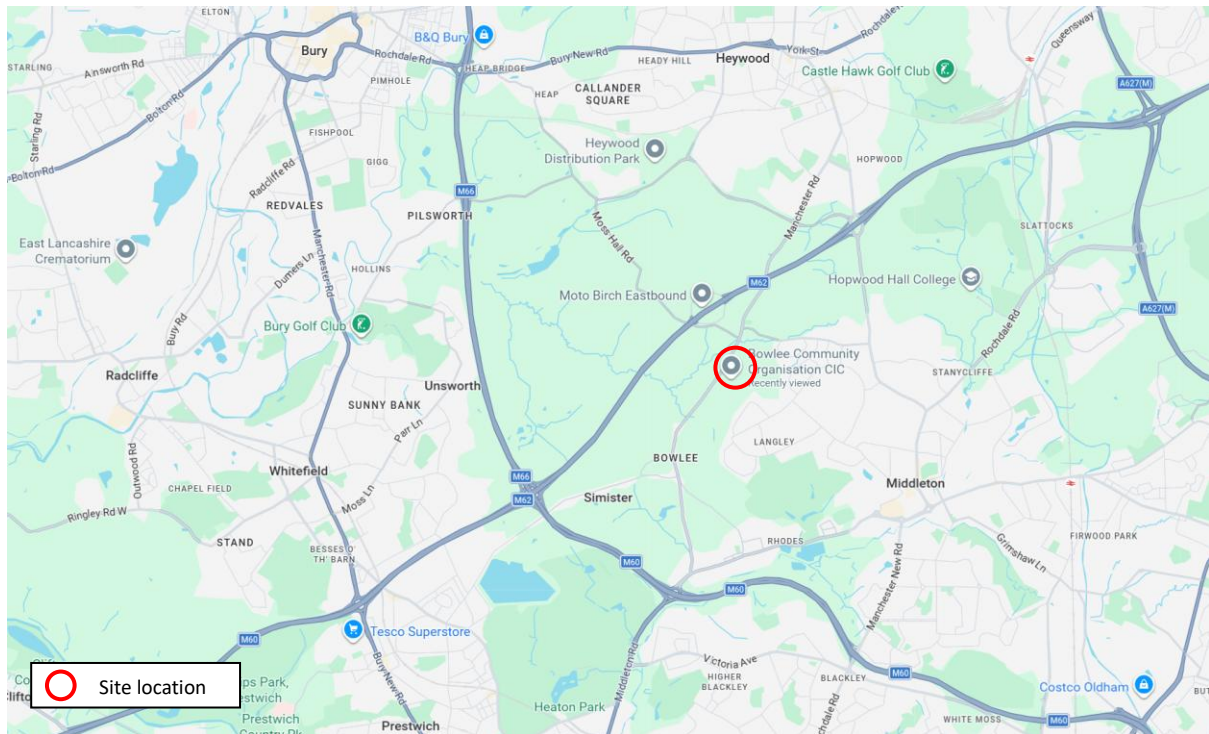
With consideration for the baseline noise climate, to assess potential noise impacts from the operation of the proposed facility, namely noise impacts from the use of the sports pitches. To advise on noise mitigation measures as required/appropriate.

To set noise emission limits for any new items of fixed plant associated with new buildings on the site.

3.0 Site Description

3.1 Location

The site is located off Heywood Old Road in Middleton and falls under the jurisdiction of Rochdale Borough Council (RBC). See location plan below.



Location Plan (© maps.google.co.uk)

3.2 Site Context

The site currently comprises a former community hub building with a small car park, a cricket pitch to the south-western quarter of the site, and open playing fields to the north and east. The site lies adjacent to Edgar Wood Academy to the north-east, with Bowlee Community Park immediately adjacent to the east, forming part of a wider cluster of educational, recreational and community uses. The north-western boundary of the Site is defined by Heywood Old Road, a key local distributor road providing vehicular access and connectivity to the surrounding area.

The nearest noise sensitive receptors to the proposed development, in addition to the Edgar Wood Academy, are dwellings to the south-west and north-west, along Heywood Old Road, and dwellings to the south-east beyond the Bowlee Community Park on Latrigg Crescent and Thursby Walk. These have been labelled as noise sensitive receptors (NSRs) on the site plan below.

The noise climate in the area is dominated by local and distant road traffic. Heywood Old Road is a well frequented two-way A road, and it is traffic on this road together with distant traffic noise from the M62 motorway, which runs to the north just over half a kilometre from the nearest site boundary, which are the most influential traffic noise sources.

See site plan below.



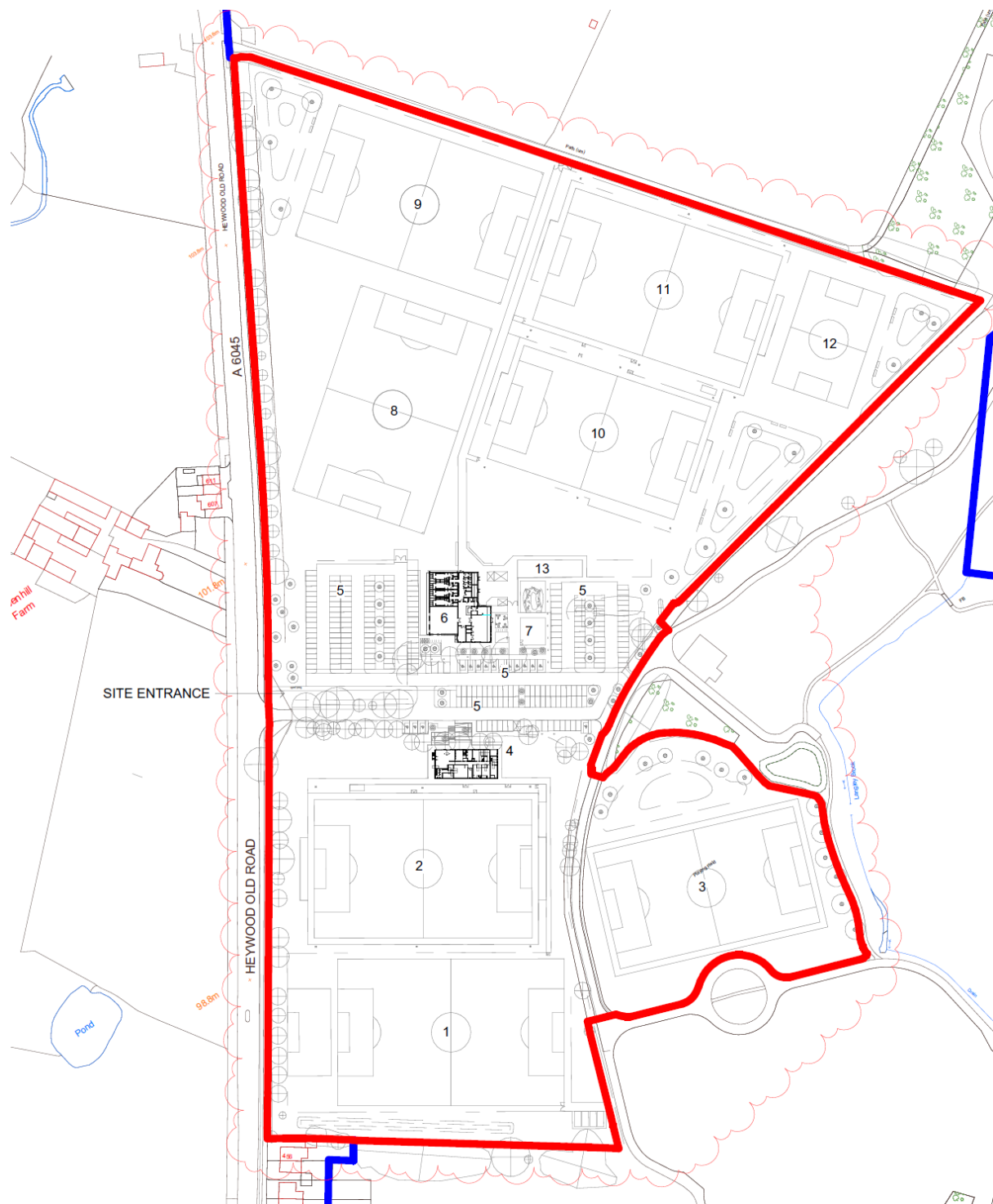
Site Plan (© maps.google.co.uk)

4.0 Proposed Development

The proposal is to demolish the existing community building and erect a new facility with reception, café and associated changing facilities, along with 6nr football grass pitches with associated car parking and landscaping.

The facility would not operate beyond daytime hours; i.e. not before 7am or after 11pm (with sports pitches in use up to 10pm).

See proposed site plan below.



Proposed Site Plan

5.0 Assessment Methodology & Criteria

5.1 National Planning Policy

5.1.1 Noise Policy Statement for England (NPSE)

The Noise Policy Statement for England (NPSE) launched in March 2010 states the long-term vision of Government noise policy is to *“promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development”*.

The long-term vision is supported by the following aims; through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life;
- Where possible, contribute to the improvement of health and quality of life.

The intention is that the NPSE should apply to all types of noise apart from noise in the workplace (occupational noise).

The NPSE introduces a three-tier concept for the assessment of noise impacts onto a receptor:

- **NOEL – No Observed Effect Level:** The level below which no effect can be detected and below which there is no detectable effect on health and quality of life due to noise.
- **LOAEL – Lowest Observable Adverse Effect Level:** The level above which adverse effects on health and quality of life can be detected.
- **SOAEL – Significant Observed Adverse Effect Level:** The level above which significant adverse effects on health and quality of life occur.

There are no numeric thresholds relating to each of the above. The NPSE acknowledges that the severity of noise impacts vary depending upon the type of noise, the type of receptor, the duration (on-time) of the noise, the characteristics of the noise, the time of day, the day of the week, etc.. As a result, the definition of what constitutes an SOAEL is somewhat flexible.

5.1.2 National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) was first published in 2012 and sets out the government’s planning policies for England and how these are expected to be applied.

The latest revision of the NPPF (December 2024) states that planning system should ensure that *“...developments will function well and add to the overall quality of the area. They should be sympathetic to*

local character and history, including the surrounding built environment while not preventing or discouraging appropriate innovation or change”. Ref: Paragraph 135.

Paragraph 187 advises:

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

(a)-(d) [...]

*(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, and*

(f) [...]”

Paragraph 198 advises:

“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; and*

(c) [...]”

The NPPF recognises 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.”*

Ref. Paragraph 200.

“The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.” Ref. Paragraph 201.

5.1.3 Planning Practice Guidance on Noise (PPG)

The National Planning Practice Guidance (PPG) is a web-based resource, launched by the Department for Communities and Local Government (DCLG) in March 2014 to support the NPPF and make it more accessible. It advises on how planning can manage potential noise impacts in new development. The guidance is regularly reviewed and updated and noise is listed as a specific category. The guidance is for ad hoc developments, as major infrastructure is covered by overarching National Policy Statements.

PPG provides the following tabulated summary of the effects of noise exposure (in terms of health and quality of life) associated with noise generating and sensitive developments.

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not present	No effect	No Observed Effect	No specific measures required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

5.2 Local Planning Policy

The Core Strategy for Rochdale Borough Council (RBC) was adopted on 19 October 2016 and is the Council's leading document in the Local Plan.

Policy G9 of the Core Strategy relates to the control of pollution and states *“Noise, including transport noise, is an increasing problem which can affect quality of life and health. Careful consideration of this should take place when new developments are being designed”*. Policy DM1 concerns general development requirements, and also states the need to mitigate noise impacts.

Further policies are outlined in the Council’s Unitary Development Plan, 2006, including Policies H/10 and H/12 relating to housing/multi-dwelling developments, which states *“the proposal should not have any adverse impact upon the character of the surrounding area or the amenity of residents in any adjoining properties by reason of noise, visual intrusion or loss of privacy”*.

Policy EM/3 pertains to noise and new development, and states *“Development will not be permitted where: a) It would lead to unacceptable levels of noise nuisance to nearby existing or future occupants of buildings, or users of open space; or b) It involves a noise sensitive use (such as housing, a school or hospital) which would be sited in or close to an area that is, or is likely to become, subject to unacceptably high levels of noise generation. Where the effects of existing noise on proposed new development, or noise likely to be generated by new development, can be adequately controlled by design, landscaping and other measures, as enforced by planning conditions, the Council will grant planning permission, provided the development is acceptable in all other respects”*.

At this stage, there has been no consultation with RBC’s environmental health team to determine specific noise control criteria for the operation of the facility. However, it is envisaged that the local authority will expect a detailed noise assessment which can demonstrate a low probability of adverse impact on local residents when assessed to the latest, most relevant industry design standards and guides, such as Sports England, British Standard BS 8233 and World Health Organisation (WHO) guidelines.

In relation to plant noise emissions (from any fixed external equipment associated with the new building), we understand from experience that RBC expect plant noise to be controlled to a level not exceeding the prevailing background noise level when assessed in accordance with BS 4142: 2014+A1: 2019.

5.3 Relevant Standards & Guides

5.3.1 World Health Organisation (WHO)

The current WHO Environmental Noise Guidelines 2018 for the European Region supersede the 1999 Guidelines for Community Noise, although it does suggest that the 1999 values for outdoor noise levels for dwellings remain valid, as presented below.

Location	Critical Health Effect(s)	Noise Limit
Outdoor living area (gardens)	Serious annoyance, daytime/evening	55 dB $L_{Aeq,16hr}$
	Moderate annoyance, daytime/evening	50 dB $L_{Aeq,16hr}$
Outside bedroom window (night-time, 23:00-07:00)	Sleep disturbance, window open	45 dB $L_{Aeq,8hr}$
		60 dB $L_{Amax,f}$

The above guideline values apply as a threshold above which “critical health effects” may occur. The values are therefore at the lowest noise limit to which any psychological or physiological effects may be triggered. With reference to the NPSE, these values are set at the Lowest Observed Adverse Effect Level (LOAEL). The WHO guidelines do not define the level above which effects would be considered significant (SOAEL). Designing for compliance with the LOAEL would, therefore, be considered the ‘ideal’ robust approach.

Exceedances of the WHO guideline values do not necessarily imply significant noise impact and, indeed, it may be that significant impacts do not occur until much higher degrees of noise exposure are reached.

Note that the above tend to apply to continuous noise sources, such as road/rail traffic, and hence the time base for assessment is drawn out to full day (16hr) and night (8hr) periods. When assessing more transient noise sources, a reduced time base of 1 hour is considered more appropriate.

5.3.2 Change in Noise Level

The following Table shows the human response to changes in noise, developed by the Institute of Acoustics and used/accepted by numerous authorities, inspectors (at inquiry) to evaluate the effects of changes in L_{Aeq} noise levels.

Change in Noise Level, $L_{Aeq,T}$ (dB)	Response	Impact
< 3	Imperceptible	Negligible
3-5	Perceptible	Slight-to-Moderate
6-10	Up to a doubling in loudness	Moderate-to-Significant
11-15	More than a doubling in loudness	Substantial
>15	-	Severe

If the specific noise source is controlled to a level that does not exceed the prevailing ambient noise climate, the change in noise level would be less than 3 dB L_{Aeq} which, in accordance with the above table, would provide a positive indication that adverse noise impacts are unlikely.

5.3.3 Sports England

Sports England published a Design Guidance Note “Artificial Grass Pitch (AGP) Acoustics – Planning Implications” in August 2015. This states the following:

“The determining noise criteria for AGPs proximity to residential properties, to avoid moderate annoyance in the daytime and evenings, as set by The World Health Organisation’s ‘Guidelines for Community Noise’: = 50dB $L_{Aeq}(1hour)$ upper noise limit external to residential properties and within external living areas.”

5.3.4 BS 4142: 2014+ A1: 2019

British Standard BS 4142: 2014+A1: 2019 ‘Methods for rating and assessment industrial and commercial sound’ looks at the assessment of noise of a commercial / industrial nature (e.g. plant). It describes methods for rating and assessing outdoor sound of an industrial and/or commercial nature “on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident”.

The assessment method is based on the difference between the measured 'background sound level', and the 'rating level' of the industrial source, at the receiver location. The standard states that:

- *"a difference of around +10 dB or more is likely to be an indication of a significant adverse impact";*
- *"a difference of around +5 dB is of marginal significance is likely to be an indication of an adverse impact";*
- *"where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact".*

The time-base for assessment is defined as 1-hour for daytime operations (07:00-23:00 hr) and 15-minutes for night-time operations (23:00-07:00 hr). An acoustic feature correction should be applied to any specific sound source emitting attention-grabbing noise characteristics, such as tonality.

Importantly, the standard applies 'context' to the assessment. The evaluation of noise impact is not just determined through the objective numeric assessment, but also with consideration for the site context, e.g. is the receptor already exposed to similar noises, how sensitive is the receptor, how often and for how long does the noise occur.

5.3.5 Summary

The site context in this case is that the development will replace a former sporting facility with outdoor sports use of the fields, including a cricket pitch to the south-west field. Consequentially, the proposed facility would not be introducing a 'new' type/character of noise source to the area, but rather enhancing a current sports offering. The noise would be classed as 'community noise', for which the consideration of WHO noise guidelines would be appropriate.

In cases where noise conditions in the general vicinity of the dwelling's outdoor living area or façade are already greater than the threshold for serious annoyance (55 dB L_{Aeq}), it would be reasonable to set 55 dB L_{Aeq} as the noise limit from the use of the sports pitches. Where it falls below this threshold, a limit of 50 dB L_{Aeq} would be more sensible, so as to align with the level for onset of moderate annoyance. This also aligns with Sports England guidance.

Together with a review of absolute noise limits at residential boundaries, we shall also consider the change in ambient L_{Aeq} noise level based on surveyed baseline (existing) noise levels representative of conditions at each noise sensitive receptor, with a maximum change in noise level of +3 dB considered sensible.

For plant noise emissions (from the operation of the proposed building), limits shall be set so as not to exceed the existing background noise level in line with BS 4142.

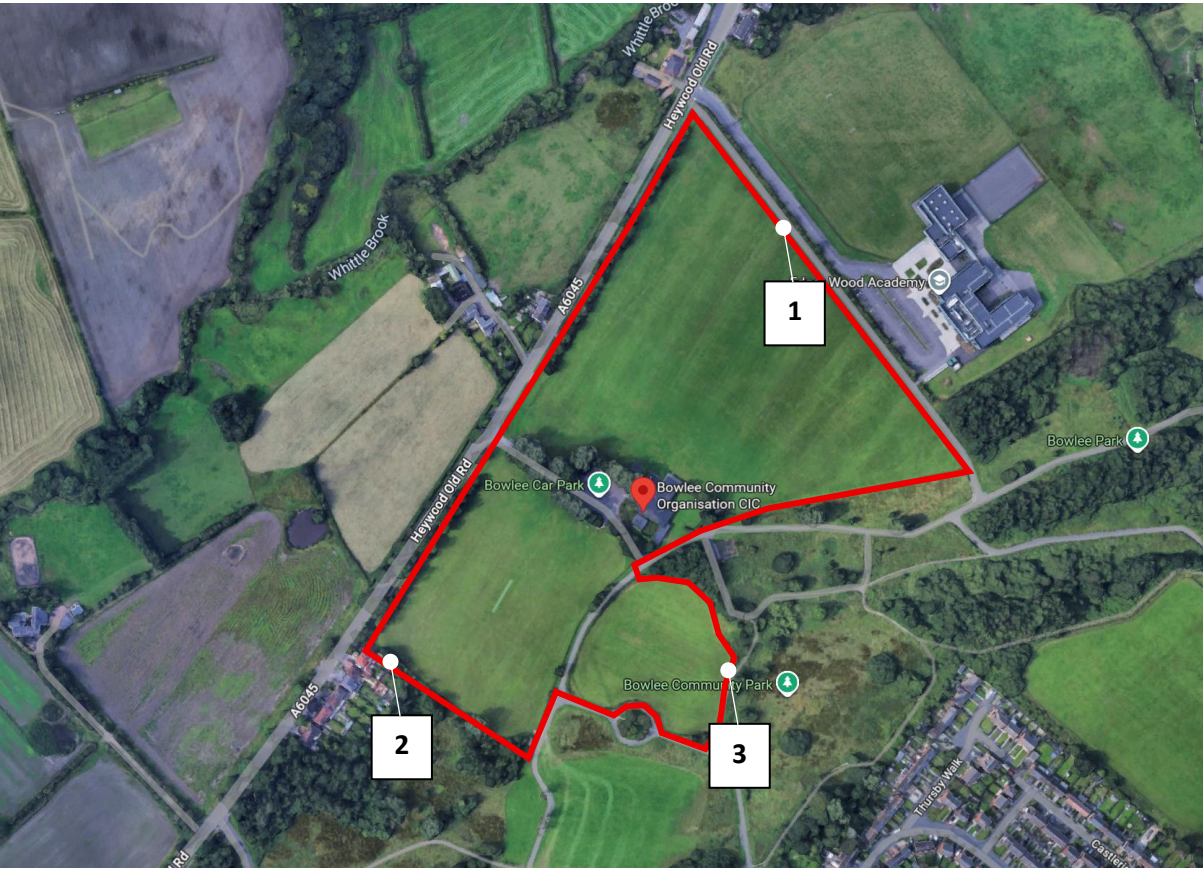
6.0 Baseline Noise Survey

6.1 Procedure

Automated noise level measurements were taken from 07:00hr on Wednesday 29 April 2026 to 07:00hr on Thursday 30 April 2026 at 3nr on-site positions. The positions were selected to establish the prevailing

daytime & night-time ambient, maximum and background noise levels at positions deemed representative of conditions at the four noise sensitive receptors named in Section 3.2.

Position	Type	Description
1	Automated	On the north boundary of site, near to the Edgar Wood Academy. Mic attached to railings approx. 120 m from roadside edge of Heywood Old Rd, 2.5 m above ground.
2	Automated	To south-west corner of site, near to rear garden of neighbouring dwelling. Mic attached to fence approx. 30 m from Heywood Old Rd, 3.0 m above ground.
3	Automated	To south-east edge of site, at boundary with community park. Mic attached to mesh fence approx. 230 m from roadside edge of Heywood Old Rd, 3.0 m above ground.



Site Plan showing measurement positions (© maps.google.co.uk)

At each position, the microphone was fitted with a windshield and programme to continuously log all relevant A-weighted broadband (dBA) and linear spectral noise level indices, including L_{eq} , L_{90} , L_{10} and L_{max} , over 15-minute and 1-hour intervals.

All positions were sufficiently away from reflective surfaces to be considered ‘free-field’.

All measurements were taken in general accordance with BS 7445-1: 2003 ‘Description and Measurement of Environmental Noise’.

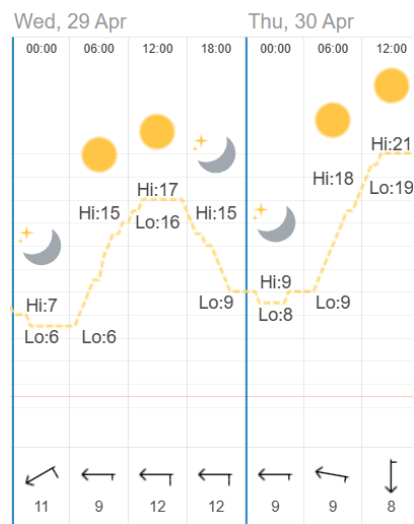
6.2 Instrumentation

The instrumentation used for the survey is summarised below. The sound level meters were hand-calibrated at the beginning and end of the survey periods. No significant deviations in calibration level were noted.

Description	Equipment	Serial Nr	Lab Calibration Expiry	Lab Calibration Certificate Nr
Class 1 sound level meter	Svantek 971A (with Type 7152 mic)	127647 (84398)	25 Jul 2027	1512926-1
Class 1 sound level meter	Svantek 971A (with Type 7152 mic)	131642 (85571)	25 July 2027	1512926-2
Class 1 sound level meter	Svantek 971A (with Type 7152 mic)	154301 (94512)	16 Jan 2027	16 Jan 2025
Class 1 sound calibrator	Cirrus CR:515	57570	11 Nov 2026	1190855

6.3 Weather Conditions

Due to the nature of the survey, i.e. unmanned, it is not possible to describe the noise climate throughout the duration of the survey period. However, on install and collection, weather conditions were considered suitable for obtaining representative readings with clear skies, low wind speeds and dry road surfaces. Based on internet weather reports, below, the conditions remained suitable throughout the duration.



6.4 Observed Noise Climate

Due to the nature of the survey, i.e. unmanned, it is not possible to describe the noise climate throughout the duration of the survey period. However, on install and collection the noise climate was noted to be dominated by road traffic on Heywood Old Road (for Positions 1 & 2) with distant road traffic from the M62 to the north contributing during lulls in local traffic. For Position 3, the noise climate was perhaps influenced most by the M62 with traffic on Heywood Old Road also contributory.

6.5 Survey Results & Analysis

The results of the automated survey have been plotted on Time History Graphs 22315-G1 to G3 enclosed in Appendix B. The graphs present the broadband A-weighted L_{A90} , L_{Aeq} and L_{Amax} noise levels logged over 15-minute intervals.

A summary of the results, as used to inform subsequent assessments against current guidelines, is presented in the following tables.

L_{Aeq} Ambient Noise Levels

The range/typical 1-hour L_{Aeq} ambient noise levels

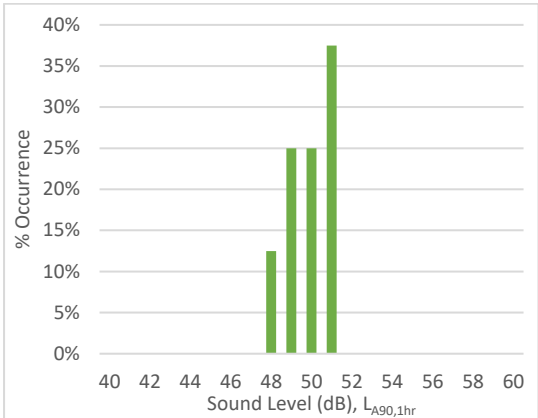
Position	Period	Free-Field Ambient Noise Level, dB $L_{Aeq,1hr}$ Typical (Range)
1	Early morning, 07:00-10:00	55 (54-56)
	Daytime, 10:00-18:00	57 (55-59)
	Evening, 18:00-22:00	52 (51-53)
2	Early morning, 07:00-10:00	59 (58-60)
	Daytime, 10:00-18:00	60 (59-61)
	Evening, 18:00-22:00	57 (56-57)
3	Early morning, 07:00-10:00	53 (51-54)
	Daytime, 10:00-18:00	53 (51-54)
	Evening, 18:00-22:00	50 (49-52)

L_{A90} Background Noise Levels

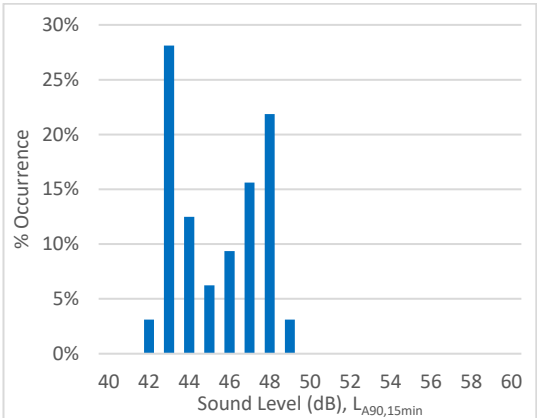
The representative background determined through statistical analysis to BS 4142

Position	Background Noise Level (dB)	
	Daytime $L_{A90,1hr}$ (07:00-23:00)	Night-time $L_{A90,15min}$ (23:00-07:00)
1	49	43
2	55	45
3	49	43

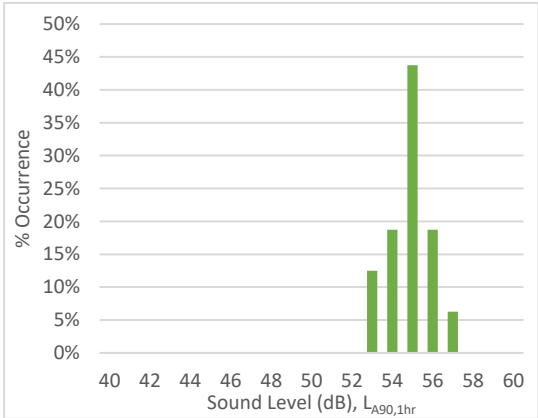
See below graphs showing the % distribution of background noise levels at each position.



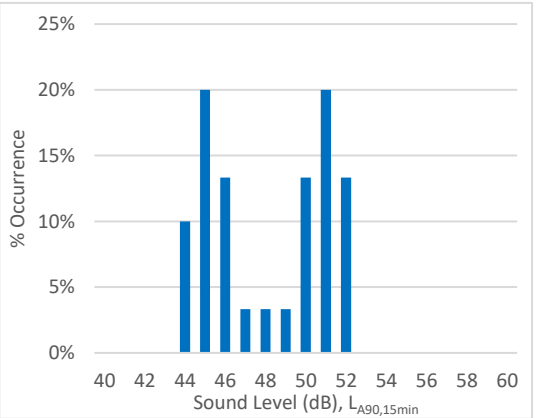
Position 1 – Daytime



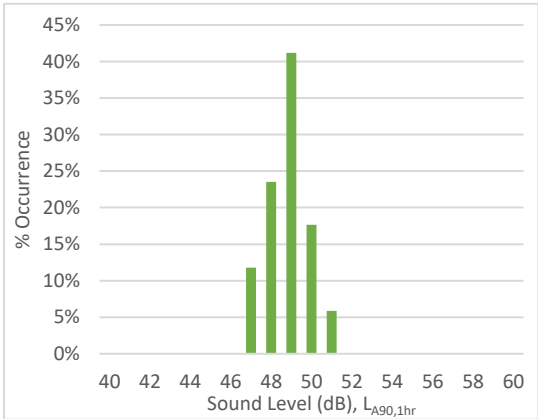
Position 1 – Night-time



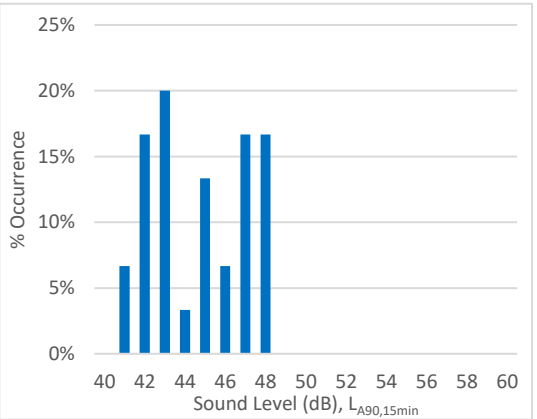
Position 2 – Daytime



Position 2 – Night-time



Position 3 – Daytime



Position 3 – Night-time

7.0 Football Pitches Noise Assessment

7.1 Criteria

The results of the survey at Position 2 provides representative noise conditions for NSR A to C (dwellings), all of which are dwellings along Heywood Old Road. These dwellings are typically subject to noise conditions that exceed 55 dB $L_{Aeq,1hr}$ in the evening. Hence, a noise limit of ≤ 55 dB $L_{Aeq,1hr}$ would be considered appropriate. This would ensure noise from the use of the sports pitches falls below the WHO threshold for serious annoyance and the relative change in ambient noise level would not exceed +3 dB (thus ensuring a 'negligible' noise impact in line with Section 5.3.2).

The results of the survey at Position 1 provides representative noise conditions for NSR D (secondary school). It is reasonable to assume the school is sensitive to noise during normal teaching hours (e.g. 09:00-16:00hr). During these hours, current noise levels exceed 55 dB L_{Aeq} . Hence, a noise limit of ≤ 55 dB $L_{Aeq,1hr}$ would be considered appropriate for the same reasons as discussed above for NSR A to C.

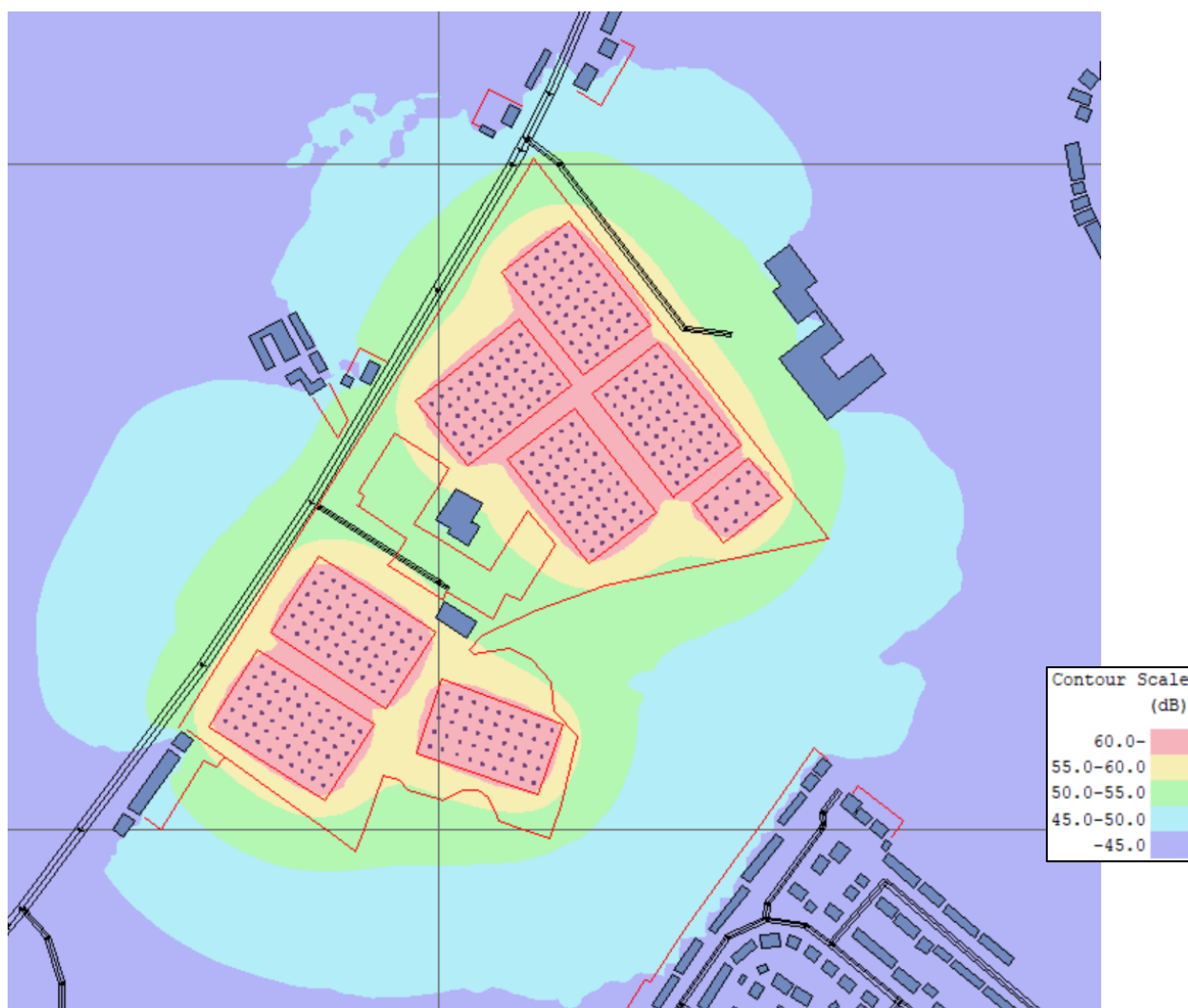
The results of the survey at Position 3 provides representative noise conditions for NSR E (dwellings). These dwellings are typically subject to noise conditions that fall below 55 dB $L_{Aeq,1hr}$ in the evening. Hence, a noise limit of ≤ 50 dB $L_{Aeq,1hr}$ would be considered appropriate. This would ensure noise from the use of the sports pitches falls below the WHO threshold for moderate annoyance and the relative change in ambient noise level would not exceed +3 dB (thus ensuring a 'negligible' noise impact in line with Section 5.3.2).

7.2 Pre-Mitigation Assessment

The above source noise data has been used to calibrate noise output from each of the proposed courts in a 3D noise model of the site. The noise model considers noise propagation in line with ISO 9613-2 and captures true site topography and building size/positioning taken from OSdatahub and Defra.

For the source noise data, an array of noise sources has been placed on each sports pitch with a sound power level calibrated to achieve a noise level of 58 dB $L_{Aeq,1hr}$ at 10 m from the sideline (halfway line). This is in line with Sports England's suggested noise output from artificial grass pitches, which is deemed suitably pessimistic for grass pitches, noting that grass will absorb more sound over distance than an artificial pitch.

The following Figure presents the spread of ambient L_{Aeq} noise levels based on all pitches in use. The noise map is set to a typical standing ear height of 1.6 metres above local ground level. Neighbouring residential properties are shown, and their respective garden boundaries are marked. Note, garden fencing has not been model on the assumption that these may be hit-and-miss panel fencing offering little to no acoustic benefit.



Noise model showing spread of noise, pre-mitigation, $L_{Aeq,1hr}$

The resultant noise levels from the concurrent operation of all sports pitches are summarised below.

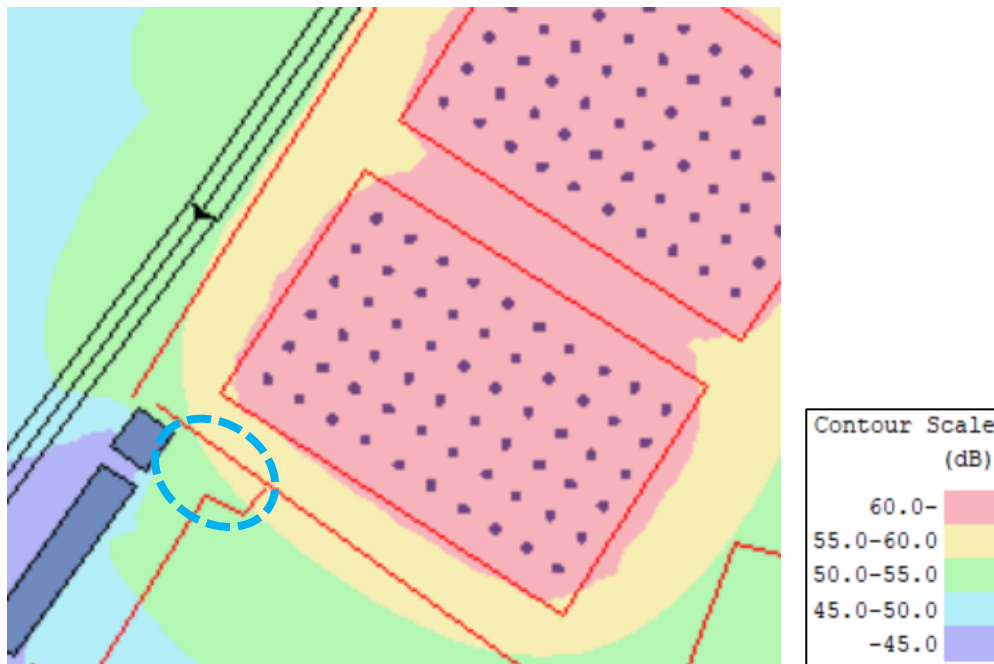
NSR	Location	Free-Field Ambient Noise Level, $dB L_{Aeq,1hr}$
A	At façade	53
	Within garden	55-56
B	At façade	52
	Within garden	50
C	At façade	48
	Within garden	47
D (school)	At façade	53
	Within garden	N/A
E	At façade	46
	Within garden	46

¹ At façade = Incident onto nearest and most exposed ground floor window to the sports pitches

² Within garden = The average noise level within the nearest and most exposed private garden to the sports pitches

The results indicate compliance with the proposed noise limits at all receptors, with the exception of the levels within the rear garden of NSR A.

The following Figure presents a zoomed in view of the model where it can be seen that part of the rear garden of the nearest dwelling (456nr Heywood Old Rd) exceeds the proposed noise limit of 55 dB $L_{Aeq,1hr}$ by a minor amount (up to 1 dB).



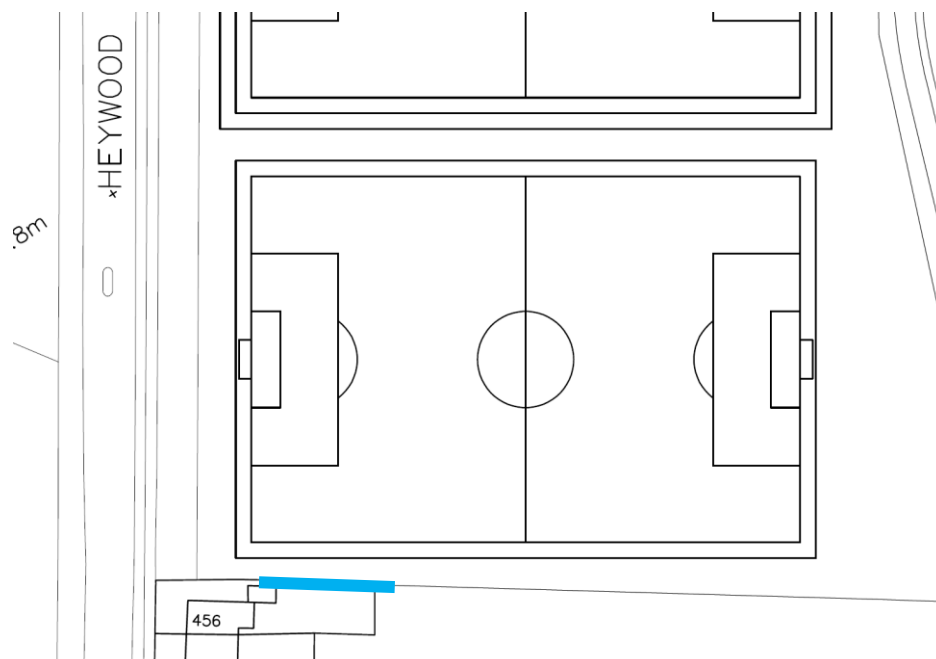
Given the proximity of the rear garden of this dwelling to the pitches, it may be prudent to consider noise mitigation solutions to ensure noise limits can be satisfied in all areas of the garden, as per all other NSRs.

The following section proposes a noise mitigation solution for the rear garden of this dwelling.

7.3 Proposed Noise Mitigation to NSR A

We would propose the inclusion of a solid acoustic barrier (e.g. an imperforate timber fence) is erected along the boundary to the rear garden of 456nr Heywood Old Road. The acoustic barrier shall conform to the following minimum acoustic specification:

- Imperforate (solid) barrier providing a minimum panel mass per unit area of **12.0 kg/m²**.
- Acoustic barrier to be built off the ground and extend up to a minimum height of **2.0 metres**.
- Barrier to be installed to the minimum extent shown below (**blue line**).



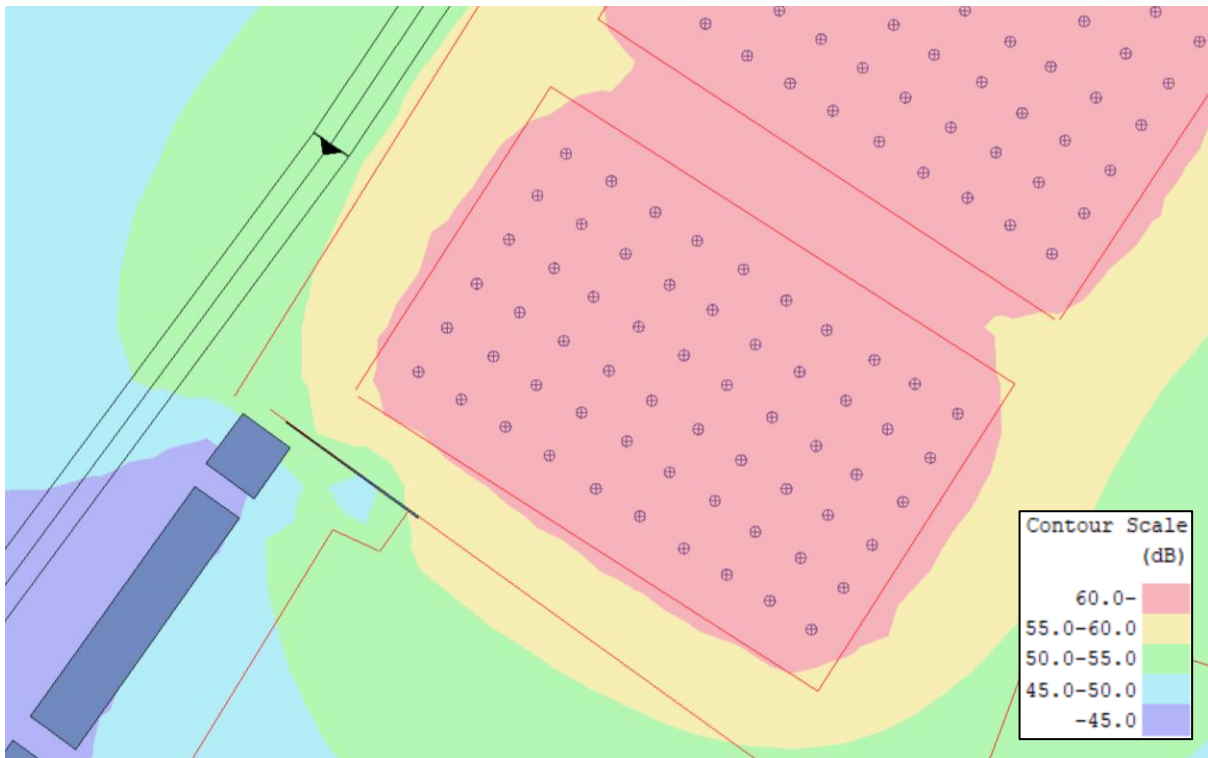
Extent of 2.0 metre tall acoustic barrier (in blue)

A suitable product would be a 'noise reduction' timber fence, e.g. by Jacksons Fencing, as shown below.



7.4 Post-Mitigation Assessment

The noise model has been updated to include the above mitigation (barriers), and the following Figure shows the post-mitigation spread of ambient L_{Aeq} noise levels to NSR A.



Noise model showing spread of noise to NSR A, post-mitigation, L_{Aeq,1hr}

The results demonstrate that the proposed limit of 55 dB L_{Aeq,1hr} would be achieved across the full garden space. It would also reduce incident noise levels onto the ground floor rear windows of this dwelling, and noise levels within gardens/ground floor windows of the neighbouring NSR A dwellings.

The resultant noise levels from the concurrent operation of all sports pitches, post-mitigation, are summarised below.

NSR	Location	Free-Field Ambient Noise Level, dB L _{Aeq,1hr}
A	At façade	50
	Within garden	51
B	At façade	52
	Within garden	50
C	At façade	48
	Within garden	47
D (school)	At façade	53
	Within garden	N/A
E	At façade	46
	Within garden	46

¹ At façade = Incident onto nearest and most exposed ground floor window to the sports pitches

² Within garden = The average noise level within the nearest and most exposed private garden to the sports pitches

The table confirms that the proposed noise limits would be achieved at all receptors with all sports pitches in use.

8.0 Building(s) Operational Noise – Plant Noise Limits

Based on the results of the noise survey and the requirements of the Local Authority, we propose the following plant noise emission limits to be achieved incident at the nearest noise sensitive windows and garden boundaries with all external fixed plant associated with the proposed buildings when operational. These limits are set to ensure plant noise does not exceed the prevailing 'representative' background noise levels.

Receptor	Plant Noise Rating Limit, $L_{Ae,Tr}$ ref. BS 4142 (dB)	
	Daytime (07:00-23:00)	Night-time (23:00-07:00)
Anye	49	43

Noise shall be assessed in accordance with BS 4142:2014 with corrections applied for any plant emitting noise of a tonal or irregular quality.

9.0 Conclusions

Planning permission is sought for the redevelopment of Bowlee playing fields site for new football training facilities for Rochdale AFC and a new community health and wellbeing hub including reception, cafe, and new and enhanced sport pitches.

Jameson Acoustics Limited has been commissioned to undertake an assessment of the potential noise impacts generated by the proposed development when operational.

The assessment finds that acceptable noise levels from the operation of the sports pitches can be achieved at all nearby noise sensitive receptors. However, for a single dwelling to the south-west (456nr Heywood Old Rd), it is recommended that a solid acoustic barrier (e.g. timber fence) is erected along the boundary of the dwelling's rear garden to ensure the proposed noise limit can be achieved across the full garden space.

In relation to the operation of the proposed buildings, noise emission limits have been proposed for any new items of external fixed plant.

Appendix A – Acoustic Terminology

dB	Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form.
dB(A)	The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The _A subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted (e.g. $L_{Aeq,T}$ in dB). Noise levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is only just perceptible.
$L_{Aeq,T}$	$L_{Aeq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time measurement period, T .
$L_{10,T}$	L_{10} is the noise level exceeded for 10% of the measurement period T (i.e. the quietest 10% of the measurement) and has, for many years, been used in the assessment of road traffic noise.
$L_{90,T}$	L_{90} is the noise level exceeded for 90% of the measurement period T (i.e. the quietest 10% of the measurement) and is often used to describe the 'background' noise level.
L_{max}	L_{max} is the maximum sound pressure level recorded over the measurement period, T . L_{max} is often used in assessing scheduled environmental noise 'events' (such as train passbys), particularly at night where such events may cause sleep disturbance.
R_w	The weighted sound reduction index, R_w , is a single figure description of sound reduction as defined in BS EN ISO 717-1. It is single-number quantity which characterizes the airborne sound insulating properties of a material or building element over a range of frequencies. The R_w is calculated from sound insulation measurements taken in an acoustic laboratory. Sound insulation ratings derived from site measurements are invariably lower than the laboratory figures and are referred to as the apparent weighted sound reduction index, R'_w .
$D_{n,e,w}$	The weighted element-normalised level difference, $D_{n,e,w}$, is a single figure description of the sound insulation performance of small building elements, such as a trickle ventilator.
C_{tr}	C_{tr} is correction term applied against the sound insulation single-number values (e.g. R_w) to provide a weighting against low frequency performance. The reference values used within the C_{tr} calculation are based on urban traffic noise.

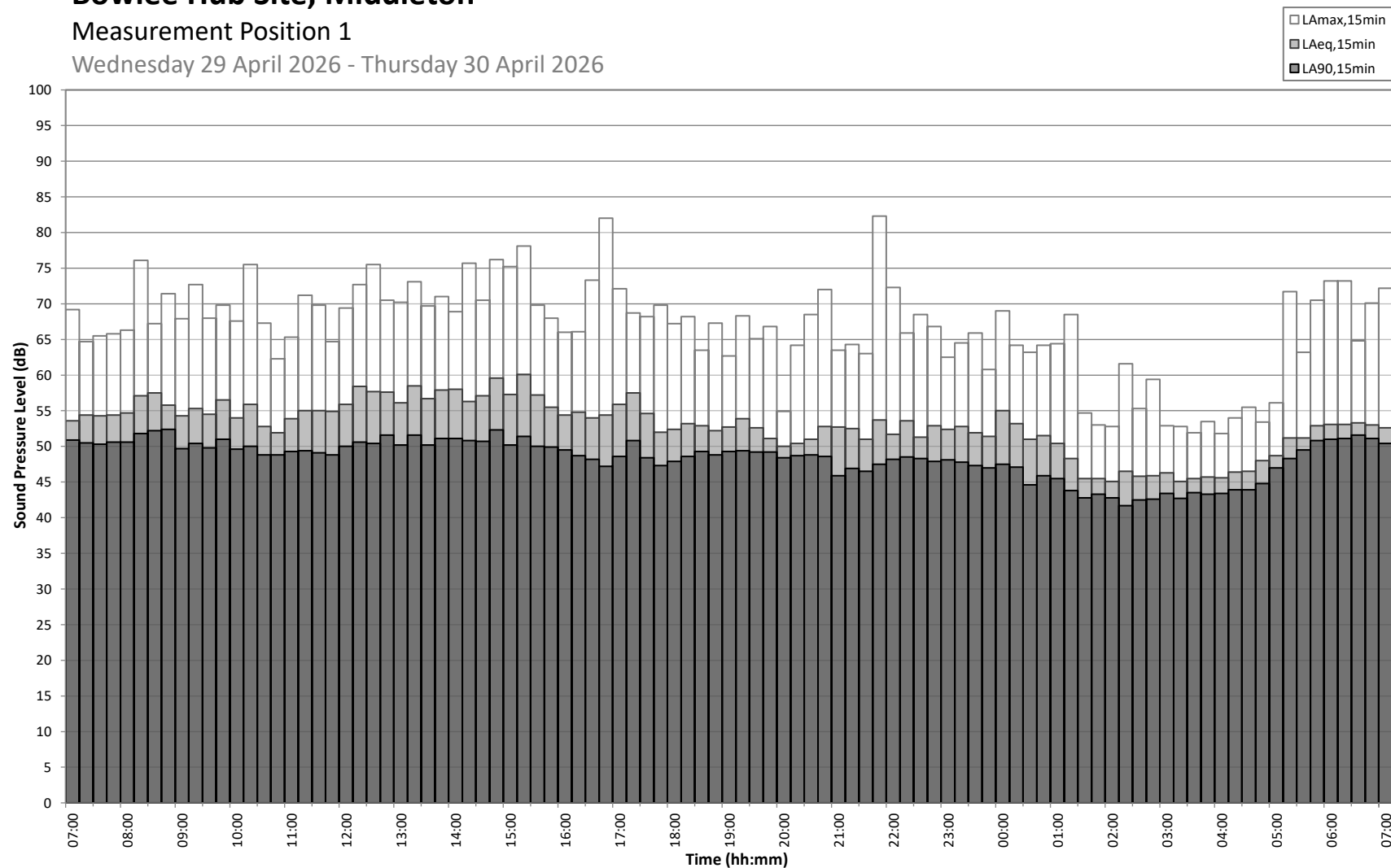
Appendix B – Time History Graphs

Bowlee Hub Site, Middleton

Measurement Position 1

Wednesday 29 April 2026 - Thursday 30 April 2026

22315-G1

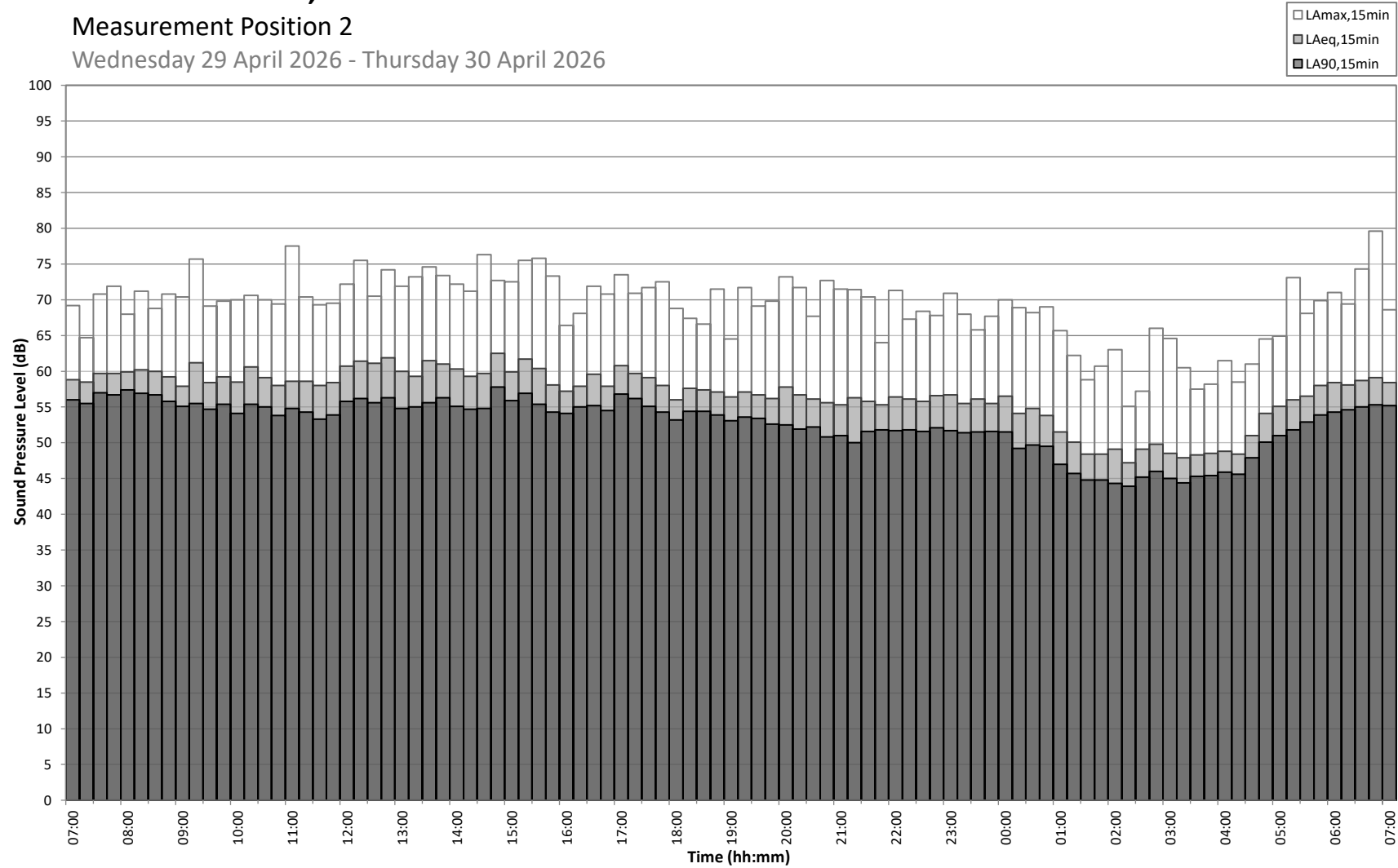


Bowlee Hub Site, Middleton

Measurement Position 2

Wednesday 29 April 2026 - Thursday 30 April 2026

22315-G2



Bowlee Hub Site, Middleton

Measurement Position 3

Wednesday 29 April 2026 - Thursday 30 April 2026

22315-G3

