4G Pitch
Didsbury High School
Manchester

Acoustic Planning Report
1387/APR1

12 May 2025

For:

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1.0 Introduction

Extended operational hours are proposed for the existing 4G pitch at Didsbury High School, Manchester. Lighthouse Acoustics has been appointed by Laurus Trust to undertake an assessment of typical operational sound from the existing 4G pitch to the adjacent residential properties.

The survey methodology, results and assessment are presented in this report.

2.0 Objectives

To visit site to undertake a detailed environmental sound survey in order to establish existing environmental sound levels at the site boundary with the adjacent residential properties.

To undertake an assessment of typical operational sound from the existing 4G Pitch to the adjacent residential properties.

To comment on the acceptability and propose mitigation measures where required in order to minimise the impact to the adjacent residential properties.

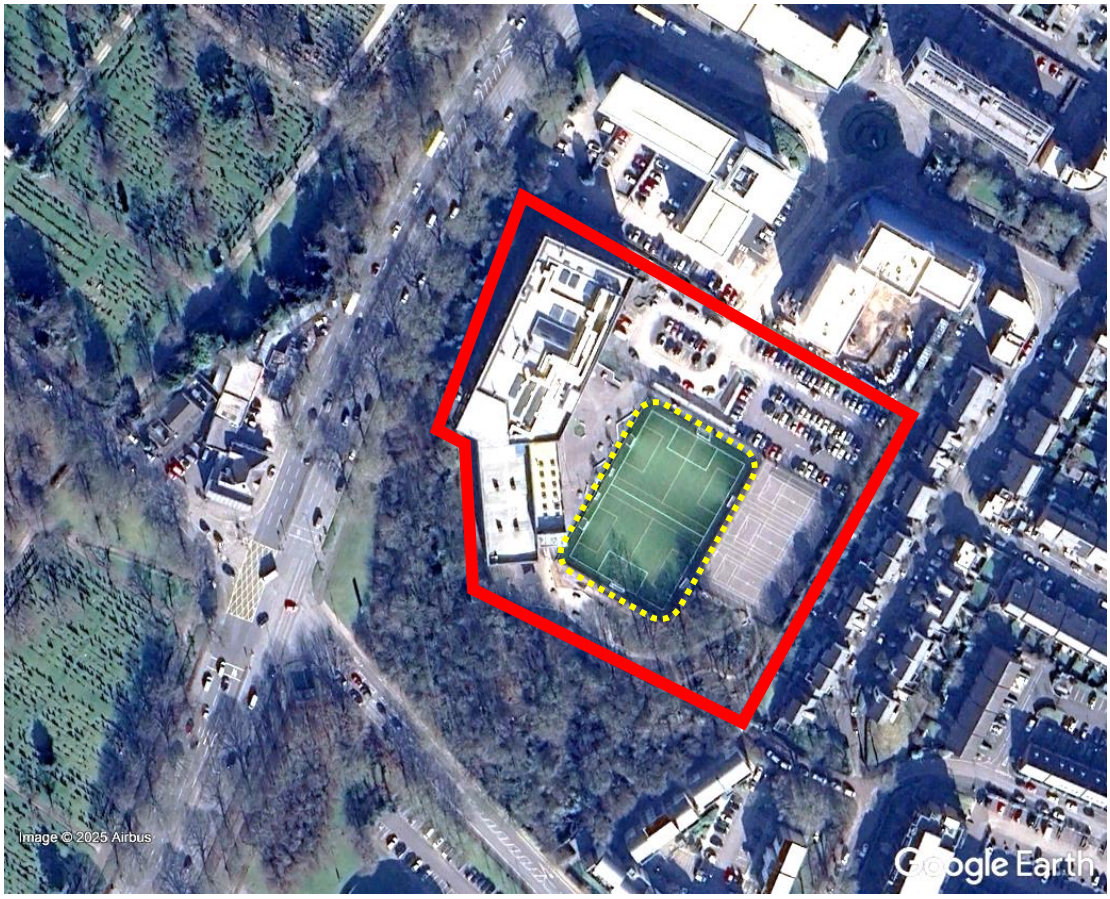
3.0 Site Description

The existing 4G Pitch is situated at Didsbury High School, Manchester. The site is bound by offices to the north east, residential properties to the south east, woodland and Nell Lane to the south west and Princess Road (A5103) to the north west.

The existing 4G Pitch is situated in the centre of the site and currently operates between 09:00 and 17:00 hours Monday to Friday for use by students. The proposed extended operating hours are 08:30 to 16:00 hours Saturday and Sunday (no bank holidays) for use by the community.

The nearest noise sensitive receptors are residential properties situated to the south east of the site along Clearwater Drive.

The site plan overleaf indicates the extent of the site and the surrounding environment.



Site plan indicating the extent of the site and the surrounding environment

4.0 Local Authority Requirements

It is understood that Manchester City Council Planning Department have requested an assessment of typical operational sound from the 4G Pitch to the adjacent residential properties during the proposed extended operating hours.

5.0 Environmental Sound Survey

5.1 Measurements

Automated environmental sound measurements were undertaken from 11:00 hours on Friday 11 April 2025 to 22:00 hours on Tuesday 15 April 2025. During this period the L_{Aeq} sound pressure levels were measured continuously over 15 minute periods.

5.2 Weather Conditions

At the start of the survey period the wind conditions were calm (<1m/s) and the sky was scattered cloud. There was no rainfall and road surfaces were dry. The temperature was approximately 12°C.

At the end of the survey period there was a gentle easterly breeze (<5m/s) and the sky was overcast. There was no rainfall and road surfaces were dry. The temperature was approximately 11°C.

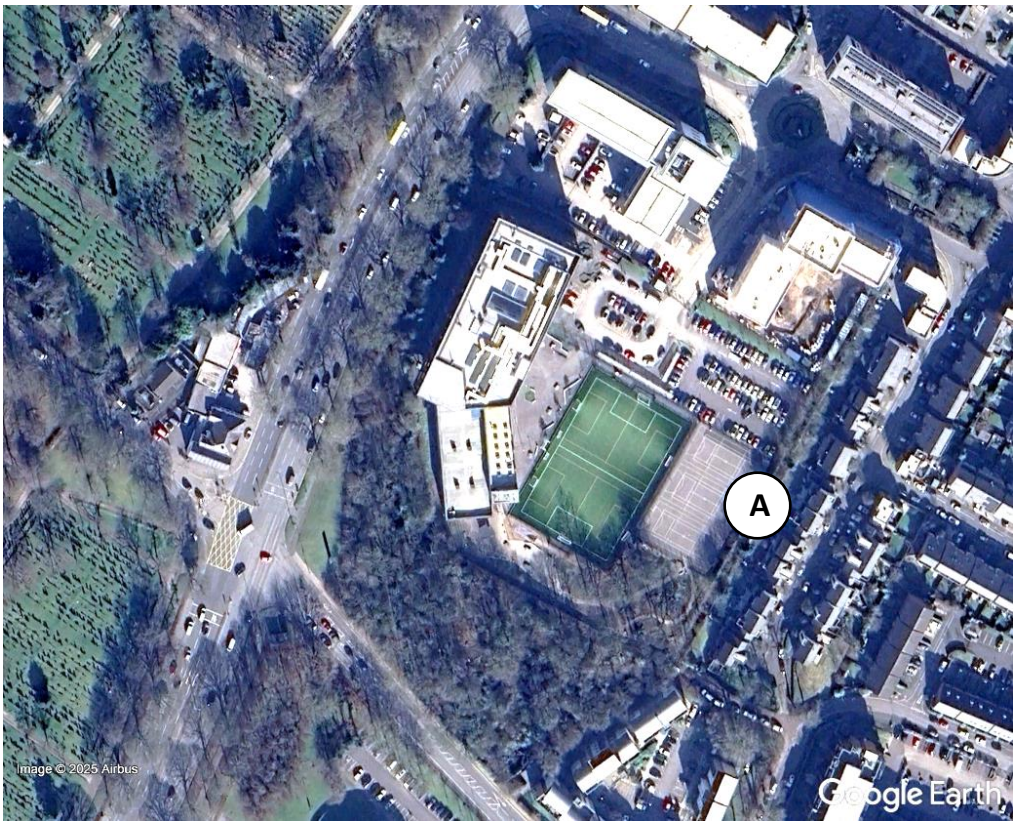
Based on publicly available weather data for the survey period it is understood that weather conditions remained similar for the duration of the survey with no periods of significant rainfall or strong breezes. The weather conditions during the survey period are therefore considered to be suitable for undertaking measurements of sound levels.

5.3 Measurement Position

Environmental sound levels were measured at a single position on-site as described in the table below.

Position	Description
A	Microphone situated towards the south eastern site boundary at 2.5m above ground level in free field conditions.

The measurement position is shown on the site plan below.



Site plan showing measurement position

The measurement position was selected in order to assess typical environmental sound levels at the adjacent residential properties.

5.4 Equipment

The following equipment was used to undertake the environmental sound survey.

Equipment	Manufacturer	Model	Serial No.	Calibration Date
Class 1 Sound Level Meter	Casella	633C	2811231	25/07/2023
Preamplifier	Casella	495	001239	25/07/2023
Microphone	Casella	251	1841	25/07/2023
Class 1 Sound Calibrator	Casella	120/1	3864878	31/10/2024
Environmental Noise Kit	Casella	6847	-	-
Microphone Extension Cable	Casella	C6717/5	-	-
Weather Protection System	Casella	6737	-	-

Field calibration checks were performed on the sound level meter prior to and on completion of the survey and were found to be within acceptable tolerance limits.

5.5 Results

5.5.1 Time History Graph

The results of the environmental sound survey are presented on Time History Graph 1387/THG1 enclosed at the rear of the report. The proposed extended operating hours are indicated with a dashed box.

5.5.2 L_{Aeq} Residual Sound Level

The lowest representative daytime $L_{Aeq,15min}$ residual sound level measured during the proposed extended operational hours of the 4G Pitch (08:30 to 16:00 Saturday and Sunday) is detailed in the table below.

Position	Lowest Representative $L_{Aeq,15min}$ Residual Sound Level (dB)
	Daytime (08:30–16:00)
A	50

5.5.3 Discussion of Sound Climate

At the start and end of the survey period the dominant sound source was noted to be distant road traffic from the surrounding road network.

Whilst we are unable to comment on dominant sound sources or individual sound events during the survey period, based on the surrounding environment it is likely that road traffic remained the dominant sound source (in the absence of student activity).

6.0 Assessment

6.1 Operational Hours

The proposed extended operating hours for the existing 4G Pitch are 08:30 to 16:00 hours Saturday and Sunday (no bank holidays) for use by the community.

The assessment will therefore consider a worst-case scenario of the 4G Pitch in continuous use for the 1 hour assessment period.

6.2 Criteria

The assessment of 4G Pitch sound falls outside the scope of BS 4142:2014 "Methods for rating and assessing industrial and commercial sound".

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."*

The World Health Organisation document on "Guidelines for Community Noise", 1999, states that external sound levels within outdoor living areas, such as gardens, should not exceed $L_{Aeq,16hour}$ 50dB with an upper guideline value of $L_{Aeq,16hour}$ 55dB.

Similarly, BS 8233: 2014 "Guidance on sound insulation and noise reduction for buildings" states that external sound levels within external amenity space, such as gardens, should not exceed $L_{Aeq,T}$ 50dB with an upper guideline value of $L_{Aeq,T}$ 55dB.

In addition, the lowest representative $L_{Aeq,15min}$ residual sound level measured at Position A during the proposed operational hours of the 4G Pitch (08:30 to 16:00 Saturday and Sunday) was $L_{Aeq,15min}$ 50dB.

Based on the above, an external limit for 4G Pitch sound of $L_{Aeq,1hour}$ 50dB is proposed in the rear gardens of the adjacent residential properties.

6.3 Sound Data

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

"A typical free-field noise level of 58dB $L_{Aeq(1hour)}$ at a distance of 10 metres (m) from the sideline halfway marking has been determined as representative for noise from an AGP."

6.4 Existing Barriers

An existing 1.8m high timber fence runs along the south eastern site boundary with the adjacent residential properties. In addition, a 2.4m high timber fence runs along the south eastern edge of the existing MUGA which is situated between the existing 4G Pitch and the south eastern site boundary with the adjacent residential properties.

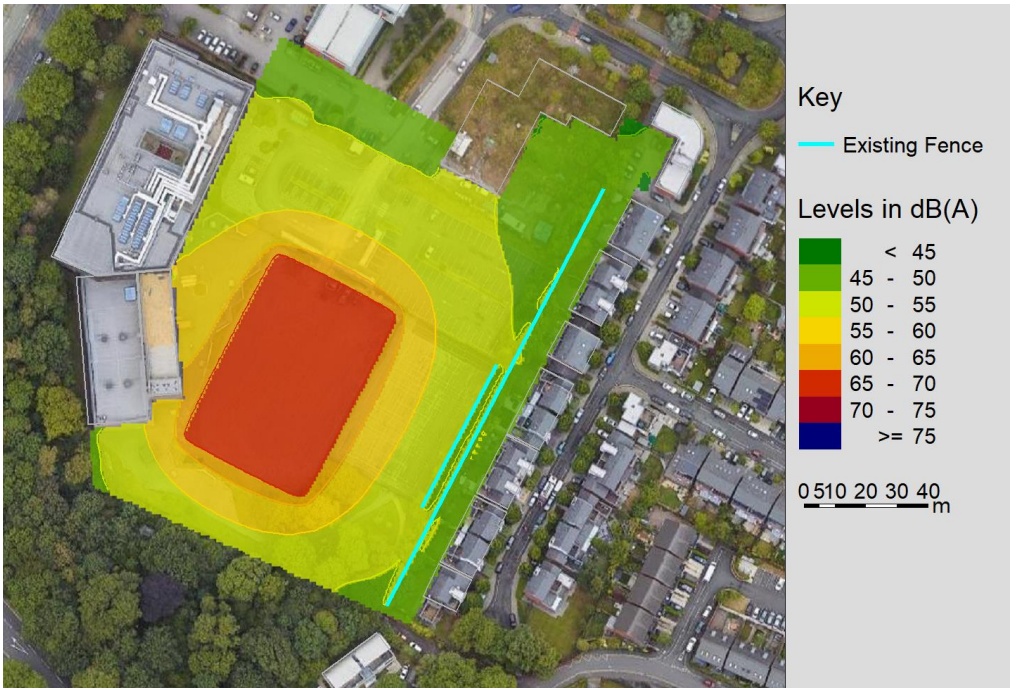
6.5 Methodology

In order to assess typical operational sound levels incident upon the adjacent residential properties a three dimensional model of the site has been constructed using SoundPLAN sound mapping software. The software uses the measured sound data to predict how activity sound radiates across the site returning a colour contour map showing the variations in sound levels. The calculation method used by the software takes into account all standard acoustic corrections such as distance propagation, ground absorption, reflections and screening.

The sound map has been calibrated to achieve 58dB $L_{Aeq,1hour}$ at a distance of 10m from the sideline halfway marking at a height of 1.5m above ground level.

6.6 Sound Map

The sound map below shows the predicted $L_{Aeq,1hour}$ typical operational sound levels at head height (1.5m above ground level).



Sound map showing predicted $L_{Aeq,1hour}$ typical operational sound levels at head height (1.5m above ground level)

As can be seen, the predicted $L_{Aeq,1hour}$ typical operational sound levels are likely to achieve the external limit for 4G Pitch sound of $L_{Aeq,1hour}$ 50dB in the rear gardens of the adjacent residential properties.

7.0 Additional Guidance

In order to minimise typical operational sound from the proposed 4G Pitch to the adjacent residential properties the following guidance is proposed.

- Foul language and anti-social behaviour on the 4G Pitch is unacceptable and should not be permitted by the operator. Signage should state this on the 4G Pitch and within the hire agreement. The operator should reserve the right to dismiss users from the 4G Pitch and ban future use if necessary.

- The 4G Pitch should be regularly attended by the operator when in use to observe the activities and ensure that unacceptable behaviour does not occur.

- Neighbours should be provided with contact details to report noise issues with the operator at the time they occur. The operator should investigate complaints as soon as reasonably possible.

- The perimeter metal mesh fencing should be fixed to support posts with a resilient isolator in order to reduce the 'rattling' sound due to ball impacts. Fixings should be inspected regularly to ensure they remain tight.

8.0 Conclusions

A detailed environmental sound survey has been undertaken in order to establish existing environmental sound levels at the site boundary with the adjacent residential properties.

An assessment of typical operational sound from the existing 4G Pitch to the adjacent residential properties has been undertaken.

The assessment indicates that typical operational sound levels are likely to achieve the proposed external limit for 4G Pitch sound in the rear gardens of the adjacent residential properties.



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LIGHTHOUSE ACOUSTICS

1387/THG1

Sports Pitches, Didsbury High School, Manchester

Time History Graph - Friday 11 April 2025 to Tuesday 15 April 2025

$L_{Amax,15min}$, $L_{Aeq,15min}$ & $L_{A90,15min}$ Noise Levels at Position A

