

NOISE IMPACT ASSESSMENT

BS 4142:2014+A1:2019

**Commercial Noise:
Internal Padel Courts**

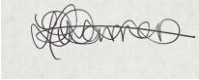


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REPORT DETAILS

Report Title	Noise Assessment: Internal Padel courts
Site Address	Unit corner of Barker Street & Thompson Street, Cheetham Hill Manchester, M3 1DZ
Project No.	NALPRO060126.01
Consultant Contact	jonathan@noiseassessments.co.uk

QUALITY ASSURANCE

Issue No.	Status	Issue Date	Comments	Author	Approved
1	FINAL	25/01/26	-		
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Contents

1. Proposal	1
2. Existing Context.....	1
3. Noise Policy and Guidance.....	2
4. Nearest Sensitive Receptor Locations.....	4
5. Subjective Impressions	4
6. Measurement Locations	4
7. Measurement Procedure.....	5
8. Measurement Equipment.....	5
9. Weather Conditions.....	5
10. Environmental Sound Level	5
11. Noise Source Levels	6
12. Predicted Noise Levels	6
13. Summary	8
14. Uncertainties.....	9
APPENDIX A - Measurement Details.....	10
APPENDIX B - Equipment Details	10
APPENDIX C - Calibration Details	10
APPENDIX D - Meteorology Details.....	10
APPENDIX E - Noise Attenuation.....	11
APPENDIX F – Terminology and Definitions.....	12

1. Proposal

- 1.1 Noise Assessments Ltd has been commissioned to undertake a noise assessment for the proposals, in accordance with advised requirements following discussions with the Local Council in relation to the setup of indoor Padel Courts at Unit corner of Barker Street & Thompson Street, Cheetham Hill, Manchester, M3 1DZ.
- 1.2 Padel tennis is a 1v1 or 2v2 racket sport in which the court is partially enclosed, typically with glazed panels forming both ends of the courts and part of the sides of the courts (nearest to the corners).
- 1.3 An environmental noise survey has been undertaken on Sunday 18th January 2026.
- 1.4 This report describes the assessment undertaken, including calculations, and its findings.

Consultant

- 1.5 Jonathan has experience in environmental, noise and vibration monitoring, acoustic consultancy and impact assessment gained over a period of 22 years in the industry, across the UK, Australia, Brunei, Turkey and the Middle East. He has a Degree in Environmental Science, Postgraduate Diploma in Environmental Monitoring. He has also completed the IOA Certificate in Environmental Noise, from the University of Liverpool.
- 1.6 Jonathan specialises in the measurement and assessment of noise and vibration for a wide range of planning applications, including those requiring EIA, across the industrial, commercial, residential, and mineral extraction sectors. Jonathan is also involved in undertaking various aspects of indoor occupational monitoring and reporting for projects relating to worker health.

2. Existing Context

- 2.1 The site (single storey unit) is set within a commercial area located along a main road for pedestrians and vehicle traffic to other businesses. The site is surrounded by a mixture of commercial, and restaurants.
- 2.2 The nearest sensitive receptor has been identified as the Manchester Prison located 125m east of the proposed site. Manchester Prison is not specifically classified as a noise-sensitive receptor, but it is important to note that noise is a significant consideration in planning and development.
- 2.3 The environmental health department of the local planning authority is likely to raise concerns of noise emissions from the Padel courts in use with the doors open on sensitive residential properties during the daytime.

3. Noise Policy and Guidance

- 3.1 There is no guidance aimed explicitly on the assessment of noise from padel courts. Reference is, therefore, made to guidance on other outdoor sports facilities whose operation can generate noise with similar subjective characteristics.

Sports England

- 3.2 The Artificial Grass Pitch (AGP) Acoustics - Planning Implications - [Sport England 2015] document brings together relevant noise guidelines and UK planning policies for the assessment of noise from Artificial Grass Pitches. It identifies the noise implications of the associated sound sources and recommends mitigation measures to limit adverse impacts upon noise sensitive receptors.

- 3.3 Although not explicitly applicable to padel courts, the associated noise sources can be similar to the types of sport played on AGPs (shouting and impact of balls against court-side barriers).

- 3.4 The following suggested criteria are summarised from the document:

- The noise level outside a residential property during the daytime at about 1 metre from facades of living spaces should not exceed 50 dB LAeq.
- Noise levels in gardens should not exceed 50 dB LAeq,1hour.
- Noise from the new pitch not to exceed the existing noise climate.

- 3.5 In compilation of its guidance, the Sport England report draws on guidance given by the World Health Organisation (WHO). According to the WHO guidance;

During daytime, few people are highly annoyed at LAeq levels below 55 dB(A), and few are moderately annoyed at LAeq levels below 50 dB(A).

WHO Guidelines for Community Noise

- 3.6 The guidance in this document details suitable noise levels within residential and commercial settings from various sources.

- 3.7 For outdoor living areas, it is stated that:

To protect the majority of people from being seriously annoyed during the daytime, the outdoor sound level from steady, continuous noise should not exceed 55dB LAeq on balconies, terraces and in outdoor living areas. To protect the majority of people from being moderately annoyed during the daytime, the outdoor sound level should not exceed 50dB LAeq. Where it is practical and feasible, the lower outdoor sound level should be considered the maximum desirable sound level for new development.

- 3.8 There is no available guidance on suggested limits during the evening period, although it is stated that;

Sound levels during the evening and night should be 5-10 dB lower than during the day. Noise with low-frequency components require lower guideline values.

Changes In Noise Level

- 3.9 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.

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 70	Up to a doubling or halving of loudness	Significant
77 to 75	More than a doubling or halving of loudness	Substantial
76 to 20	Up to a quadrupling or quartering of loudness	Substantial
27 or more	More than a quadrupling or quartering of loudness	Very Substantial

Clay Pigeon Shooting - Guidance on the Control of Noise

- 3.10 Padel racquets are not strung but have hard faces. Impulsive noise from the striking of the padel ball is not dissimilar to that from shooting activities at a distance.
- 3.11 This guidance was produced by the Chartered Institute of Environmental Health (CIEH). Measurement and social survey work carried out by the Building Research Establishment during 1996/1997 provides the basis for applying limits at noise sensitive premises.
- 3.12 Research by the Building Research Establishment (BRE) suggests that there is generally a fixed level above which annoyance can begin to occur and another level above which it is likely to occur at most sites. The BRE criterion is quoted in terms of an SNL: Shooting Noise Level. The SNL is the average of the loudest 25 shots, measured as a maximum noise level (L_{Amax,fast}) at the noise sensitive location, in any 30 minute period. The research concludes:-

"For a given exposure level, community annoyance was found to vary significantly between shoots, but no particular shoot characteristics or socio-demographic variables were seen to be associated with the degree of annoyance. There is some suggestion that different sensitivities exist in different communities and that this affects annoyance, but the causes of differing sensitivities are not clear.

At shooting noise levels below the mid 50's dB(A) there is little evidence of significant annoyance at any site, whereas for levels in the mid to high 60's, significant annoyance is engendered in a majority of sites. For levels in between however, the extent of the

annoyance varies considerably from site to site. Thus, a level of, say, 60dB(A) may be deemed acceptable at one site, but not at another"

4. Nearest Sensitive Receptor Locations

- 4.1 The nearest sensitive receptors (NSRs) have been identified as the Manchester Prison 125m to the east of the site.

5. Subjective Impressions

- 5.1 The noise climate at the rear of the site is dominated by road traffic throughout the day and evening including cars and HGVs / LGVs where tyre / road interaction noise. Secondary noise sources have been identified as bird song and people chatting outside.

6. Measurement Locations

- 6.1 Background noise measurements were undertaken outside of the nearest sensitive receptor. The data collected during this period has been used to characterise the existing acoustic environment around the site.
- 6.2 Measurement and NSR locations are shown in figure 1 below:

Figure 1: Site & Measurement Location



-  Background measurement location M1
-  Site location
-  NSR1 (125m)

7. Measurement Procedure

- 7.1 Noise levels were measured on 18th January 2026. Full measurement times and durations can be found in **Appendix B**.

8. Measurement Equipment

- 8.1 Measurements were undertaken using a calibrated, Pulsar N45 class 1 sound level meter. Full equipment details can be found in **Appendix C**.
- 8.2 During all measurements the microphone was protected with an outdoor windshield.
- 8.3 Measurements at all monitoring locations were ‘free field’ (no vertical reflective surfaces within 3.5 metres of the microphone) and at a height of between 1.2 – 1.5 metres above ground level.
- 8.4 The following set-up parameters were used on the sound level meters:
- Time Weighting: Fast
 - Frequency Weighting: A
 - Averaging-Integrating Period: 15 minutes
 - Data Logging: Repeat (Contiguous)
- 8.5 With the equipment set up in the configuration used during measurement, field calibration checks were performed on site immediately before and after the survey period using a sound calibrator. No significant drift (i.e. no greater than ± 0.5 dB) in the calibration value was observed between the initial and final checks.
- 8.6 Full calibration details can be provided.

9. Weather Conditions

- 9.1 Weather conditions were deemed acceptable for background noise measurement. Full meteorological conditions are detailed in **Appendix E**.

10. Environmental Sound Level

- 10.1 Environmental noise levels were measured on 18th January 2026.

Table 1: Environmental Noise

NSR	Minimum L _{A90}	90 th Percentile L _{AMAX}	Average L _{Aeq} , 5min
1 (125m)	41	76	64

11. Noise Source Levels

11.1 The noise level of multiple Padel games has been used from a similar assessment.

11.2 The noise levels are tabulated below:

Table 2: Specific Noise Levels

Source	Average L _{AeqT}	90 th Percentile L _{AMAX}
Centre Line at 5m	52	81
Baseline at 5m	51	70

12. Predicted Noise Levels

12.1 The assessment has necessarily focussed on the evening period as the time that receptors are likely to be most sensitive to noise as highlighted by the WHO guidelines.

12.2 Propagation and barrier screening effects are calculated on the basis of ISO 9613 Acoustics - Attenuation of sound during propagation outdoors Parts 1 and 2

12.3 Predicted noise levels have been assessed against absolute levels recommended in Sport England, guidance for artificial grass pitches and on changes in noise level.

12.4 The following predicted levels in the Table below are those calculated to the façade of the receptors.

Table 3 Façade noise levels, [dB ref. 20µPa.]

Receptor	Average L _{Aeq,T}	L _{AMAX}
NSR1	19 dB	48 dB

12.5 The time averaged L_{Aeq} levels are below the lower level of 50dB highlighted by the WHO Guidelines for Community Noise to avoid moderate annoyance during the quietest time of the day.

12.6 This demonstrates that no significant change in time averaged noise level will occur.

12.7 Although there is no specific guidance for event noise levels, Table 4 below demonstrates that predicted maximum noise levels are below those that form the existing soundscape.

Table 4 $L_{A\text{Max}}$ External noise levels comparison, [dB ref. 20 μ Pa.]

Receptor	$L_{A\text{MAX}}$	Existing $L_{A\text{MAX}}$
NSR1	48 dB	76 dB

12.8 Predicted noise levels are below the absolute levels recommended in Sport England and WHO guidance and show no significant change in noise levels. On the basis that only one such maximum noise level event likely happens at any one time from the padel courts, the corresponding noise level range at the receptors are likely to be lower than those predicted above.

13. Summary

- 13.1 Noise Assessments Ltd has been commissioned to undertake a noise assessment for the proposals, in accordance with advised requirements following discussions with the Local Council in relation to the setup of indoor Padel Courts at Unit corner of Barker Street & Thompson Street, Cheetham Hill, Manchester, M3 1DZ.
- 13.2 Results of an environmental noise survey have established the existing background noise climate, which has enabled a robust assessment of measured padel tennis noise at the identified nearest residential receptors.
- 13.3 Predicted noise levels are below those referenced in relevant available guidance, with no significant change in absolute terms to the ambient noise levels.

14. Uncertainties

- 14.1 Uncertainty can arise when a calculation method, such as distance correction, is used to determine an overall noise level at an NSR location; however, it is an accepted method when the noise sources are yet to be introduced to the site.
- 14.2 The monitoring equipment is subject to a 1dB error margin, however calibration before and after measurements allows the drift within the margin to be monitored and thus demonstrates that minimal drift occurred throughout the measurements.

Appendices

APPENDIX A - Measurement Details				
Measurement	Start Date	Start Time	End Date	End Time
M1	18/01/26	10:30	19/01/26	06:00

APPENDIX B - Equipment Details				
Equipment	Make	Model	Class	Serial Number
Sound Meter	Pulsar	N45	1	1425
Calibrator	Pulsar	PM1	1	011254A

APPENDIX C - Calibration Details					
Measurement	Calibrator Ref Level (dB)	Level Before (dB)	Deviation Before (dB)	Level After (dB)	Deviation After (dB)
M1	94.0	94.0	0	94.0	0

APPENDIX D - Meteorology Details						
Date	Temp C	Wind Speed m/s*	Wind Direction	Humidity %	Precipitation mm	Cloud Cover (Oktas)
18/01/26	2	1.1	s	84	0.2	5/8

*Windspeeds measured on site using a Skywatch Xplorer 2 Anemo-Thermometer.

APPENDIX E - Noise Attenuation

Manufacturer Noise Levels

Equipment	dBA	r ₁ , m	r ₂ , m	Barrier	Level at NSR ₂
Padel game in progress	52 (L _{Aeq})	125	1.0	-5	19 (NSR1)
	81 (L _{AMAX})	125	1.0	-5	48 (NSR1)

Barrier attenuation assumed as 5 dB and 10 dB for the partial and complete blockage of the line of sight respectively between source and receiver as per 'BS5228-1:2009 – Noise and vibration control on construction and open sites' pg. 130.

Point source distance attenuation

$$L_y = 20 \times \log \frac{r_1}{r_2}$$

Where L_y is the distance attenuation factor and r_{1,2} are the source -> measurement distance and source -> NSR distance in metres respectively

APPENDIX F – Terminology and Definitions

Noise

Sound only becomes noise (often defined as ‘unwanted sound’ or sound that is considered undesirable or disruptive) when it causes or contributes to some harmful or otherwise unwanted effect, like annoyance or sleep disturbance.

Acoustic Environment

Sound from all sound sources as modified by the environment.

Equivalent continuous A-weighted sound pressure level $L_{Aeq,T}$

Value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval T, has the same mean square sound pressure as a sound under consideration whose level varies with time.

A-weighting

The human ear is most sensitive to frequencies in the range 1 kHz to 5 kHz. On each side of this range the sensitivity falls off. A-weighting is used in sound level meters to replicate this sensitivity and respond in the same way as the human ear.

Octave Band

Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.

Maximum Sound Pressure Level $L_{Amax,T}$

Highest value of the A-weighted sound pressure level with a specified time weighting that occurs during a given event or measuring period.

The $L_{A10,T}$ Sound Level

The A-weighted sound pressure that is exceeded for 10% of a given time interval, T. It is often used to evaluate road traffic noise.

The $L_{A90,T}$ Sound Level

The A-weighted sound pressure that is exceeded for 90% of a given time interval, T, measured using time weighting F. It is often referred to as the background noise level and which might in part be an indication of relative quietness at a given location

Free-field Level

The sound pressure level away from reflecting surfaces.

NOTE Measurements made 1.2 m to 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as free-field. To minimize the effect of reflections the measuring position has to be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source).

Façade Level

The sound pressure level 1 m in front of the façade.

NOTE Facade level measurements of LpA are typically 1 dB to 2 dB higher than corresponding free-field measurements because of the reflection from the facade.

Indoor Ambient Noise

Noise in a given situation at a given time, usually composed of noise from many sources, inside and outside the building, but excluding noise from activities of the occupants.

Noise-Sensitive Premises

Any occupied premises outside a site used as a dwelling (including gardens), place of worship, educational establishment, hospital or similar institution, or any other property likely to be adversely affected by an increase in noise level.



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