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Padel Courts, Crown Street Phase 3,
Manchester

Environmental Noise Study

June 2023

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CONTENTS

1.0	SUMMARY.....	2
2.0	INTRODUCTION.....	3
3.0	DESCRIPTION OF SITE	4
4.0	DESCRIPTION OF PROPOSED DEVELOPMENT	5
5.0	RELEVANT GUIDANCE DOCUMENTS.....	6
6.0	NOISE SENSITIVE RECEPTORS.....	14
7.0	ENVIRONMENTAL NOISE SURVEYS	15
8.0	EXTERNAL NOISE LEVELS DUE TO PROPOSED PADEL COURT DEVELOPMENT.....	20
9.0	CONCLUSION	21
Table 1: WHO guideline values for Lowest Observed Adverse Effect Level, daytime		12
Table 2: Impact from a change in sound levels.....		13
Table 3: Summary of measured environmental noise levels around proposed site.....		17
Table 4: Summary of measured padel court noise levels		19
Table 5: Calculated specific noise levels from padel courts.....		19
Table 6: Calculated noise level at closest receptors due to padel courts.....		20
Figure 1: Site location plan		4
Figure 2: Noise sensitive receptors close to proposed development site		14
Figure 3: Noise survey measurement locations – existing ambient noise levels		16

1.0 SUMMARY

Fisher Acoustics Ltd has been commissioned by Renaker Build to conduct a noise study relating to a proposed temporary padel court development at Crown Street Phase 3, Great Jackson Street, Manchester.

An environmental noise survey at the closest residential dwellings around the proposed site has identified the pre-existing environmental noise levels during the day due to road traffic and other normal environmental noise sources.

An assessment of the likely noise level at the nearest dwellings to the site due to the operation of the proposed padel courts has been carried out.

The assessment shows that the level of noise generated by the use of the padel court is expected to be such that residential amenity will be maintained

2.0 INTRODUCTION

Fisher Acoustics Ltd has been commissioned by Renaker Build to conduct an environmental noise assessment relating to a planning application for a proposed temporary development of padel courts at Crown Street Phase 3, Great Jackson Street, Manchester. The proposals provide for four padel courts and a one-storey administrative/storage building.

This report examines the pre-existing environmental noise conditions at the site and identifies the potential noise impacts associated with the proposals.

The steps undertaken in compiling this study are as follows:

- Daytime external noise survey data to determine the typical levels of noise at noise sensitive receptors around the site
- Measurement of noise from existing padel courts
- Calculation of the potential external noise levels at the nearest residential facades to the site due to use of the padel courts
- Comparison of the potential external noise levels due to use of the padel courts with acceptable noise levels at the nearest residential facades

3.0 DESCRIPTION OF SITE

General Site Description

The proposed development site is cleared. The site is bounded to the north by a temporary surface car park, to the west by Great Jackson Street and by Owen Street to the east. Further to the north of the site lies Chester Road which is a major road into Manchester City Centre.

The existing buildings around the site are multi-storey residential buildings with associated commercial units and amenity spaces.

Figure 1 shows the site in the context of the surrounding roads and existing buildings

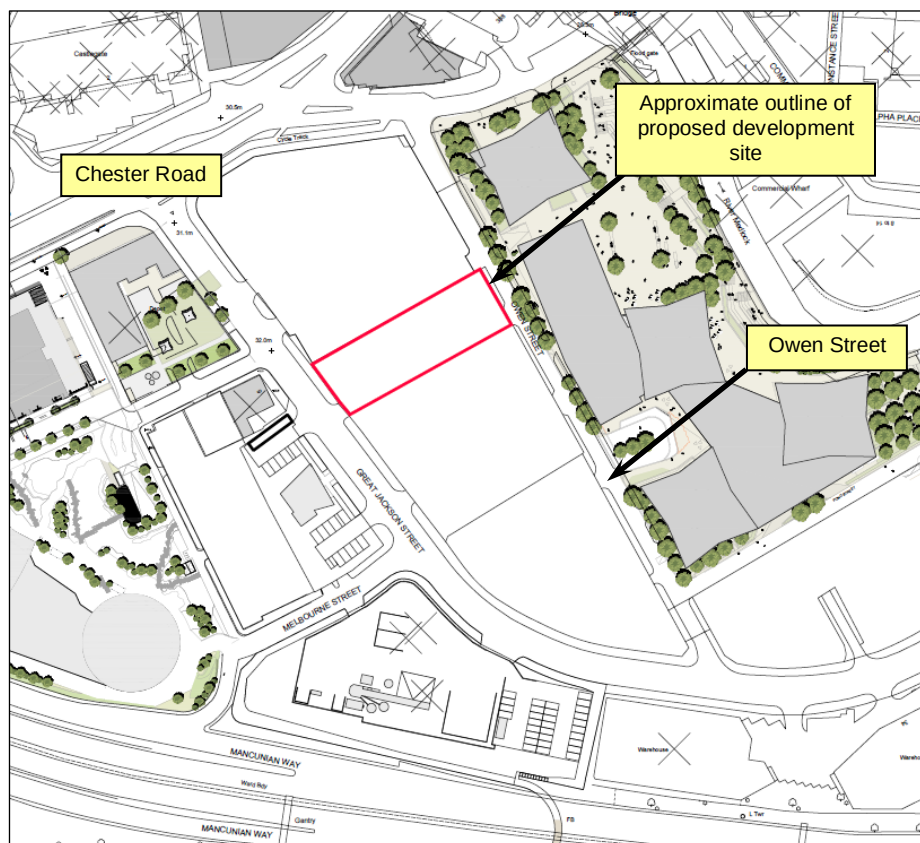


Figure 1: Site location plan

4.0 DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed temporary padel court development site is currently subject to a planning submission for residential development as part of the wider Great Jackson Street Development Framework. There is an aspiration for the site to be used for padel prior to the commencement of construction works on the site for residential development.

The formal description of development for the proposals is as follows:

- Temporary permission for three years for the erection of four padel tennis courts (class E) and a one-storey ancillary administrative/storage building (class Sui Generis), with associated lighting, landscaping and infrastructure.

The proposed operating times of the facility are as follows:

- Mon – Sun 0700 hrs – 2200 hrs

The padel courts are to be arranged side-by-side along the length of the site. The proposed administrative/storage building will be positioned between Owen Street and the padel courts.

5.0 RELEVANT GUIDANCE DOCUMENTS

NATIONAL PLANNING POLICY

The National Planning Policy Framework (NPPF), published in July 2021 by the Ministry of Housing, Communities and Local Government ‘sets out the Government’s planning policies for England and how these should be applied’.

Paragraph 92 of the NPPF states that: ‘Planning policies and decisions should aim to achieve healthy, inclusive and safe places which:

‘promote social interaction, including opportunities for meetings between people who might not otherwise come into contact with each other – for example through mixed-use developments, strong neighbourhood centres, street layouts that allow for easy pedestrian and cycle connections within and between neighbourhoods, and active street frontages;’

and:

‘enable and support healthy lifestyles, especially where this would address identified local health and well-being needs – for example through the provision of safe and accessible green infrastructure, sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling.’

Paragraph 93 of the NPPF states that: ‘To provide the social, recreational and cultural facilities and services the community needs, planning policies and decisions should:

‘plan positively for the provision and use of shared spaces, community facilities (such as local shops, meeting places, sports venues, open space, cultural buildings, public houses and places of worship) and other local services to enhance the sustainability of communities and residential environments;

and:

‘ensure an integrated approach to considering the location of housing, economic uses and community facilities and services.’

Paragraph 174 of the NPPF states that ‘Planning policies and decisions should contribute to enhance the natural and local environment by:

‘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’.

Paragraph 185 of the NPPF states:

“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 impact 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) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.”

Paragraph 185a of the NPPF cross references the ‘Explanatory Note to the Noise Policy Statement for England’. The ‘Noise Policy Statement for England’ (NPSE) was published by the Department for Environment Food and Rural Affairs in March 2010.

The NPSE does not give suggested external noise criteria for commercial developments. In the absence of specific criteria, reference shall be made in this document to established guidance and principles, as established in British Standards and the local Planning policy.

The NPSE applies to all types of noise apart from noise in the workplace (occupational noise). For the purposes of the NPSE, “noise” includes:

- “environmental noise” which includes noise from transportation sources;
- “neighbour noise” which includes noise from inside and outside people’s homes; and
- “neighbourhood noise” which includes noise arising from within the community such as industrial and entertainment premises, trade and business premises, construction sites and noise in the street

The NPPF and the NPSE do not specify noise criteria above which adverse effects would be expected. However, discussion is included within the NPSE relating to 'significant adverse' and 'adverse' effects which seek to guide the Planning process, as follows.

There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation. They are:

- NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

- LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

The NPSE then introduces the concept of a 'significant observed adverse effect level':

- SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur.

The NPSE states that 'it is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available'.

To assist in the formulation of appropriate noise criteria for individual situations, the NPSE sets out the three aims, as follows:

- 1) The first aim of the Noise Policy Statement for England:

Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

The first aim of the NPSE states that significant adverse effects on health and quality of life should be avoided while also taking into account the Government's guiding principles of sustainable development as defined in the NPSE.

- 2) The second aim of the Noise Policy Statement for England:

Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

The second aim of the NPSE refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the Government's guiding principles of sustainable development. This does not mean that such adverse effects cannot occur.

- 3) The third aim of the Noise Policy Statement for England

Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

This aim seeks, where possible, positively to improve health and quality of life through the pro-active management of noise while also taking into account the Government's guiding principles of sustainable development, recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society. The protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim.

In the absence of specific criteria within the NPSE, reference shall be made in this document to established guidance and principles, as established in British Standards and the local planning policy.

National Planning Practice Guidance – Noise

‘Planning Practice Guidance – Noise’ is a web-based resource provided by the Ministry of Housing, Communities and Local Government (last revision date 22 July 2019) which gives guidance on Planning considerations in relation to noise.

The document identifies the subjective grading of noise and the recommended actions and different effect levels as defined in the NPSE. Again, as ‘Planning Practice Guidance – Noise’ does not refer to objective criteria, reference shall be made in this document to established guidance and principles.

LOCAL PLANNING POLICY

Manchester City Council’s Core Strategy was adopted on 11th July 2012 and is the key Development Plan Document in the Local Development Framework (LDF).

Section 13.6 ‘Development Management’ of the Core Strategy states that ‘all new developments should follow the ‘Development Principles’ and accord with the design guidance set out in the Supplementary Planning Documents.

Policy DM 1, ‘Development Management’ of the Core Strategy states that:

- All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document: Effects on amenity, including noise, vibration.... This could also include proposals which would be sensitive to existing environmental conditions, such as noise.

‘Planning & Noise, Technical Guidance’, dated June 2022 has been issued by the Environmental Protection, Environmental Health and The Neighbourhoods Service sections of Manchester City Council. The document provides guidance to applicants and consultants concerning the assessment and prediction of environmental noise associated with a particular development. However, ‘Planning & Noise, Technical Guidance’ does not provide specific environmental noise guidance on sports facilities such as padel courts, but advises in Section 3.7.1.6 of the document (‘Other potentially noisy activities’) that:

'The following types of development proposals or applications may have additional specific guidance published to review noise impacts or may otherwise be a potential source of noise.

It is recommended that pre-application discussions are held with the Environmental Protection Team at www.manchester.gov.uk if any of the following application types are to be submitted:

- Motor car/bike tracks/speedways
- BMX, skateboard, scooter, mountain bike tracks
- MUGAs
- Sport stadia
- B2 Use Class developments
- Wind Turbines
- Gymnasias'

OTHER GUIDANCE DOCUMENTS

BS8233: 2014

BS8233: 2014 'Guidance on sound insulation and noise reduction for buildings' provides appropriate criteria for acceptable levels of noise ingress within dwellings. This British Standard provides guidance for the control of noise in and around buildings. It is applicable to the design of new or refurbished buildings, but also provides guidance in situations where a new noise-making development is to be introduced near an existing noise-sensitive development, such as housing.

World Health Organisation 'Guidelines for Community Noise (1999)

The internal noise criteria for dwellings within BS823: 2014 are taken from the World Health Organisation 'Guidelines for Community Noise (1999)'. In particular, the guideline noise values are set at the level of the lowest adverse health effect (the 'LOAEL' defined in the NPSE). The WHO document does not identify the noise level above which significant adverse effects could occur (the SOAEL).

Table 1 identifies the LOAEL guideline daytime values for noise affecting dwellings.

Location	Critical health effect(s)	Noise limit [dB]
Outdoor living area	Serious annoyance, daytime and evening	55 dB LAeq, 16h
	Moderate annoyance, daytime and evening	50 dB LAeq, 16h
Dwelling, indoors	Speech intelligibility and moderate annoyance, daytime and evening	35 dB LAeq, 16h

Table 1: WHO guideline values for Lowest Observed Adverse Effect Level, daytime

Sport England Design Guidance Note – Artificial Grass Pitch (AGP) Acoustics – Planning Implications, 2015

The above document proposes a noise criterion and assessment methods for AGPs. The noise criterion is based on the principles of the NPPF and NPSE and references the guidance values given in the World Health Organisation ‘Guidelines for Community Noise (1999)’.

For the typical use of AGPs (football, hockey and rugby), the most significant noise levels were found to be generally derived from the voices of players, with the exception of hockey where impact noises of balls hitting perimeter strike boards and goal back boards were more noticeable.

Section 3 ‘Relevant Noise Guidance’ of the document states that:

- *‘Based on a 15 decibel sound reduction of a partially open window, the noise level outside a residential property during the daytime about 1 metre from façades of living spaces should not exceed 50 dB LAeq. The WHO document also provides guidance for outdoor living areas. It states that to avoid ‘moderate annoyance’ during the daytime and evening the noise level should not exceed 50 dB LAeq(T).’*

Although padel is not mentioned in the guidance, the document is considered to be appropriate given the noise sources of players’ voices and ball impacts.

Guidelines for Environmental Noise Impact Assessment (2014)

The Guidelines for Environmental Noise Impact Assessment, published in 2014 by the Institute of Environmental Management & Assessment discusses the significance of a change in noise level due to a new noise source. In broad terms, the impact of a change in sound levels due to a new noise source in an area can be classified as identified in Table 2.

Sound level change	Impact Classification
≥ 0 dB and < 3 dB	Negligible
≥ 3 dB and < 5 dB	Minor
≥ 5 dB and < 10 dB	Moderate
≥ 10 dB	Major

Table 2: Impact from a change in sound levels

6.0 NOISE SENSITIVE RECEPTORS

Figure 2 identifies the noise sensitive receptors site in the vicinity of the proposed development site. It should be noted that Bridgewater House is a planning-approved residential development that has not commenced construction at the time of writing. However, it may be occupied prior to the cessation of the proposed padel court use. The buildings that are not identified as 'noise sensitive receptors' in Figure 2 would either not be occupied by the time that the padel courts cease operation or are at a much greater distance from the proposed padel courts. Thus, if satisfactory conditions are expected at the assessed receptors, then satisfactory conditions can also be expected at any other buildings in the vicinity of the proposed padel courts.

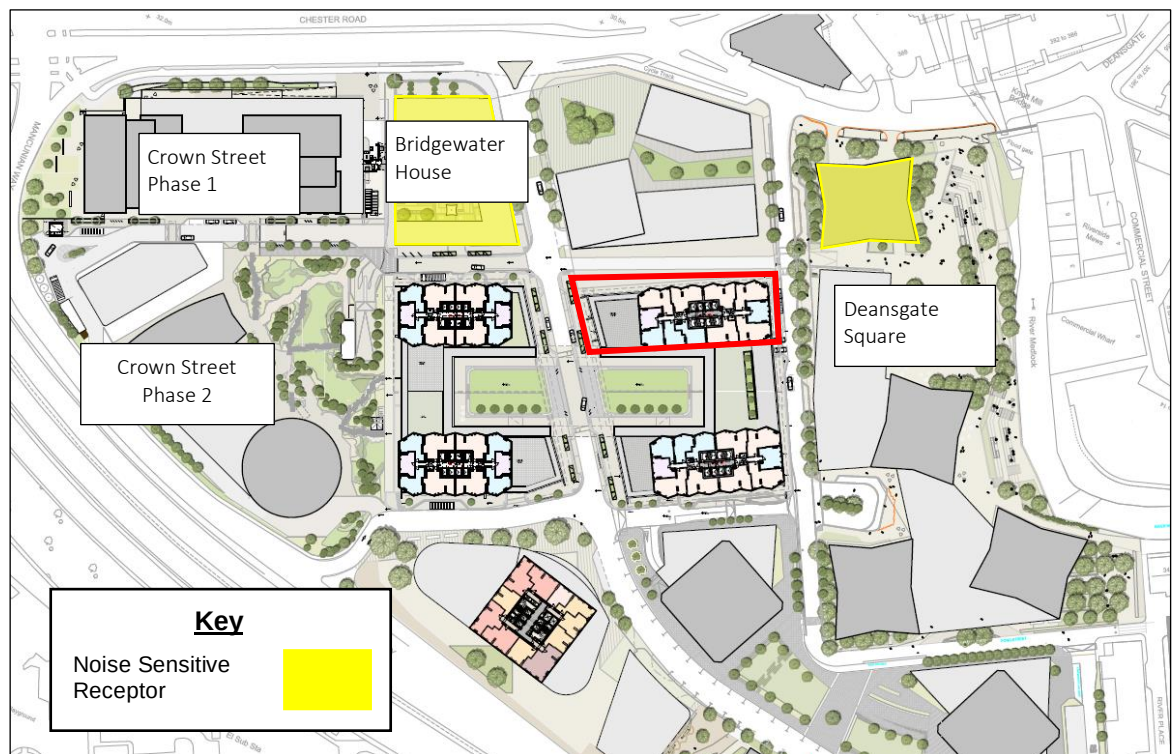


Figure 2: Noise sensitive receptors close to proposed development site

The closest padel courts are approximately 35 metres from the closest residential receptors at both Bridgewater House and Deansgate Square.

7.0 ENVIRONMENTAL NOISE SURVEYS

Proposed development site

In order to determine the prevailing ambient noise levels at and around the proposed development site, surveys of the existing noise environment have been carried out from 2:30pm Friday 16 September 2022 to 3pm on Wednesday 21 September 2022. The noise survey was conducted in accordance with BS7445-1:2003 'Description and measurement of environmental noise – Part 1: Guide to quantities and procedures'.

The measurement locations used for the surveys are identified on Figure 3 and are representative of the positions of the nearest existing residential properties. The measured noise levels can therefore be used to determine acceptable levels of noise at the existing sensitive properties around the site due to noise from the development. (The buildings that are not shown as grey blocks in Figure 3 will not be constructed and occupied until the proposed padel court use has ceased).

The measurement locations were as follows:

- Location 1: 9m from the kerb of Chester Road adjacent to the junction of Great Jackson Street and Chester Road, at a microphone height of 1.5 metres above site ground level
- Location 2: 3m from the west tower of Deansgate Square residences, at a microphone height of 1.5 metres above site ground level
- Location 5: 5 metres from the kerb of Great Jackson Street at a microphone height of 1.5 metres above site ground level
- Location 6: On the roof of the Crown Street marketing suite on Great Jackson Street at a microphone height of 9 metres above site ground level

Full survey details are given in Appendix A. Appendix A also contains a summary of the results obtained from the surveys.

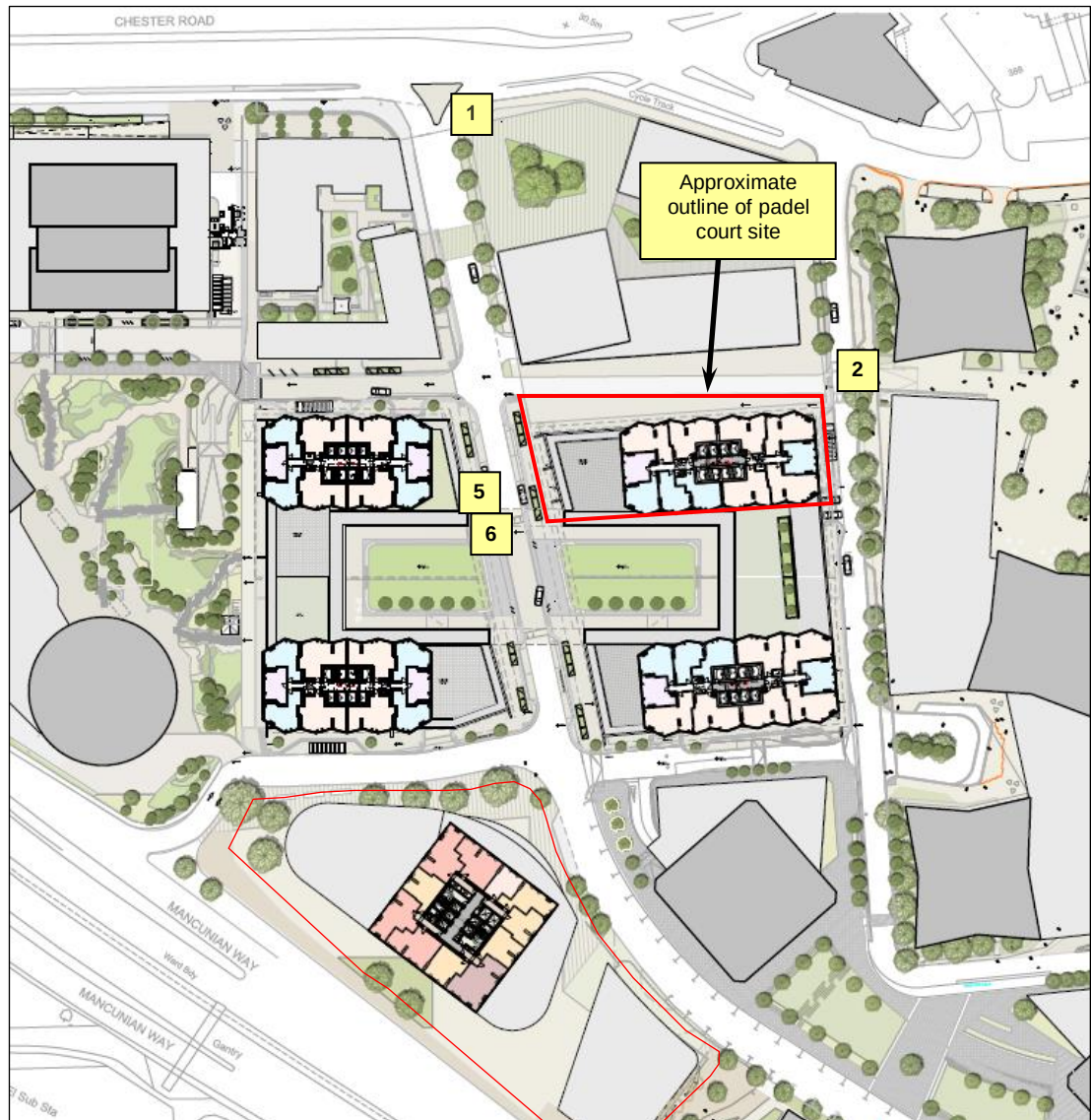


Figure 3: Noise survey measurement locations – existing ambient noise levels

The long-term noise environment at and around the Site is principally determined by road traffic on Mancunian Way (A57(M)) and Chester Road, with a contribution to noise levels from road traffic on Great Jackson Street.

The noise levels measured during the noise surveys are summarised in Table 3.

Measurement Location	Measured Noise Level		
	Daytime (defined as 7 am to 11 pm)		
	dB, LAeq	dB, LAmax	dB, LA90
1 – Friday 16 Sep 2022	71	79 to 85	60 to 67
2 – Friday 16 Sep 2022	61	68 to 83	56 to 59
5 – Friday 16 Sep 2022	62	70 to 74	58 to 60
6 – Friday 16 Sep 2022	62	66 to 84	58 to 62
6 – Saturday 17 Sep 2022	63	64 to 90	57 to 63
6 -Sunday 18 Sep 2022	62	61 to 94	54 to 61
6 -Monday 19 Sep 2022	61	63 to 91	55 to 60
6 -Tuesday 20 Sep 2022	65	65 to 94	57 to 66
6 -Wednesday 21 Sep 2022	66	68 to 88	61 to 69

Table 3: Summary of measured environmental noise levels around proposed site

The statistical noise levels ('LAmax' and 'LA90') given in Table 3 show the range of noise levels measured over the sample periods. The quoted average (LAeq) noise levels are the average noise levels measured over the full measurement periods in question at each measurement position.

Noise survey at existing padel courts

In order to determine the potential noise levels due to the use of the proposed padel courts, noise surveys at an existing commercial padel court operation have been carried out between 11:05 & 11:45 on Tuesday 11th April 2023 and between 10:12 & 10:54 on Saturday 13 May 2023. There are four side-by-side padel courts at the existing operation. The layout and number of the existing padel courts is the same as that of the proposed padel courts.

The measurement locations were as follows:

- Location 1: 15 m from the glazed end of the padel courts, at a microphone height of 1.5 metres above ground level
- Location 2: 8.5 m from the side perimeter of the closest padel court to the measurement location, in line with the net, at a microphone height of 1.5 metres above ground level

During the noise survey conducted in April 2023, a female doubles game was being played on the closest court to the measurement location. The remaining three courts were in use by both male and female players.

Over the duration of the noise survey conducted in May 2023, two separate male doubles game were played on the closest court to the measurement location. The remaining three courts were in use by both male and female players.

Distant road traffic contributed to the noise climate at the measurement location. The specific noise level due solely to the use of the padel courts has therefore been determined from the measurements.

The principal noise source from the padel courts was the impact of the padel ball on the bats. In addition, during the first male doubles game, the raised voices of the players also contributed significantly to the measured noise levels.

There were occasional impacts of the padel ball on the glazed perimeter screens around the courts, but these impacts were not considered to be a significant contributor to the measured noise levels.

The noise levels measured during the padel noise surveys are summarised in Table 4.

Measurement Location/ Source	Measured Noise Level		
	dB, LAeq	dB, LAmax	dB, LA90
1 – Male & female players 11 Apr 23	56	57 to 66	52 to 55
2 – Female doubles on closest court 11 Apr 23	57	64 to 74	53 to 55
2- Male doubles on closest court, includes shouting 13 May 23	60	71 to 79	47 to 52
2- Male doubles on closest court, no shouting 13 May 23	55	63 to 76	45 to 47

Table 4: Summary of measured padel court noise levels

The quoted average (LAeq) noise levels are the average noise levels measured over the full measurement period in question at each measurement position.

The calculated specific noise levels from the padel courts alone are identified in Table 5.

Location/ Source	Measured Noise Level
	dB, LAeq
15 m from glazed ends of courts	51
8.5 m from open sides of closest court Female doubles (young adults) on closest court	55
8.5 m from open sides of closest court Male doubles (young adults) on closest court, with shouting	59
8.5 m from open sides of closest court Male doubles (older adults) on closest court, without shouting	52

Table 5: Calculated specific noise levels from padel courts

8.0 EXTERNAL NOISE LEVELS DUE TO PROPOSED PADEL COURT DEVELOPMENT

Calculations have been carried out to determine the potential noise level at the closest residential receptors due to the use of the padel courts. The calculations assume no acoustic screening benefit from the proposed administrative/storage building.

Table 6 identifies the calculated noise level at the receptors identified in Figure 2 above (Deansgate Square and Bridgewater House) due to the proposed padel courts.

The calculated noise level assumes that all four courts are in use simultaneously and each court generates the same 'worst-case' noise level as that measured at the existing padel courts. In particular, the worst-case noise levels were generated during a male doubles game that involved shouting by the players.

Source	Calculated Noise Level at receptor dB, LAeq
Four padel courts, hosting male doubles matches, including shouting	50

Table 6: Calculated noise level at closest receptors due to padel courts

The calculated worst-case noise level compiles with the guideline noise limit of 50dB LAeq identified in the Sport England Design Guidance Note for artificial grass pitches.

Given the measured pre-existing noise level of 61dB LAeq at the closest residential receptor, the introduction of a new noise source that generated a noise level of 50 dB LAeq would lead to a calculated total noise level of 61.3 dB LAeq. Therefore the change in external noise level at the receptors due to the proposed padel courts would be only 0.3 dB. This increase in noise would be classed as negligible.

9.0 CONCLUSION

The potential noise level at the closest noise sensitive receptors due to the proposed padel courts complies with guidance published by Sports England for activities of a similar nature.

In addition, the calculated noise level due to the padel courts is more than 10dB lower than the pre-existing noise levels. The expected contribution of noise at the closest noise sensitive receptors from the proposed padel courts is such that there would be a negligible change in noise level.

It is therefore considered that residential amenity would be maintained given the expected levels of noise propagation from the proposed padel courts.

APPENDIX A: NOISE SURVEY DETAILS AND SUMMARY RESULTS

LOCATION

Chester Road and Great Jackson Street, Manchester

DATES AND TIMES

3:35 pm Friday 16 September 2022 to 3pm on Wednesday 21 September 2022

WEATHER DURING SURVEYS

Friday 16 September 2022 (Day time)	1/8 cloud, 5m/s breeze (N), no rain, 15°C
Saturday 17 September 2022 (Day time)	1/8 cloud, 12m/s breeze (NW), no rain, 15°C
Sunday 18 September 2022 (Day time)	7/8 cloud, 12m/s breeze (NNE), light rain, 16°C
Monday 19 September 2022 (Day time)	2/8, 5m/s breeze (NNE), no rain, 16°C
Tuesday 20 September 2022 (Day time)	2/8 cloud, 2m/s wind (N), no rain 17°C
Tuesday 20 September 2022 (Day time)	1/8 cloud, 2m/s wind (N), no rain 13°C
Wednesday 21 September 2022 (Day time)	1/8 cloud, 4m/s wind (S), no rain 17°C

PERSONNEL PRESENT DURING SURVEY

Matt Fisher – Fisher Acoustics

INSTRUMENTATION

Norsonic Type 118 IEC 60651 Type 1 Integrating-Averaging Sound Level Meter (serial no. 31498)
Norsonic Type 140 IEC 60651 Type 1 Integrating-Averaging Sound Level Meters (serial no. 1406387)
Norsonic Type 140 IEC 60651 Type 1 Integrating-Averaging Sound Level Meters (serial no. 1403193)
Norsonic Type 1251 IEC 60942-1997 Class 1 Sound Calibrators (x2) (serial nos. 31971, 27878)

MEASUREMENT METHODOLOGY

Before and after the noise survey the sound level meters were check calibrated to an accuracy of ± 0.3 dB using the Norsonic Type 1251 Calibrators - no drift in sensitivity was detected. The measurement microphones were installed at the locations identified in this report. All survey measurements were in 'free field' conditions.

Figure A1 and Tables A1 & A2 identify the free-field noise levels measured at various locations around the site. Measurement locations are shown in Figure 2 and described below.

- Location 1: 9m from the kerb of Chester Road adjacent to the junction of Great Jackson Street and Chester Road, at a microphone height of 1.5 metres above site ground level
- Location 2: 3m from the West tower of Deansgate Square residences, at a microphone height of 1.5 metres above site ground level
- Location 5: 5 metres from the kerb of Great Jackson Street at a microphone height of 1.5 metres above site ground level
- Location 6: On the roof of the Crown Street marketing suite on Great Jackson Street at a microphone height of 9 metres above site ground level

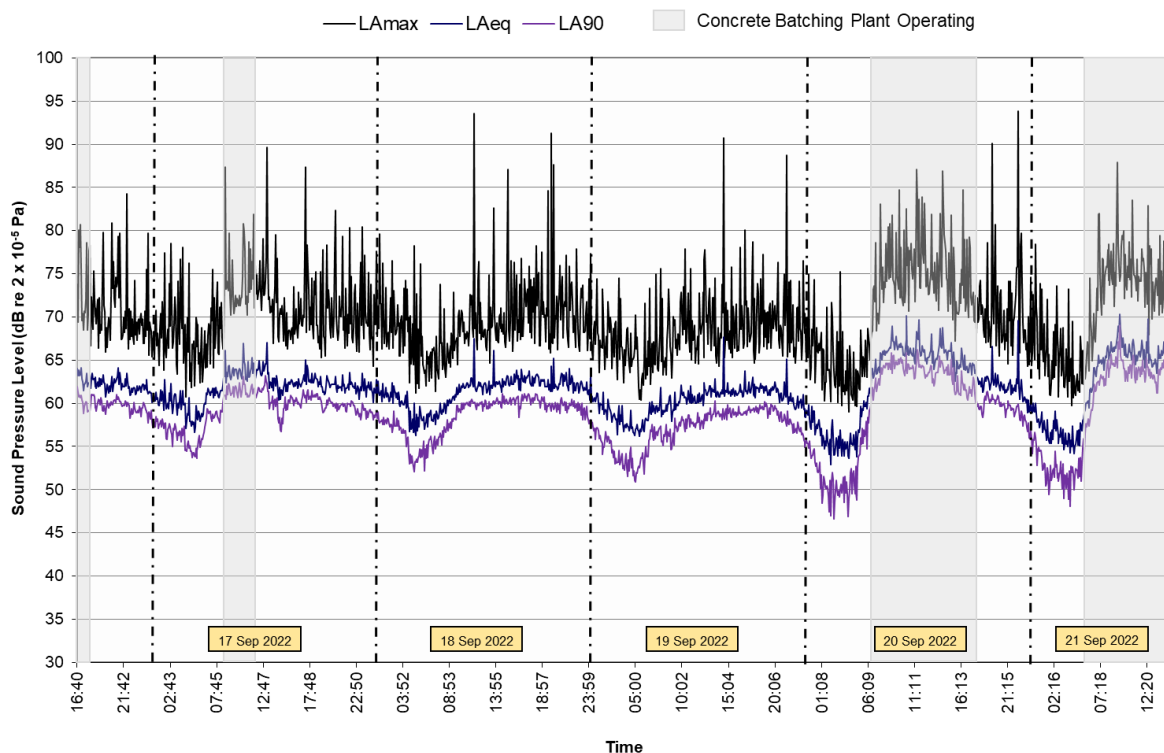


Figure A1: Position 6 noise measurements, Friday 16 September 2022 to Wednesday 21 September 2022 - maximum (LAmx), average (LAeq) and background (LA90) noise levels

Measurement Position	Start Time	Measured Noise Levels, dB			Noise sources
		L _{Aeq}	L _{Amax}	L _{A90}	
1	15:37	70.6	85.4	63.6	Road Traffic (Chester Road)
1	15:42	70.7	81.6	61.6	"
1	15:47	70.8	79.1	60.1	"
1	16:25	71.6	80.2	66.1	"
1	16:30	71.3	78.6	64.4	"
1	16:35	71.0	82.5	63.2	"
1	17:09	71.4	80.7	64.2	"
1	17:14	71.2	81.3	64.2	"
1	17:19	71.3	79.0	65.8	"
1	17:39	72.5	80.6	67.2	"
2	15:25	62.7	76.1	57.7	Road Traffic (Chester Road), building service plant
2	15:30	59.7	71.7	57.4	"
2	16:13	59.8	71.2	56.8	"
2	16:18	63.6	83.1	57.9	"
2	16:58	61.0	74.2	57.9	"
2	17:04	58.5	68.0	56.4	"
2	17:33	59.2	69.7	57.2	"
5	15:34	60.6	74.0	58.4	Distant road traffic (Chester Road and Mancunian Way), some noise from construction sites, minor traffic flows on Great Jackson St
5	15:37	62.3	70.4	59.6	"

Table A1: Summary Statistical Noise Levels, Daytime, 16th September 2022

Measurement Position	Start Time	Noise Level, dB LAeq	Sound Pressure Level (dB) @ Octave Band Centre Frequency (Hz)						
			63	125	250	500	1k	2k	4k
1	15:37	70.6	73.0	67.3	67.4	65.1	68.6	60.9	51.4
1	15:42	70.7	70.8	67.1	65.9	65.4	68.8	61.0	50.1
1	15:47	70.8	72.6	66.2	65.7	65.3	69.2	60.6	49.2
1	16:25	71.6	75.0	70.3	67.7	66.4	69.6	61.8	52.4
1	16:30	71.3	73.7	67.5	66.3	65.9	69.5	61.6	51.0
1	16:35	71.0	71.4	68.3	66.5	65.2	69.1	61.4	52.0
1	17:09	71.4	71.6	66.5	66.0	66.1	69.7	61.3	50.8
1	17:14	71.2	70.0	66.8	66.1	65.8	69.5	61.3	50.6
1	17:19	71.3	70.1	66.2	65.8	65.8	69.6	61.2	50.5
1	17:39	72.5	72.2	67.5	67.3	67.2	70.8	62.3	51.1
2	15:25	62.7	65.5	63.2	58.7	58.4	58.2	56.6	48.6
2	15:30	59.7	62.7	61.8	59.5	56.3	56.5	50.0	40.4
2	16:13	59.8	64.9	59.6	57.6	56.2	56.8	50.8	42.8
2	16:18	63.6	70.0	62.9	59.5	57.9	61.4	54.4	47.4
2	16:58	61.0	66.7	60.0	58.8	57.3	57.5	52.5	46.8
2	17:04	58.5	68.2	59.9	57.5	54.8	55.2	48.8	42.4
2	17:33	59.2	63.7	59.0	58.1	56.5	55.9	49.1	41.4
5	15:34	60.6	66.4	58.5	56.5	56.9	57.5	52.6	44.8
5	15:37	62.3	68.0	61.2	59.0	58.0	59.5	53.3	47.0

Table A2: Measured Octave Band L_{eq} Noise Levels, Daytime, 16th September 2022

**APPENDIX B: NOISE SURVEY DETAILS AND SUMMARY RESULTS –
EXISTING PADEL COURTS**

DATES AND TIMES

11:05 am to 11:45 am Tuesday 11th April 2023

10:12 am to 10:54 am Saturday 13th May 2023

WEATHER DURING SURVEYS

Tuesday 11th April 2023 (Day time)

8/8 cloud, 5.5m/s breeze (SE), no rain, 9°C

Saturday 13th May 2023 (Day time)

2/8 cloud, 2m/s light breeze (SE), no rain, 18°C

PERSONNEL PRESENT DURING SURVEY

Matt Fisher – Fisher Acoustics

INSTRUMENTATION

Norsonic Type 140 IEC 60651 Type 1 Integrating-Averaging Sound Level Meters (serial no. 1403193)

Norsonic Type 1251 IEC 60942-1997 Class 1 Sound Calibrators (x2) (serial nos. 31971)

MEASUREMENT METHODOLOGY

Before and after the noise survey the sound level meters were checked calibrated to an accuracy of ± 0.3 dB using the Norsonic Type 1251 Calibrators - no drift in sensitivity was detected. The measurement microphones were installed at the locations identified in this report. All survey measurements were in 'free field' conditions.

Tables B1 to B4 identify the free-field noise levels measured at various locations on the Site.

Measurement locations are described below.

- Location 1: 15 m from the glazed end of the padel courts, at a microphone height of 1.5 metres above ground level
- Location 2: 8.5 m from the padel court perimeter, in line with the net, at a microphone height of 1.5 metres above ground level

Measurement Position	Start Time	Measured Noise Levels, dB				Noise sources
		L _{Aeq}	L _{Amax}	L _{A1}	L _{A90}	
1	11:07	56.2	63.0	60.0	54.5	Distant road traffic, voices on court, ball on padel bat, occasional perimeter hits
1	11:08	56.6	61.7	59.2	54.9	"
1	11:10	55.1	59.1	57.9	52.8	"
1	11:11	54.7	60.4	58.4	52.7	"
1	11:12	57.2	63.9	62.9	54.7	"
1	11:13	53.7	57.4	57.0	51.6	"
1	11:14	55.3	61.4	59.3	53.0	"
1	11:15	57.2	66.3	63.0	54.7	"
1	11:16	55.4	59.9	59.1	53.7	"
1	11:17	54.0	61.4	57.2	52.7	"
1	11:18	54.5	57.5	56.7	53.3	"
2	11:26	56.2	69.4	63.4	52.7	Distant road traffic, voices on court, ball on padel bat, occasional perimeter hits (female payers on closest court)
2	11:27	56.6	65.7	63.9	53.0	"
2	11:28	57.3	69.2	66.8	53.3	"
2	11:29	57.5	64.8	62.7	54.8	"
2	11:30	57.3	70.4	66.1	53.7	"
2	11:32	58.0	70.5	64.0	55.2	"
2	11:33	58.4	70.1	66.0	54.9	"
2	11:34	56.7	66.6	62.4	54.5	"
2	11:35	58.3	67.7	66.2	53.9	"
2	11:36	58.1	74.4	65.4	53.3	"
2	11:37	56.1	66.1	63.3	53.1	"
2	11:38	57.3	67.2	63.6	54.2	"
2	11:39	58.4	72.5	68.3	54.2	"
2	11:40	57.5	68.6	64.4	53.8	"
2	11:41	56.9	68.6	64.4	54.5	"
2	11:42	58.1	71.9	68.6	53.2	"
2	11:43	55.0	64.4	60.5	52.8	"

Table B1: Summary Statistical Noise Levels, Tuesday 11th April 2023

Measurement Position	Start Time	Noise Level, dB LAeq	Sound Pressure Level (dB) @ Octave Band Centre Frequency (Hz)						
			63	125	250	500	1k	2k	4k
1	11:07	56.2	62.7	59.2	50.7	51.5	54.4	44.5	34.4
1	11:08	56.6	64.5	56.4	49.2	51.6	55.1	44.3	30.6
1	11:10	55.1	63.6	55.7	46.5	50.7	53.5	42.8	28.6
1	11:11	54.7	62.7	54.8	46.2	50.0	53.0	43.0	37.1
1	11:12	57.2	60.9	54.7	49.2	51.7	55.2	44.4	46.9
1	11:13	53.7	60.6	53.8	46.3	49.9	51.6	41.6	39.2
1	11:14	55.3	62.0	55.0	46.2	50.1	53.1	42.8	45.3
1	11:15	57.2	65.4	60.1	50.4	52.8	55.3	44.6	37.0
1	11:16	55.4	64.0	58.1	47.7	50.8	53.6	43.3	35.1
1	11:17	54.0	63.8	58.3	46.5	48.9	52.3	41.8	35.0
1	11:18	54.5	64.7	58.6	48.0	50.1	52.6	41.8	36.0
2	11:26	56.2	68.8	55.0	48.9	51.9	54.4	43.9	35.8
2	11:27	56.6	61.7	54.4	49.6	52.0	54.6	46.8	39.2
2	11:28	57.3	58.3	51.8	50.7	52.5	55.3	47.6	41.0
2	11:29	57.5	59.7	52.8	48.6	52.2	56.1	47.0	37.7
2	11:30	57.3	65.1	54.6	50.9	52.7	55.7	45.7	38.1
2	11:32	58.0	69.0	55.8	50.6	53.1	56.4	46.7	37.6
2	11:33	58.4	68.0	56.5	50.8	53.1	55.3	47.5	50.0
2	11:34	56.7	64.2	55.6	50.3	52.4	54.8	45.7	37.4
2	11:35	58.3	60.7	55.6	51.0	53.5	56.7	47.1	38.6
2	11:36	58.1	61.1	54.9	52.2	53.5	56.2	48.3	39.0
2	11:37	56.1	59.7	51.0	48.8	51.7	54.4	45.5	36.2
2	11:38	57.3	69.0	55.2	49.3	52.8	55.3	47.0	38.3
2	11:39	58.4	67.3	54.7	50.4	52.8	56.5	50.0	40.1
2	11:40	57.5	68.1	54.6	49.5	53.3	55.3	47.6	39.8
2	11:41	56.9	68.8	55.0	49.4	52.2	55.0	46.0	38.7
2	11:42	58.1	68.2	54.2	50.3	53.1	56.2	47.8	42.2
2	11:43	55.0	62.7	53.1	48.7	50.2	53.3	44.7	36.2

Table B2: Measured Octave Band L_{eq} Noise Levels, Tuesday 11th April 2023

Measurement Position	Start Time	Measured Noise Levels, dB			Noise sources
		L _{Aeq}	L _{Amax}	L _{A90}	
2	10:12	59.4	75.7	48.6	Distant road traffic, loud voices on court, ball on padel bat, occasional perimeter hits, (male payers on closest court)
2	10:13	63.1	75.8	49.9	"
2	10:14	58.9	75.9	49.8	"
2	10:15	61.8	76.1	48.8	"
2	10:16	59.7	77.7	48.6	"
2	10:17	62.7	78.0	49.0	"
2	10:18	62.2	78.5	47.7	"
2	10:19	58.0	75.5	47.7	"
2	10:20	57.4	75.4	46.6	"
2	10:21	56.6	70.8	46.8	"
2	10:22	57.9	75.7	48.0	"
2	10:23	59.4	76.3	48.2	"
2	10:24	58.8	70.9	52.3	"
2	10:25	57.5	71.9	48.4	"
2	10:26	58.0	77.7	47.0	"
2	10:27	58.6	72.3	47.4	"
2	10:29	56.2	75.3	47.5	"
2	10:30	50.5	63.0	45.5	Distant road traffic (break in game on closet court)
2	10:31	53.3	66.5	45.7	Distant road traffic, quieter voices on court, ball on padel bat, occasional perimeter hits, (male payers on closest court)
2	10:32	53.9	66.3	45.9	"
2	10:33	52.7	69.0	44.8	"
2	10:34	54.9	68.2	46.4	"
2	10:35	55.8	72.3	47.0	"
2	10:36	54.2	68.3	45.7	"
2	10:37	52.3	68.6	44.8	"
2	10:38	56.1	76.4	45.2	"
2	10:39	53.7	70.7	45.3	"
2	10:40	53.9	69.1	46.8	"
2	10:41	55.0	72.8	46.3	"
2	10:42	56.3	75.0	44.9	"

Table B3: Summary Statistical Noise Levels, Saturday 13th May 2023

Measurement Position	Start Time	Noise Level, dB LAeq	Sound Pressure Level (dB) @ Octave Band Centre Frequency (Hz)						
			63	125	250	500	1k	2k	4k
2	10:12	59.4	58.0	52.8	53.9	56.7	56.3	47.4	46.5
2	10:13	63.1	59.1	53.2	54.2	60.0	60.2	53.7	47.8
2	10:14	58.9	55.0	51.0	53.9	57.2	54.5	48.3	48.2
2	10:15	61.8	55.4	50.8	53.9	57.4	58.5	53.9	49.2
2	10:16	59.7	56.6	51.9	55.1	57.1	56.2	49.2	47.3
2	10:17	62.7	57.5	51.8	53.2	57.8	59.3	50.2	54.6
2	10:18	62.2	57.1	52.0	54.7	57.7	59.8	52.9	47.4
2	10:19	58.0	59.2	52.5	51.2	53.8	55.7	47.1	44.5
2	10:20	57.4	58.5	51.4	53.1	55.0	54.0	47.6	43.4
2	10:21	56.6	55.9	51.5	51.6	54.3	53.3	46.3	42.6
2	10:22	57.9	57.3	54.1	53.9	54.9	55.2	46.6	42.9
2	10:23	59.4	59.9	53.3	53.4	56.0	56.2	49.7	47.6
2	10:24	58.8	60.9	56.3	60.4	58.0	53.5	46.4	41.8
2	10:25	57.5	60.6	53.7	53.3	54.6	54.0	48.3	44.1
2	10:26	58.0	57.9	50.9	53.0	55.1	55.2	47.5	43.2
2	10:27	58.6	57.5	50.6	52.9	54.8	55.3	50.9	45.0
2	10:29	56.2	57.0	50.1	51.2	53.6	53.1	46.4	41.3
2	10:30	50.5	55.8	48.8	48.0	48.6	45.9	41.3	38.6
2	10:31	53.3	57.2	52.0	51.9	51.3	49.0	42.9	39.6
2	10:32	53.9	59.6	53.1	52.7	51.1	49.6	43	43.6
2	10:33	52.7	56.9	51.1	51.3	50.1	48.8	42.2	40.5
2	10:34	54.9	56.6	50.7	53.4	52.5	51.1	44.7	41.4
2	10:35	55.8	56.2	50.5	52.7	52.7	52.9	44.3	42.6
2	10:36	54.2	57.0	51.1	52.0	50.8	51.2	43.9	41.5
2	10:37	52.3	59.4	55.3	49.7	49.5	48.6	41.2	40.1
2	10:38	56.1	55.4	49.8	51.6	52.3	53.4	46.3	42.0
2	10:39	53.7	55.4	49.3	50.8	51.1	50.1	43.2	41.3
2	10:40	53.9	55.7	49.5	51.3	51.7	50.4	43.6	39.2
2	10:41	55.0	56.5	50.6	51.6	52.2	51.7	44.0	42.9
2	10:42	56.3	57.4	50.8	52.6	53.4	52.9	47.1	41.8

Table B4: Measured Octave Band L_{eq} Noise Levels, Saturday 13th April 2023