

Saffrons Sports Club

Acoustic Assessment

Report No. 23-0067-0 R01



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1 INTRODUCTION

Saffrons Sports Club has instructed Sustainable Acoustics Limited (SAL) to assist with the planning application of new Padel courts (three indoor and one outdoor), by undertaking a noise survey to determine the potential noise impact of the proposed courts and suggest any mitigation measures that may be necessary to reduce this impact to a suitable level.

Sustainable Acoustics visited the site on Wednesday 2nd and 9th May 2023 to undertake a background noise survey at the club and determine the likely impact at the nearest noise sensitive receptors.

In order to predict the noise levels of Padel at the site, data from a previous Sustainable Acoustics survey of a typical Padel match undertaken at the Hurlingham Club in London in January 2020 was used.

This report details the instrumentation, methodology and results of the survey, and presents the predicted noise level at the nearest noise sensitive properties.

1.1 Context and History

The proposed location of the Padel courts is currently a garden area in the middle of Saffrons Sports Club, which has been a venue for various sports over many years, therefore the noise character of the area has historically been influenced by sport, which provides legal protections from prescription and whether a noise can be considered an actionable nuisanceⁱ. In planning terms, the impact being considered is on the quality of life of the residents, but the context means that this must be considered against this historical soundscape.

ⁱ Coventry and Lawrence [2014] UKSC 13



1.2 Site Layout

The proposed site is in the middle of the club, bounded by croquet pitches to the west, athletics running track to the north, hockey pitch to the east and a cricket pitch to the south. Compton PI Road is situated to the west of the Sports Centre and Saffrons Road to the east, as visible in Figure 1 below.



Figure 1: Site location with superimposed plans of future Padel courts in purple and sensitive receivers in yellow.

Shown in Figure 1, the nearest and most sensitive receptors are highlighted in yellow, and the two sources, indoors and outdoors Padel courts, are highlighted in purple. Figure 2 and Figure 3 below present the proposed site in plan and profile views respectively.





Figure 3: Proposed site east elevation plan

1.3 National Planning Policy Framework

Current planning policy is based on the National Planning Policy Framework (NPPF), revised in July 2021, which supports a presumption in favour of sustainable development, unless the adverse impacts of that development would outweigh the benefits when assessed against the policies in the Framework, taken as a whole.

The noise implications of development are recognised at paragraph 185, where it is stated that planning policies and decisions should:

- "mitigate and reduce to a minimum potential adverse impact from noise from new development and avoid noise giving rise to significant adverse impacts on health and the quality of life⁶⁵"
- *"Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."*





1.4 National Planning Policy Guidance on Noise

The newly refreshed Planning Practice Guidance for Noise (PPG: Noise) says, "Good acoustic design needs to be considered early in the planning process to ensure that the most appropriate and cost-effective solutions are identified from the outset".

It also says noise can override other planning concerns, where justified, "although it is important to look at noise in the context of the wider characteristics of a development proposal".

It makes clear that "As noise is a complex technical issue, it may be appropriate to seek experienced specialist assistance when applying this policy".

It also says that as exposure "crosses the 'lowest observed adverse effect' level boundary, the noise starts to cause small changes in behaviour and attitude, for example, having to turn up the volume on the television or needing to speak more loudly to be heard. The noise therefore starts to have an adverse effect and consideration needs to be given to mitigating and minimising those effects (taking account of the economic and social benefits being derived from the activity causing the noise)". This indicates that the Lowest Observable Adverse Effect Level (LOAEL) upper threshold would be considered acceptable. The noise exposure hierarchy is set out in a table which suggest that at a LOAEL that is "present and intrusive" that the action should be to mitigate and reduce to a minimum.

Above this is considered to be an Observable Adverse Effect (OAE). It makes clear that when an effect becomes significant (SOAEL) it should be avoided. This guidance is consistent with the policy within Noise Policy Statement for England.

The PPG: Noise also talks of a positive soundscape "where natural sounds" are more prominent than background noise from manmade sources. The guidance indicates that this can be considered to be tranquillity in terms of identifying areas that justify being protected or improved.

Further government advice on how planning can manage potential noise impacts in new development is given in PPG: Noiseⁱⁱ.

1.5 Noise Policy Statement for England

Paragraph 180 of the NPPF also refers to advice on adverse effects of noise given in the Noise Policy Statement for Englandⁱⁱⁱ (NPSE). This document sets out a policy vision 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".

To achieve this vision the Statement sets the following three 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

[&]quot; https://www.gov.uk/guidance/noise--2

^{III} Department for Environment, Food and Rural Affairs, Noise Policy Statement for England, London, 2010



- mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.

In achieving these aims the document introduces significance criteria as follows:

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur. It is stated that "significant adverse effects on health and quality of life should be avoided while also taking into account the guiding principles of sustainable development".

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected. It is stated that the second aim above lies somewhere between LOAEL and SOAEL and 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 guiding principles of sustainable development. This does not mean that such adverse effects cannot occur."

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. This can be related to the third aim above, which seeks: "where possible, positively to improve health and quality of life through the proactive management of noise while also taking into account the 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."

The NPSE recognises that it is not possible to have a single objective noise-based measure that is mandatory and applicable to all sources of noise in all situations and provides no guidance as to how these criteria should be interpreted. It is clear, however, that there is no requirement to achieve noise levels where there are no observable adverse impacts but that reasonable and practicable steps to reduce adverse noise impacts should be taken in the context of sustainable development and ensure a balance between noise sensitive and the need for noise generating developments.

1.6 Local Policies

The Eastbourne Borough council is the local authority.

In its Eastbourne Borough Plan 2001-2011 (Adopted September 2003) Ch 3: Natural Environment, Noise 3.28, states:

Noise can have a significant effect on the environment and on the quality of life enjoyed by individuals and communities. PPG2410 advises that planning controls should be used to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs of business. Advice will be sought from the Council's Environmental Health Division on developments likely to cause noise, particularly in relation to the noise exposure categories for assessing noise levels set-out in PPG24.



2 SURVEY METHODOLOGY

2.1 Survey at Saffrons Sports Club

A noise survey measuring ambient and background noise levels was conducted at the site between Thursday 2nd and 9th May 2023.

Conditions throughout the survey were variable, with temperatures between 5 and 19 degrees Celsius and average wind speeds of 8 mph (2 to 16 mph). The wind direction was variable. There was some light precipitation on the afternoons of the 6th and the 8th May, though this is not considered to have adversely affected the results. Detailed of the weather during the period can be seen in figure 4.



Figure 4: Weather data during the survey period.

Figure 5 below shows the measurement positions 1 & 2 used during the survey.



Figure 5: Measurement positions. MP1: Long term, MP2: short term attended.



MP1 was positioned at 4m above ground level at the boundary of Saffrons Sports Club and the Compton Lodge premises, considered the nearest sensitive receptor, and was installed for long-term monitoring.

MP2 was at 3m above the ground level at the boundary with Compton Place Road, and was used for a short-term attended measurement of a 15 minute period closer to the road to quantify the relationship between the two locations.

Background and ambient noise levels at the site were subjectively at a medium-low level due to road traffic on Compton PI and Saffrons Roads at close distance, which dominates the soundscape.

2.2 Survey results

From the data collected during the long-term monitoring (MP1), it is possible to calculate representative daytime and night-time noise levels for the site. The average daytime and night-time levels calculated are shown in the Tables and Figures below. Complete time history in Appendix 2.

		Ambient noise level, dB L _{Aeq, 15 min}		Background dB Las	l noise level, 80, 15 min	Maximum noise level, dB L _{Amax, 15 min}	
		Range	Period	Range	Typical ¹	Range	Typical ²
Daytime	07:00-23:00	37 – 75	60	26 – 59	37	54 - 102	68
Evening	19:00-23:00	42 – 48	50	33 – 55	37	57 – 79	65
Night time	23:00-07:00	27 – 57	43	22 – 48	25	38 – 79	49

1 Typical background noise level is the first most present value during the period, considered the most representative(modal).

2 Typical maximum is the most present value during the period, considered the most representative (modal)

Table 1: MP1	Daytime and	l night-time	noise	levels
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		Ambient noise level, dB L _{Aeq, 15 min}	Background noise level, dB La90, 15 min	Maximum noise level, dB L _{Amax, 15 min}
Daytime	12:30	62	41	78



Table 2: MP2 noise levels from attended measurements.

Figure 6: Statistical analysis of background noise levels between 7:00 and 23:00.



Figure 7: Statistical analysis of background noise levels between 19:00 and 23:00.



Figure 8: Statistical analysis of background noise levels between 23:00 and 7:00.

37dB is considered to be the most representative daytime and evening background sound level as it is the first modal (most present) value, , and 25dB is considered the representative night-time background sound level.

37dB was used as the background sound level for calculations at MP1, representing the worst daytime and evening case..

42dB was used as the daytime background sound level for calculations at MP2.



2.3 Survey of Padel court at the Hurlingham Club

A noise survey was conducted at the site on Friday 3rd January 2020 to measure the noise of a typical Padel match. The measurement position A was 1.5m above ground level on a tripod 5m from the side of the court, and position B was at 5m from the glass of the court.

Four Hurlingham Club members with experience playing Padel tennis played a three-set match over the course of an hour. This is considered to have generated representative noise levels for a typical match. Noise levels at the Hurlingham Club are affected by landings at Heathrow airport, therefore only measurements excluding aircraft noise were included.

2.4 Instrumentation

For the baseline survey, a Svantek 958 Class 1 sound level meter (serial number 59146), with microphone (serial number 12565) and a Svantek SV12L pre-amplifier (serial number 57962) fitted. The sound level meter, microphone and preamplifier were last calibrated in a calibration laboratory on 26th August 2020 and calibration and conformance certificates are available.

Prior to and on completion of the survey the sound level meter and microphone were checked using a Svantek type SV33 Sound Level Meter Calibrator (serial number 58228). The calibrator was last traceably calibrated on 16 July 2021, in accordance with the requirements of ISO 10012 and a calibration and conformance certificate is available. No significant change in the calibration level occurred during the survey.

3 **RESULTS**

3.1 Baseline Padel data

Padel

In order to determine the noise level of a Padel game in isolation, short duration measurements were undertaken at different locations during the Hurlingham club match. Table 1 presents the results of these measurements, which are up to 1 minute in length. Position A was 5m from the open side of the Padel court and Position B was 5m from the back glass of the court.

Court position (5 metres)	Ambient noise level, dB L _{Aeq,T}	Maximum noise level, dB L _{Amax,T}
А	60	72
А	63	76
А	66	79
В	54	65
В	53	62
В	54	60

Table 3: Survey results of Padel event noise levels

It can be seen from Table 3 that at position A at the side of the court, 5m from the edge of the net, ambient measurements range from 60 to 66 dB(A) and maximum measurements range from 72 to 79 dB(A), while position B at 5m from the glass ambient ranges 53 to 54 dB(A) and maximum from 60 to 65 dB(A).



3.2 **Predicted noise levels**

Full calculations for the proposed Padel courts at Saffrons Sports Club are presented in Appendix 1.

For the indoor courts, a 15 dB(A) screening correction has been applied for the courts housing, based on calculations and allowing for installation.

For outdoor courts, a correction of 2 dB(A) has been applied in propagation to receptor B for being partially screened by the indoor courts housing.

The difference in noise level towards the most sensitive receptor between the current environment and matches on the four proposed Padel courts is presented below. For the purposes of the calculation all matches are assumed to be doubles matches to present a worst case.

Receiver	Current evening-time $L_{A90 15m}$	Padel noise at receiver $L_{Aeq 15m}$	Difference dBA
Α	37	27	-10
В	41	39	-2

Table 4: LAeq over background. Change in noise level between the current situation and the future Padel courts.

Receiver	Current evening-time L_{Amax}	Padel noise at receiver $L_{Amax 15m}$	Difference dBA
Α	65 (modal)	34	-31
В	78 (average)	52	-26

Table 5: LAmax over background. Change in maximum noise level between the current situation and the future Padel courts.

4 **DISCUSSION**

This study has investigated the noise generated by Padel tennis, and the impact on the nearest noise sensitive receptor to the four proposed courts at Saffrons Sports Club. Our calculations show that the impact of four new Padel courts is low, with an $L_{Aeq,15}$ being 10 dB(A) below the existing background sound level, and the L_{Amax} 31 dB (A) below the modal of the period at the nearest noise sensitive receptor A. And the $L_{Aeq,15min}$ being 2dB(A) below background, and the L_{Amax} 26dB(A) below the average of the short term measurement at receptor B.

The loudest event noise during Padel play is when a player hits the ball directly into the glass on their side of the court to hit over the other side. These events are included in our measurements and impact assessment and represent the L_{Amax} levels. It is important to note that Padel is not similar to squash, where playing off of the walls is integral to the game, as rebounding from the glass is a reasonably infrequent event during rallies in Padel.



It is also important to consider the general character of the area. The nearest residential properties have been bounded by facilities of Saffrons Sports Club for many years, therefore noise from sports is part of the character of this area and so to be expected by local residents. This assists to reduce the possible adverse effect generated by noise.

It is also important to note that our assessment has considered the worst case where doubles matches are played consecutively across all four Padel courts during the most sensitive time of the day (19:00 -23:00).

Overall, it is considered that the noise from the proposed Padel courts will generate a low adverse effect on the life of the neighbouring residents. This can be characterised as a **LOAEL – Lowest Observed Adverse Effect Level.** This achieves the expectations of the NPPF and NPSE and limits the impact to low.

5 **RECOMMENDATIONS**

It is not considered that the introduction of Padel courts to Saffrons Sports Club would be out of character for the area with regard to the sound that would be created (which may be described as noise if unwanted) and it should not be expected to be detrimental to the quality of life of residents, causing not more than a low adverse impact. It is, however, recommended to minimise any potential adverse impact, as far as practicable by maintaining the trees and large shrubs planted along the perimeter of the Leisure Centre to visually screen the view of the Padel courts. This will have a limited objective acoustic benefit, but it will have a beneficial psychological effect on the residents, as the possible noise from Padel may be less noticeable to them if they cannot see the courts, and some masking noise may be created by movement of the vegetation under a breeze.

It is also recommended that signage is installed around the courts asking for participants to be respectful of their neighbours, particularly in the evening, and to keep noise from calling out scores or exclamations to a minimum.

6 UNCERTAINTY

All objective data has a level of uncertainty, resulting from the measurement errors, natural variation in the environment etc. It is therefore important to consider the uncertainty of the assessment, so that an understanding can be gained as to how certain the reader can be of the conclusions. Only one Padel match was assessed during the baseline study, therefore different players may play marginally louder or quieter than what was witnessed and assessed. In addition, the Padel game was not witnessed in isolation, as during the measurements planes were flying overhead and there were between zero and two games of tennis happening within 50m of the court.

Meteorological effects such as wind direction or a damp court may also marginally change the character of the noise, a damp court or ball may reduce the noise levels, whereas wind blowing directly at residential properties from the direction of the proposed courts may increase the noise level, however this effect is not likely to be significant at these distances.

It is estimated that an uncertainty of ± 3 dB(A) would be reasonable to assume in the measurements to allow for this variance.



7 CONCLUSION

An assessment of the proposed Padel courts at Saffrons Sports Club has been completed by Sustainable Acoustics. The assessment not only considered sound level, but also the character of the existing soundscape and the impact upon it by the noise created by the activity. These were observed and measured at a demonstration game, which was staged for a previous assessment and included all aspects that would be expected to occur in a typical Padel game.

It is our conclusion that based on our assessment, the Padel tennis courts at Saffrons Sports Club will be likely to cause not more than a **Lowest Observed Adverse Effect Level - LOAEL**, which is unlikely to have a negative effect on the quality of life of the residents. This achieves the expectations of the NPPF and NPSE.

We have recommended that signage is installed to remind players that they are in a residential area, and that the visual vegetation barrier is maintained to provide a psychoacoustic benefit.

Provided our recommendations are implemented, it is concluded that **there are no technical noise** grounds on which to object to this application.



APPENDIX 1 Calculations

• PROTECT • ENHANCE • CONNECT



Distances for the Padel courts are taken from the boundary of the court for the outdoor and boundary of the housing for the indoor courts. The housing for the indoor courts is assumed to perform in a similar way to a heavy-duty marquee fabric with an acoustic lining and assigned a 15 dB insertion loss. A 10 dB screening value is used for the outdoor court being screened by the indoor courts structure towards receptor A, and a 2 dB towards receptor B for partial screening.

Receptor A

Outdoors	Lp		Distance	Att	Screening	LAeq	Lp		Distance	Att	Screening	LAmax
Outdoors	58		110	-27	-10	21	65		110	-27	-10	28
Indeens	Direct	Breakout					Direct	Breakout				
maoors	24	23	75	-24	-15	26	31	30	75	-24	-15	33
Total						27						34

Receptor B

Outdoors	Lp		Distance	Att	Screening	LAeq	Lp	Distance	Att	Screening	LAmax
	66		110	-27	-2	37	79	110	-27	-2	50
Indoors	Direct	Breakout					Direct	Breakout			
macoro	30	32.5	80	-24	-15	35	43	45.5 80	-24	-15	48
Total						39					52











Receptor A - long term position



APPENDIX 3 Canopy insulation calculation





Insul software calculation (6dB subtracted for lab and workmanship reasons).