Padel, Planning and Noise: A Guide for Applicants and Authorities

A Summary of the Research Paper "A Noise Assessment of Padel"

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Introduction

Padel is the fastest-growing racket sport in the UK, and as its popularity soars, so does the demand for new courts. This boom has created a challenge for both developers and local planning authorities: the lack of awareness of the noise created by padel and a lack of specific guidance on how to assess the noise from new padel facilities.

With current media attention focussed on contested planning applications due to noise concerns, its likely that there will be an increased community interest and apprehension to new padel applications. However, while it's generally accepted that padel is noisier than tennis, there has been little objective data to quantify this difference or to understand its unique acoustic character. This ambiguity can lead to inconsistent planning decisions and uncertainty for everyone involved, whilst

This paper summarises a detailed acoustic research project designed to address this knowledge gap. It provides a clear, evidence-based comparison between the noise generated by open-air padel and tennis courts which provides a benchmark such that decisions on noise for proposed and existing padel courts can be made accurately

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Project Scope

The primary objective of the research was to create a reliable benchmark such that noise created by padel courts can be assessed and predicted accurately and compared to the noise created by tennis courts so that it can be more easily envisaged. To achieve this, the project was designed to:

Measure and Quantify Noise: Conduct extensive, real-world measurements at a club with both padel and tennis courts to capture the noise produced during typical play.

Compare Padel and Tennis: Directly compare the noise profiles of both sports using identical metrics, measuring both the overall continuous sound level (the average noise) and the peak impact sounds.

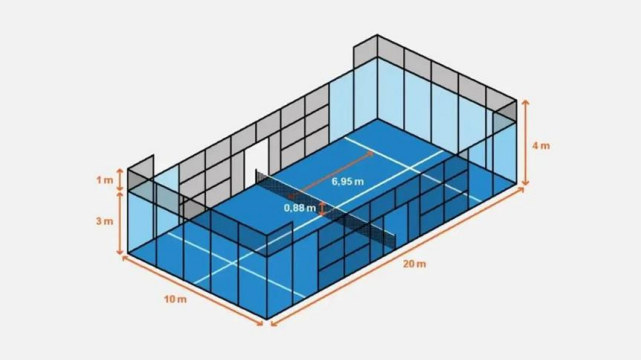
Analyse Impact Sounds: Identify, measure, and quantify the different types of impact sounds that characterise padel (bat strikes, ball on glass boundary, ball on mesh boundary) and tennis (racquet strikes).

Understand Noise Propagation: Investigate how noise travels away from the courts into the surrounding environment, and analysing the effect on noise propagation of the padel court's unique glass and mesh structure acting as a barrier.

Padel vs Tennis: Key Similarities and Differences

Padel and tennis are similar in nature, both racquet/ball sports and often sited in tennis clubs.

Major noise sources from both include; vocal noise from players on court and others congregating nearby, ball impacts on racquet, boundaries and net and impact noises on the ground.



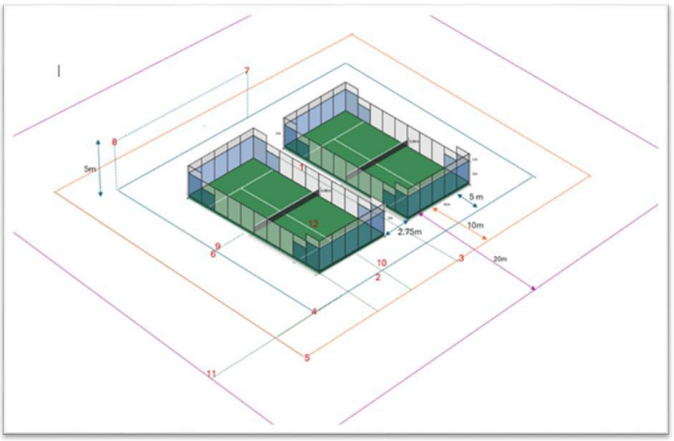
Key Differences

Padel courts measure 10x20m, are typically semi enclosed by a glass boundary at each end and wire fencing along the side. Tennis courts are larger, typically circa 28x11m and are typically not enclosed.

Padel uses bats of solid construction (typically plastic or resin) with balls that are similar to those used in tennis but have a lower internal pressure. The design and the rules of padel encourage the ball to be kept in play, leading to longer rallies and additional impact noise strikes on the boundary.

Overview of Results

Measurements were based on externally (with no roof coverings) sited padel courts based in parallel. Multiple Class 1 sound level meters were placed at a number of predefined points to analyse noise propagation on padel courts sited in parallel and this was replicated on parallel tennis courts.



Overall Noise levels

When measured 5 meters from the side of the court (at the net line), a typical game of padel produced on average with both L_{Aeq} (average noise levels) and L_{AMax} (highest noise levels), 6 decibels (dB) more than tennis, this would equate to a significant

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increase in perceived loudness. In contrast, when measured 5 meters from the end of the court (the baseline), the noise levels for both padel and tennis are almost identical.

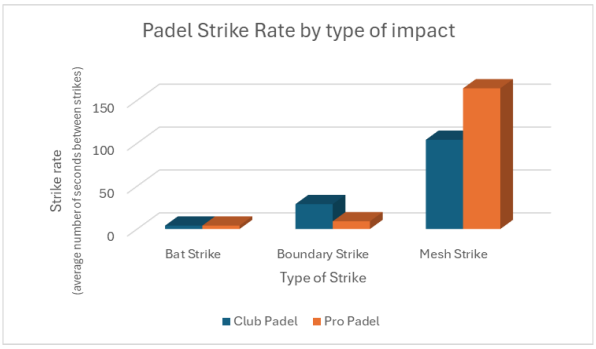
This primarily due to the solid glass boundary wall of the padel court, which acts as an effective sound barrier, blocking sound from travelling externally from the end of the court and reflecting it back internally. This build up of sound energy within the court will increase the levels of sound escaping out of the sides of the court through the mesh fencing which is a less effective barrier.

The research demonstrates that the noise level at the side of the court is approximately 12 dB higher than at the enclosed glass end, this will equate to more than a doubling of perceived loudness. This point in between the courts was shown to be loudest point, as it benefits from this increased sound egress from both courts and vocal noise from congregating players and spectators. It is partially surrounded by glass boundaries, producing a semi reverberant environment and the sound spills out externally at the end of the court on both sides, enhanced by the 'canyon effect' of reflection.

Impact Noise levels

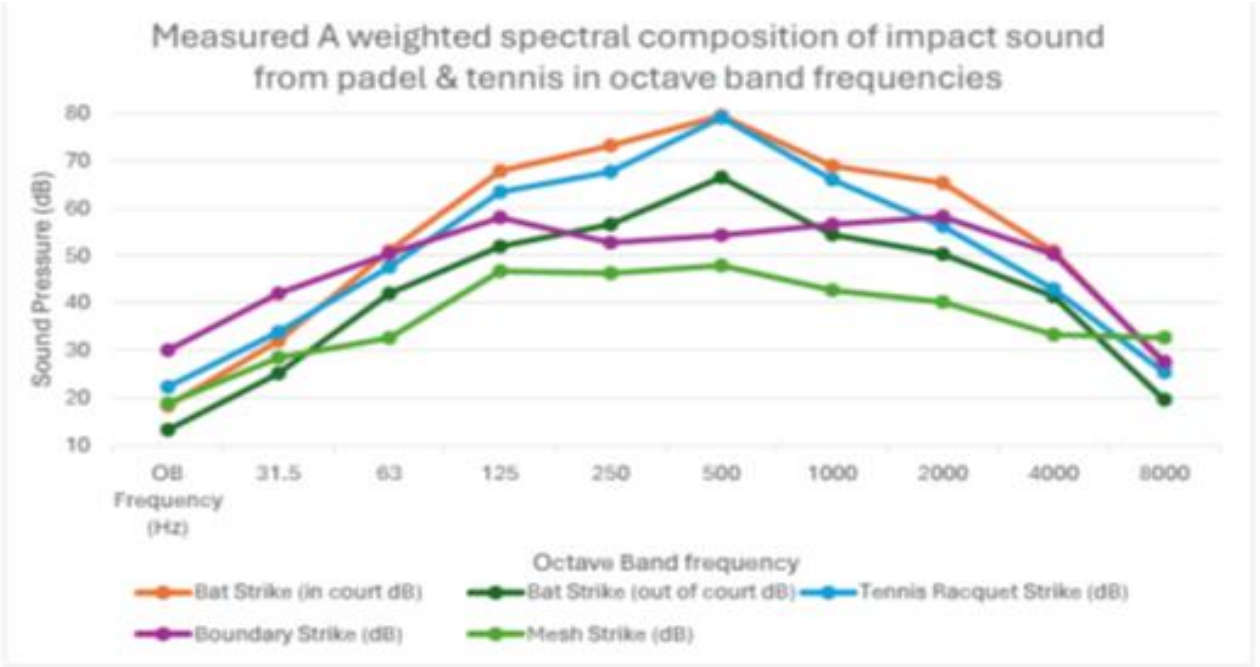
The character of padel noise is far more "impulsive" than tennis. The study found:

Bat/Racquet Strikes: A padel bat strikes the ball roughly every 4 seconds, compared to a tennis racquet strike every 6 seconds. Padel also produces impact noise from impacts on the glass boundary and the mesh fencing. Each of these impacts has a uniquely distinctive sound and adds to the overall levels of sound produced.



The padel bat creates a sharp, high-frequency 'crack', while the ball on glass creates a lower-frequency 'thump'. This constant series of varied, sharp sounds is a defining feature of padel's noise profile.

Over a typical 5-minute period of play at club level, padel generated an average of 88 distinct impact sounds, while tennis generated only 50. The research demonstrated that the number of impacts varied with proficiency at the sport and therefore the type of noise produced would vary according to the profile of players.



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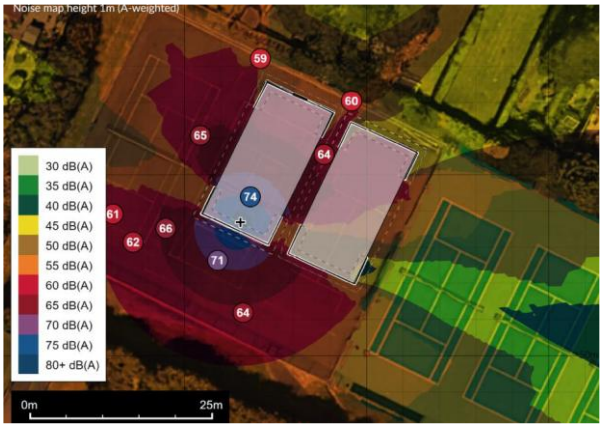
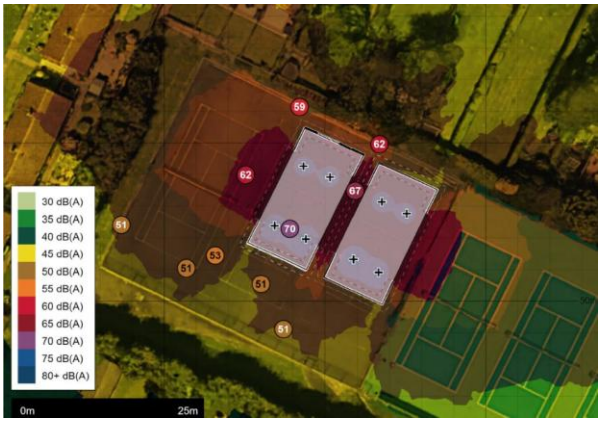
Conclusions

Current UK planning guidance lacks specific criteria for impact noise during the daytime, which is when padel is predominantly played. Therefore the context of any site must be taken into consideration to provide a justifiable noise assessment and research of this nature can be used to identify important methods of mitigation at an early stage.



Padel is objectively noisier than tennis, particularly when measured from the side. Excepting when the ball strikes the boundary and the sound will emanate from the boundary wall, these boundaries are effective noise barriers for sound travelling from the ends of the court. They also create a semi reverberant environment and will contribute to higher noise levels escaping from the sides.

The orientation of padel courts relative to noise-sensitive neighbours is a critical design consideration. The open sides of the court present the greatest acoustic risk.



Standard noise assessments that only consider the average overall noise level (L_{Aeq}) may not fully capture the potential for disturbance from padel, as the frequency and character of its impact sounds are a major factor in how the noise is perceived. This research has constructed a noise model for padel courts which can be used to predict the and benchmark the noise at a site where padel is planned or where an existing site is being assessed.

MW Acoustic Consultants specialise in padel and MUGA (multi use games areas) sites and can offer noise assessments, layout and design advice, noise mitigation consultancy and noise management plans. Our approach where possible is one of engagement with all parties including the community stakeholders to educate and inform in order to progress a successful project.

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