



## Reducing noise with Acoustic Barriers from The Leys School's sports facilities into neighbouring properties



### Products featured:

- Jakoustic Reflective Acoustic Barrier

### The Challenge

Established in 1875, The Leys School is the only co-educational boarding and day school in Cambridge and home to 560 pupils.

The sports complex at the school, specifically the all weather pitch has been in use by the school for over 20 years without complaint from neighbouring residential properties, however when the school opened its doors to selective use of its sports facilities by external parties, for example by Cambridge Town Hockey Club's training and matches, some of the neighbours expressed concerns about the increase in the levels and duration of noise from the school. Keen to maintain good relationships with its neighbours whilst equally wanting to play a bigger part promoting healthy communities, the school had two choices; it could either restrict usage of the facility exclusively to school activities or look to ways in which the benefit could be shared by the wider community.



## The Noise Survey

To better understand the concerns of its neighbours, the school commissioned an acoustic survey of the sports facilities which was carried out by Cass Allen Associates, a leading acoustics consultancy firm. The survey which measured noise levels in the gardens of neighbouring properties while the sports facilities were in and out of use, reported that the principal noise concerns stemmed from the impulsive and intermittent nature of the noise rather than the absolute noise level – for example, the high frequency ‘clack’ sound as a hockey stick hits a ball or of the ball striking the boundary of the playing area - which draws attention to itself in a way that the dominant measured noise source, in this case, of distant traffic does not.

Their report concluded that while noise levels were below what would be deemed acceptable, optional measures could be employed to reduce further noise migration.

## The Project

In response to their client’s brief, architectural practice Cavaleri Partnership prepared a scheme to: redevelop the internal roadway around the school grounds, specifically alongside the sports facilities; regularise temporary parking arrangements; and effect a number of other changes to enhance pupil safety and reduce noise nuisance from extended use of the facilities.

While not a direct requirement, but in line with the results of the acoustic survey, the school instructed its agent to submit an application that included the use of acoustic fencing to mitigate noise: from the sports facilities; the redeveloped roadway; and associated parking, which would also yield the incremental benefit of reducing head light pollution from the site.

Jacksons Fencing was appointed to design, deliver and install over 227 metres of timber Jakoustic fencing this features its unique tuning-fork posts and black powder coated steel spurs at 3.0 metres high along with associated access gates. The brief called for acoustic barriers to the all weather pitch and roadway to effectively create an acoustic enclave, and for the boundary fencing alongside the roadway to maintain its height over undulating ground and also to accommodate a mature tree which was directly on the fence line.

## The Result

The resulting installation will please both the school’s neighbours and the wider community as the two zone acoustic solution is calculated to deliver a 10dBA\* reduction in noise measured in the middle of the gardens backing on to the sports facilities; in other words, the noise from the hockey pitch will be around 10dBA lower in the gardens relative to the other ambient noise sources in the area.

It should be noted that a 10dBA reduction in noise is a significant improvement and a measure generally accepted to represent a halving of subjective loudness.

\*Calculated through use of 3D modelling techniques (CADNA/A)

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