

# Environmental Noise: Non-Infrastructure Award

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MEASUREMENT SYSTEMS



## ★ Winner: Red Twin, Lady's Wood

**This shooting school has occupied a beautiful site on the outskirts of Bristol since 1984 without any issue. In 2015 complaints about noise were received by the local authority and acoustic consultants retained by the school to investigate.**

Their involvement has culminated in extensive research and data gathering for the shooting school and development of noise control strategies to head off future ongoing complaints.

The project involved establishing the sound levels experienced from each shooting stand, using each cartridge type at each receiver location. A huge amount of data was collected. Mitigation measures based on shooting from each stand have included development of a bespoke barrier design and restrictions to the use of certain cartridge types. This has helped reduce noise from the site by over 10 dB.

With no regulation for shooting noise to guide this work and only general guidance, which was developed 20 years ago, the goal was to better current best practice and to avoid revisiting noise control on the site again in the future.

An option that was explored in detail for mitigation included localised screening. Options for straight

barriers, curved barriers and faceted barriers were all considered, which evolved into the creation of bowl-shaped shooting stands, and large wedge shapes in front of the stand. An innovative design was developed which employs multiple diffracting edges at increasing height above the ground to reduce the amount of sound reflected at the shooter, with optimal absorption from the material properties.

The judges considered that the data collected could be very useful for similar projects. They were impressed by the detail provided on the barrier reflection issue and this was well resolved with good design of effective barriers. Amongst the methods identified to reduce reflection was one based on the principles of the "acoustic black hole" and work done to investigate this was well explained.

## ACOUSTIC AWARDS 2024

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