

ACOUSTIC AWARDS 2023

Now in their 10th year, the ANC awards highlight the unique skills of UK based acoustic and noise professionals, and the dynamic and diverse nature of the industry overall, to inspire the next generation of acoustic consultants. These accolades demonstrate excellence among ANC members in addressing challenges, championing innovation and originality and showcasing the significance of a profession which blends art and science to transformational effect.

Vibration



WINNER + AIRO: Mitigation works to reduce groundborne noise from London Underground trains

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This project required measurement and assessment of vibration levels entering residential properties throughout London, typically located directly over or near an Underground Line. Through various innovative, tailored systems to reduce groundborne noise arising from the trains, resulting in a measurable improvement in experience for the residents.

Each project began with initial sound and vibration measurements within the affected rooms, to determine both the groundborne noise levels and vibration levels of various surfaces. This enabled the main transmission paths for vibration into the room to be determined and crucially which surface is the dominant transmitter and at which frequencies. Working with the client and their partners a flexible solution was designed whereby the timber floor is replaced by a cast in-situ concrete slab supported on carefully selected anti-vibration mounts. Sometimes, treatment is also required to some walls and here an independent panel system is usually recommended. Post-completion verification testing

has shown reductions in groundborne noise of 5 to 10 dB (in terms of average LAFmax due to a train pass-by), which is not only a noticeable improvement for the residents but also brings the level below the target maximum levels (as set out in TfL guidelines).

The judges noted there were testimonials from residents and clients to demonstrate this work has achieved a successful outcome. It is a proportionate and effective solution which is technically well justified. The judges were pleased to see that the solution has been rolled out over several properties and continues to be met with a good response. This project has changed the perception of what can be achieved and given control to residents on what is acceptable with a solution that can be tailored to each property. It is practical and makes a real difference to those living over underground lines. The consultants were applauded for solving a problem that others might avoid and it is a clear winner of the vibration prediction, assessment and control category.

The Client said:

"In addition to their technical expertise, AIRO recognises that this particular problem is highly nuanced, from one property to the next and, as such, are patient and analytical in their approach to ensure each test schedule is tailored to capture the most pertinent data."

