BUILDING ACOUSTICS

sponsored by H&H Acoustic Technologies

Apex Acoustics

The Houseboat, Lakehouse Drive, Poole

WINNER

The Solidspace concept for modern living is a split-level, open plan design which demands a new approach to acoustic design, as there are neither references nor literature describing desirable acoustic conditions in such a space. The acousticians drew on seminal soundscape principles to prioritise the acoustic issues for the users.

The consultants followed the core soundscape qualitative data collection principles of guided interviews and non-participatory observations, as well as reviewing user feedback from previous Solidspace developments. This approach prioritised users' acoustic concerns and enabled the design to respond to these. Acoustic modelling and auralisation was used to communicate the acoustic possibilities with the developer.

The radical addition of a soundscape approach to the traditional acoustic design process was pivotal in achieving a transformative design. The acoustic conditions were significantly improved in the three key areas identified by occupiers. Future Solidspace projects will build on the success of the Houseboat. The project demonstrates the power of adopting a soundscape approach to building acoustics design, which has many wide applications.

The judges recognised this project as an innovative solution applying the soundscape principle to address a building acoustics problem. Use of auralisation was key so that the client listened to the outcome and helped determine the standard to be achieved. Including social media feedback in the research was applauded. The client CEO said *"We are immensely grateful to you for helping us to navigate the noise question, and understand exactly what we can do about it"*.

HIGHLY COMMENDED

RBA Acoustics

Archlight Cinemas,
Battersea Power Station

The acousticians were consulted at the design stage on the viability of a three screen commercial cinema installed within railway arches beneath the main lines serving Victoria Station. Extensive noise and vibration surveys were conducted within the arches to determine the scale of the problem. To achieve suitable internal noise levels within the completed screens a series of sound insulation measures were proposed working within the constraints of the site. The arches themselves could not be compromised as they are a Network Rail asset and strict guidance was enforced for any fixings into the structure. A metal framework was proposed which was lined with dense boarding and isolated from the floor slab forming a fully isolated shell. A fully isolated lightweight floor was installed in order to limit the amount of tactile vibration into the cinema seats.

A significant reduction in intrusive noise was realised, exceeding predictions, and vibration within the completed Auditoria is barely perceptible to the majority of users.

The judges noted that a practical and creative approach had been adopted which had enabled the project to go ahead in what was otherwise an improbable site for a cinema. There was collaboration with the client throughout and expectations were managed in recognising that some unobtrusive noise would still be audible.

COMMENDED

Hoare Lea

Student Accommodation,
Balliol College, Oxford

The world's oldest college wanted to create exceptional student accommodation as part of a masterplan. Based on research, analytical analyses and on-site trial tests, the acousticians challenged the status quo of sound insulation design with Cross Laminated Timber (CLT) structures. There was creativity and collaboration which led to a solution that could be applied to future projects by other acoustic consultants.

With a move towards offsite and modular construction, the judges consider there is great potential for this approach to be adopted elsewhere. It has significantly added to the data available on CLT structures which will assist other projects and shows how early engagement of acoustic consultants adds value to projects and helps reduce the environmental impact of construction.