

# Arup develops 'auralization'



Architects and building developers in London can now 'listen' to a proposed building before it even gets off the drawing board at Arup's recently rebuilt SoundLab, which has now opened. Any space can be auralised, from train stations, sports stadia and airport terminals to concert halls, museums and office buildings. Recent SoundLab projects have included Oslo's Opera House, London's Kings Place, Heathrow Terminal 5 and the British Museum extension.

Until 10 years ago, architects could use only educated guesswork to establish whether buildings would sound just as they expected. Then, following 15 years of measuring buildings and acquiring data, Arup made it possible to 'hear' a building before the foundations had been laid

and compare it against existing buildings.

Today, Arup's new SoundLab, in the heart of London, enables the listener to experience the sound of a space or potential space as never before. Someone developing a concert hall, for example, might want it to have the acoustics of an existing hall, but with some subtle differences in texture or depth. So Arup can play a recording of an orchestra playing the same piece of music in the existing hall and then in the new building, providing an accurate comparison of the acoustics.

Neill Woodger, Principal at Arup Acoustics, who developed the original SoundLab says: "We took the opportunity to completely redevelop London's SoundLab while rebuilding our London offices. This one is, like

many of the theatres we help to design, a box in box construction, so completely isolated from its surroundings, with super quiet ventilation. We've even put the data projector in a soundproofed box and fitted heavy doors more usually seen in recording studios."

The SoundLab can be used to highlight potential problems so that they may be addressed before building starts. By auralising the differences that would be made by applying different cladding or glazing, for example, decisions can be taken on different aspects of the design; indeed, it may even be proven that less sound isolation is needed than originally thought.

Auralisation can also be used on external environments. For example, continues Woodger, "we were creating a new city park, and the client was concerned that no-one would use it, because it would be too noisy with traffic. So we developed techniques to

listen to the sound of the park, including road noise and masking by trees and birds. We used the same soundscaping technique when advising on the design for the Dongtan Eco-city in China, where private cars are restricted and people will expect to be able to enjoy the sounds of nature." SoundLab has also been used for a number of prestigious art installation projects, including Bill Fontana's Harmonic Bridge at the Tate Modern.

London is one of five SoundLabs, with the others in New York, Melbourne, Hong Kong and Glasgow. Woodger continues: "The new SoundLab has, with the aid of the data projector, a giant screen so that visitors can actually see themselves in their new building, whether that be a concert hall, office block or train station. This really helps visitors appreciate the sound of their new construction.

#### **BUTCHER BANNED FROM CHOPPING MEAT**

A council has banned a butcher from chopping meat after a new neighbour complained about the noise. Brian Clapton, 50, was stunned to get an official letter after a tenant moved in above his shop. The Council Noise enforcement officer told him "a statutory nuisance exists caused by loud impact or banging". Barking and Dagenham Council instructed the butcher to soundproof his shop within two weeks or face court action. Brian, whose business is in Barking, was also barred from using his cleaver on weekdays between 6pm and 8am.