

TECHNOLOGY

Wall of sound

A TECHNOLOGY THAT WAS DEVELOPED FOR WORLD WAR II IS THE KEY TO CREATING NEW INVISIBLE SPEAKERS FOR THE HOME. **CALLUM FITZPATRICK** REPORTS.

Invisible speakers have been available in some fashion for a number of years; however, this typically involves embedding a speaker into a wall, limiting its range of movement and resulting in an uneven distribution of sound within a room, causing unwanted hot and cold spots.

Aeria Sound Environments has worked to combat this problem by not merely implanting a speaker into the wall, but instead turning the wall itself into a large omni-directional speaker, completely removing any grille from sight and eradicating the need to compromise the aesthetics of a room.

At the heart of the technology is a transducer that produces sound by resonating a material – in this instance a wall. The transducer directs sonic energy into the wall which acts as a carrier for the energy, passing it into the air, resulting in a sound that completely fills the room with a consistent volume level.

The design is a derivative of US Military technology that was devised in the late 1930s for use with submarine fleets in World War II. Similar to the sonar system, it was originally developed to send sound waves underwater as a method of echo location. However, the Military realised that they had in fact built a transducer that resonated the entire hull of the ship rather than being able to point sound in a specific direction. Consequently, the technology was discarded and did not return until the 1980s.

Aeria Sound Environments general manager Jeff Stewart says the company's background in audio



Former US Military technology has been converted into invisible speakers for the living room.

development enabled it to expand and improve on the original design.

"We increased the power handling, and made it waterproof and salt resistant to make it ready for any application," he says.

"Everybody involved in our company has been on the front line installing and has experience installing some of the other invisible products that are available, so we knew the amendments that needed to be made."

Jeff feels that Aeria's design has a significant advantage over using traditional cone speakers for distributed audio.

"Our product resonates over an entire surface area, so the sound field isn't just linear based on where the cone is placed. You can put a pair off-axis or facing each other and there will not be the cancellation that you usually find

with cone speakers. Also, it broadcasts in equal hemispheres so the sound is exactly the same 180° away from the speaker and there is no frequency roll-off as you move away from the centre point."

This, along with the practicality of the technology is a key reason it has been adapted for commercial use, notably in the hospitality sector.

"One client turned their storefront windows into speakers and another used the transducer to play music from the front of a bar counter," Jeff says.

"Also, hotels have used them in showers and washrooms. Unlike regular speakers, they can be used without fear of rusting or somebody tampering with the grille."

Jeff says that because the fine tuning on the product was done by installers and not engineers, Aeria has been able to make the installer's job as quick and easy as possible.

"All it really takes is the knowledge of how to use a stapler and a drill, and it only takes 20 minutes to install a pair properly – not counting the running of wires," Jeff says.

Aeria has also teamed up with Xspot Wire Location Systems to enable the technology to be hidden behind a wall and relocated again with magnets – not leaving a 'road map' for somebody else to steal the job.

The company is currently looking for prospective distributors in Australia. **CH**

Aeria Sound Environments
www.aeria.ca

