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# Hidden secrets

**Mark Ludmon finds out how a modern sound system need not spoil your interior design**

**M**usic is an essential part of any leisure space, but it can be a challenge to balance the needs for a luxurious and relaxing interior with the hardware of a sound system. In top-end restaurants, bars and other venues around the world, this has been tackled by installing “invisible” loudspeakers from UK-based Amina Technologies. They can regularly be found in leisure environments where

clients want high-quality entertainment, information and communication systems but not have the interior design corrupted by visually obvious technology.

One of the most recent projects to use invisible loudspeakers was the grill at the Mandarin Oriental hotel in Kuala Lumpur in Malaysia. The luxurious interior was designed by s2dio, a design company in Kuala Lumpur founded by Ramlee Mahat, ▼



Installing Amina speakers

▲ a Malaysian-born and London-trained designer. The elegant interior, complete with in-built fireplaces, features islands of glass lacquered dark timber interspersed with inverted waterfall chandeliers that sparkle like ice crystals.

Ambient music is provided via Amina hidden speakers which lie cloaked beneath the surface of the highly lacquered ceiling islands, making it impossible to see any music source. They provide a highly dispersed and even level of sound, filling the entire space with clear natural sound but in a way that makes it impossible to perceive where the sound is coming from.

This was achieved on site by first building plywood island structures onto the ceiling. The Amina product is set into the island with the active surface of the Amina panel set flush with the front of the plywood. It is tested and then the whole surface,

including the speakers, is veneered over and gloss-lacquered in situ. "The result is truly magnificent, blending the highest quality in modern exuberant Asian style with a graceful acoustic ambience to create a venue which fully matches the opulent lifestyle of the guests it attracts," says Amina managing director Richard Newlove.

Unlike traditional pistonic loud speakers, Amina speakers work in the same way as natural musical instruments do, such as an acoustic guitar or piano: the vibration created in the body of the instrument produces the sound. In these speakers, excitation drivers set up tiny vibrations in the sound panel which transfer through the plaster, and the paint or wallpaper that is placed on top of it, and then excite air molecules at the surface. These then excite other air molecules and so on until the sound reaches your ears.

Amina speakers were used as part of a project at the Bingham, a boutique hotel in a

Georgian grand house in Richmond in south-west London. Former store rooms were converted into a new events space called the Garden Rooms, where Amina's Plaster In-wall loudspeakers were installed into the ceiling. An opening in the ceiling was made and the speakers were mounted within this opening. They were covered with 1mm to 2mm plaster skim and then decorated over.

Upstairs in the main bar, two Amina AIW 5 80 watt plaster-in-wall speakers were installed and plastered over so that, once decorated, they are invisible. They were specified by Soundceilings, which specialises in AV for the hospitality trade. "At the Bingham, we believe a lounge bar should be a place to relax, enjoy a drink, and unwind in front of the fireplace," says hotel manager Isador Gorgevik. "The room is the star, and we wanted a solution that was sympathetic to the Georgian features, be minimalist, but deliver superb sound quality."



The upstairs bar at the Bingham hotel



The grill at the Mandarin Oriental hotel in Kuala Lumpur