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CEILING SYSTEM PROVIDES SOUND MASKING AND PAGING TO HELP CONSULTING FIRM PRACTICE WHAT IT PREACHES

Special speaker panels that integrate with acoustical ceilings solve problem of limited plenum space and partially open ceiling design in firm's new offices

Newcomb & Boyd is an Atlanta-based consulting and engineering firm that often recommends sound masking to its clients for use in commercial office spaces. So, when the firm recently moved from an old, outdated facility to a brand new space, it came as no surprise when it decided to install a sound masking system in its own headquarters.

However, the firm realized that the new office's limited plenum space and partially open ceiling design would be problematic for a traditional, plenum-based system. As a result, it decided to use a unique new system in which sound masking – as well as paging – is incorporated in a special speaker panel that looks just like an ordinary ceiling panel and is installed in the ceiling's grid system.

The result: A ceiling that is not only visually pleasing but also one that helps enhance speech privacy and workplace effectiveness.

The partially open ceiling design at Newcomb & Boyd's new offices made plenum-based sound masking difficult to implement. It posed no problem for Armstrong's i-ceilings system because the speaker panels are installed in the ceiling plane.

Sound Masking Included in Original Design

Newcomb & Boyd's new space takes up approximately 30,000 square feet and is laid out in the shape of a "J". The space located on the outside of the "J" is an open plan environment that houses a number of employee "teams," while the inside is a closed plan comprised mainly of conference rooms, storage and private offices.

According to Karl Peterman, one of the firm's associates and head of its Architectural Acoustics Team, sound masking was included in the design of the new space from the beginning. "Our former facility, which also had a great deal of open plan space, did not have a sound masking system, except for a rather noisy HVAC system."

"We knew speech privacy would be an issue in the new space, especially since the new HVAC system was going to be much quieter," he continues. "Our staff spends a great deal of time on phones and gathered around drawings discussing various aspects of a project. Verbal communication of this type is a major source of noise, and the main reason we needed sound masking."

Newcomb & Boyd installed an i-ceilings™ Sound System from Armstrong to provide the masking. This unique system integrates with acoustical ceilings to deliver sound masking, paging and music through a common set of speakers that looks like ordinary ceiling panels. The complete system includes special ceiling panel speakers in a variety of visual patterns, electronic processors and amplifiers to generate and drive the sound, and custom tuning for the space.

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Speaker Panels Install Directly into Ceiling Plane

In most applications, paging speakers are cut into and placed in a ceiling, while sound masking speakers are hung in the plenum, bouncing the electronic masking sound around the plenum and back down through the ceiling plane. The i-ceilings panels work differently. They are flat, distributed mode loudspeakers that simply lay in the grid like standard ceiling panels, radiating sound downward in an omni-directional pattern. Because of this design, they provide broader coverage than conventional cone speakers. They can also provide more effective and uniform sound masking because the masking sound does not have to be designed around obstructions in the plenum or sound leaks from open return air grilles or light fixtures.

A total of 100 i-ceilings speakers are installed in the Newcomb & Boyd space, including both open and closed areas. Richardson Associates Electronics of Suwanee, Georgia installed and tuned the system.

In Newcomb & Boyd's open office plan, acoustical ceiling panels are placed only in those areas located above employee work areas. Each ceiling "cloud" contains an i-ceilings speaker panel to help ensure better speech privacy.

Ceiling Design, Plenum Space Affect Decision

Peterman explains that a number of factors affected the decision to install the new system. One was the space's partially open ceiling design. As part of the design, the grid system is installed wall to wall, but acoustical ceiling panels are placed only in those areas located above employee teams. Corridors and other passage areas are left open to the plenum. The visual effect is a series of ceiling "clouds" or "pods."

"If we had used a plenum-based masking system, there would have been a great deal of bleed-over and sound leakage over the sides of the ceiling clouds," Peterman says. "The result would have been hot spots and localization. Because the Armstrong speaker is incorporated directly into the ceiling grid, this is not a problem."

Another consideration was the limited plenum space. "It's a small, crowded plenum," he says. "There's not a lot of distance between the ceiling and the deck, and there are plenty of obstructions, so it would have been problematic for plenum-based masking. The i-ceilings Sound System was a good solution."

He also liked the system's ability to provide multiple zones for sound masking. "This is one of the strengths of the system," he says. "Because of the ability to adjust sound levels, we were able to break the space down into four zones. The long section of the "J" gets one level, for example, while the private offices get a quieter level."

Speaker Panels Blend in with Overall Ceiling

From an aesthetic point of view, i-ceilings speakers look like other ceiling panels and coordinate with Armstrong's most popular ceiling patterns. As a result, they blend in with the overall ceiling, making the space more uniform and visually pleasing than one with visible speakers. At Newcomb & Boyd, the speaker panels are used in conjunction with Armstrong's Ultima™ ceiling panels.

"We like the overall concept of i-ceilings," Peterman concludes. "The fact that sound masking, paging and aesthetics all blend together in one ceiling panel appeals to us. It is a classic case of form following function. We're also pleased with the system's performance, particularly the quality of paging over masking, and would recommend it to our clients."