

## If these walls had ears

Sophisticated sound systems are increasingly critical to hotels and convention centers



Lewis Sound installed AV systems throughout the 265,000 square foot Midwest Airlines Center

Lunch time brings a crowd of hungry customers to the outdoor café at the Hotel Metro in Milwaukee, along with the quiet roar of conversation and ever-present street noise. As music plays softly in the background, diners are unaware that this hotel has ears. A series of audio monitors placed around the perimeter of the hotel are listening to their voices, the hum of traffic, even the bicycle bells of passing messengers. No one is eavesdropping, however. The monitors are just making sure the background music can be heard over the hubbub of the crowd. If the noise level goes up, so does the music, and when lunch is over and the crowd is gone, the music level comes down.

That automatic sampling device is just one part of a sophisticated sound system installed throughout the historic hotel by Lewis Sound & Video of Waukesha, Wisconsin. Lewis caters to a clientele that wants both versatility and sophistication throughout their properties.

### The Midwest Airlines Center

Lewis Sound installed the audio and video systems at Milwaukee's Midwest Airlines Center in the late 1990s. With over 188,000 square feet of exhibit space, nearly 40,000 square feet of meeting space divisible into 28 separate rooms, and a 39,000 square foot ballroom, flexibility was a key factor in Lewis's design.

The cavernous exhibit halls and convention areas might suggest that any audio signal foolish enough to venture in would be swallowed up by the overhead emptiness. Not so, according to Henry Lewis, consultant for Lewis Sound & Video. "Typical convention centers use overhead distributed loud speaker systems," said Lewis. Because loudspeaker directivi-

ty is a function of diameter, Lewis technicians chose to install 12" to 15" coax speakers to ensure both clarity and coverage. "If we've got a speaker 23 feet above the finished floor, we need a speaker with a focused coverage pattern to throw that far," said Lewis.

DSP technology was just beginning to emerge when Lewis Sound did the work at MAC, so they chose analog room combining systems instead. The FSR 116 is basically a matrix switcher with a graphical user control panel. Lewis fed each room's inputs directly into a mixer, then the mixer's single output into the FSR system. The FSR then feeds the equalized signals back to each of the rooms, but the control panel allows users to combine, or separate, any of the rooms on the system by simply touching a button.

"It's a really bulletproof technology," said Lewis. "We used it because banquet rooms are often operated by people of limited AV talent. We installed several FSR room combiners at the center."

Making large spaces small, combining and reconfiguring meeting space and doing it quickly and easily is a key marketing factor for convention centers. "We're always adjusting to the clients needs," said Richard Geyer, president and CEO of the Wisconsin Center District, the governing body for MAC. "You have to be versatile today. When a group walks through on their pre-

"...When a group walks through on their pre-convention visit, you have to accommodate them or you're not going to get them back..."

convention visit, you have to accommodate them or you're not going to get them back."

## The Italian Community Center

When their sound system repeatedly failed to live up to expectations, managers of the new Italian Community Center in Milwaukee went to MAC for a recommendation. The sound quality there so impressed them that they brought Lewis Sound in to set their systems straight.

The first project was to fix the sound in Festa Hall, a 350 seat banquet room, which at the time had concrete walls and a high metal ceiling. "This room was too echoey," said Susan Lewis. "The speakers were too high, there were too many of them, and they were the wrong type of speaker for this room" In their place, Lewis Sound installed nine 12-inch coax loudspeakers 20 feet above the floor, firing straight down, plus a new power amplifier, equalizer and mixer.

The difference was astounding. Lewis moved on to the Grand Ballroom, which holds 750 people and can be divided into three sections.

"Each of those three rooms has a barrel-vaulted ceiling," said Lewis. "The acoustics were horrible. That ceiling has a focal point about six feet off the floor, essentially where your ears would be if you were standing up. Audio was virtually unintelligible." Again, Lewis replaced the loudspeakers and included an FSR room combining system.

Patrick Morgan, ICC's business manager, says they couldn't be happier with the results. "Lewis came in and did a terrific job in our Grand Ballroom and also took care of our smaller banquet room. We've had nothing but compliments since they did that."

## The Pfister Hotel

Acoustics and aesthetics need to go hand in hand in an elegant setting like the Pfister Hotel. The property's Imperial Ballroom has an extremely ornate ceiling that would not have been enhanced by speaker grills. "We came up with an innovative loudspeaker enclosure to fit in to the aesthetics of the building," said Lewis. "If you walked into the ballroom you wouldn't even know where the speakers are." Lewis hid 12" loudspeakers in the custom enclosures plus more standard 8" speakers in a portion of the room with lower ceilings. The heart of the system is an IRP System 41, a modular device that can be customized with plug-in cards. One card might have four mic inputs, another four outputs, another an 8 by 8 matrix.



*The sound system on the Pfister's seventh floor can combine or separate two ballrooms and additional meeting spaces into as many as 13 individual rooms.*

Using this system, Lewis Sound & Video was able to combine a variety of configurations using the two Pfister ballrooms, the Hall of Presidents and King's Row, which are large meeting spaces at either end of the hotel's seventh floor. "Each of those spaces consist of four meeting rooms that are combinable with each other and with the ballrooms themselves," Lewis said. The firm also designed graphic control panels for each room that simplify the otherwise complex combining system.

## The Hotel Metro

More intimate but just as elegant, the Hotel Metro's ballroom holds up to 150 people, but the technology it has to offer is no less impressive. Lewis installed an audio system based on a Peavey MediaMatrix 108 digital signal processor. Ballroom staff control basic sound settings plus lighting levels, draperies and video screens with a Crestron wireless control. For more complex operations, however, staff can select audio system sources for a variety of hotel areas, control the volume and even override the system for diagnostics from the touch sensitive monitor that controls the DSP itself.

"It's a very versatile system," said Hotel Metro owner Jamie Hummert. "The sound can be split so we can play background music outside, different sets of music in the corridors and lobby, or even combine the ballroom with the bar if we have live music in there."

Because the crowds in the lobbies, bars, restaurants and outdoor café can vary widely, Lewis Sound also included ambient noise level sensors to regulate volume levels. "Oftentimes the lobbies are quite quiet so the music is very soft," said Lewis. "Every so often, though, they get a busload of conventioners and the ambient noise goes up 20 DBs. The system adapts to that." The system also includes a time of day function that shuts the audio off late at night when no one is around.

"Like most hotels, the Metro wanted versatility in their system," said Lewis, "and that's what they got. The system we built was seriously ahead of its time, but it's a truly functional system that has held up well to the rigors of day-to-day use."

Below: section of the Italian Community Center's Grand Ballroom, with its acoustically-difficult barreled ceiling.

