



# CONCERT SOUND

## Sound Vision installs high end audio and video at Marengo Community High School

The variety of events staged in a large performing arts center can be a major challenge for an AV system designer. A soprano soloist, a rock band, an orchestra, a lecturer and a drama troupe all require just the right combination of electronics and acoustics to bring out their best.

The same is true of the 417-seat auditorium in the new Marengo, Illinois, High School, where AV integrator Sound Vision, Inc. and consultant Kirkegaard Associates teamed up to offer absolutely top shelf sound and video. "The challenges were essentially the same as at any concert hall," says Sound Vision systems consultant Tom Allison. "There actually are a wider variety of events held here, and the standards are just as high.

The new auditorium includes a number of powerful features, starting with a variable acoustical treatment that can shift the room's reverberation characteristics to meet the needs of a particular performance.

### Varying the sound for music and drama

Marengo High School puts a priority on its band and theater programs. For music, the best sound would come from a fairly lively, reverberant room. But for a drama production (or a lecture or speech), it's best to minimize echo for a clean intelligible sound. At Marengo, part of the variation is achieved through the sound system and part through the structure of the room.

Kirkegaard AV consultant Jonathan Darling specified a left-center-right speaker system. "For speech reinforcement,"



Darling says, "you would mix largely to the center loudspeaker, because with that we can minimize the amount of energy that's being thrown against the walls." For music, the system weights the left and right speakers more. While that's mainly for stereo imaging, it adds more room interaction as well.

The rest of the variation is achieved by changing the acoustical properties of the room itself. Kirkegaard acoustical consultant Pamela Clements specified heavy draperies to be installed at the back wall and, up on the catwalk level, on the side walls as well. Open them fully for maximum reflection or close them for maximum absorption.

### Innovative AV

The video system at Marengo is also state of the art. To deliver as much impact as possible from computer presentations and video, Allison suggested a 6,500 ANSI-lumen XGA-native Sanyo projector for the 15' x 20' screen. "The brightness and contrast this projector delivers surprises people," says Allison.

The auditorium complex features a video and audio signal routing system with a wall-mounted Panasonic video camera, video recorders, a large number of jacks for microphones and portable video monitors and 72 ceiling loudspeakers installed in the auditorium itself and the commons/lobby area. Allison says this extensive system is used in three ways.

First, the system can be used in conjunction with an 8-channel audio recording setup to produce professional quality recordings of any performance, whether audio on CD or video on tape. Staff also use the recordings for instructional purposes, giving students the chance to review rehearsals and performances as a learning device.

Second, the system can be used live for monitoring performances from the band and choral rooms or from the school's commons area, which serves as a lobby during stage events.

Third, these rooms have microphone inputs and signal routing back to the auditorium, so it's easy to use them as an 'electronic orchestra pit' when the normal pit will not suffice.

The sound and video systems in these rooms can also be used independently, through what is essentially a room-combining amplifier setup. The commons area is particularly flexible, serving as lobby, dining area and, as needed, a meeting space for groups of up to 400.

Finally, each space is included in a school-wide paging system plus an intercom system used to help coordinate off-



*Top: the new auditorium with its sound mixing station in the center. Middle: the commons area serves as a lobby for the auditorium and the gym as well as a meeting room in its own right. Bottom: the new gym.*

stage staff and performers.

### The new gymnasium

Sound Vision and Kirkegaard also collaborated on a sound system in Marengo's new gymnasium. "The gym was tricky," says Darling, "because of the way it was to be used."

The largest meeting space in the high school, the gymnasium can seat up to 2,000 people. During games, sound is provided by a distributed speaker system, with full-range loudspeakers mounted directly above the bleachers on the main floor and the balcony. For assemblies and graduations, there's an additional high-frequency horn to serve temporary seating set ups on the basketball floor. "We didn't need full frequency response," says Darling, "because the low mid and low frequencies would still come from the distributed system." The balcony has its own speaker zone which can be used separately, with a portable sound system, for wrestling meets and cheerleading practice.

### Working together

Darling says he's been impressed with Sound Vision and their work on the Marengo installation.

"I've been extremely pleased with them. First of all, there was a lot of communication, and second of all they have been extremely thorough."

Darling says that Sound Vision was "really great about contacting us about things they thought could be done a little bit better or a little more efficiently. It's really nice when the AV contractor can come in and, maybe because of their prior experience or maybe because they look at things from a slightly different point of view, see some areas that can be improved upon. That extra set of eyes is just great."

"Both Tom Allison and John Carlson have been really really conscientious," Darling adds. "First, they provided everything that was asked for in the specification, which is not always the case. Then they were very prompt and very accurate. I'd like to work with them again."



Left column: high frequency horn above area used to set up a stage in the gym; full-range speaker mounted above bleachers in the gym; backstage rack in the auditorium; closeup of rack wiring in auditorium. Right column: main auditorium rack housing the sound and video systems; commons area; one of 54 ceiling speakers in the commons area; sound engineer's station in the auditorium



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