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Muzak of Toledo installed two Iconyx IC24's in wall recesses in Fayette High School's cafétorium and two IC32's in the gymnasium on the other side of the wall.

Iconyx Helps Fayette Local Schools Maximize New Multipurpose Building

Foothill Ranch, CA [October 2009] – Fayette Local Schools, a public K-12 school in the small rural community of Fayette, Ohio, USA, has installed two pairs of Renkus-Heinz ICONYX digitally steerable line arrays to maximise the utility and value of two key spaces in its new building.

This small community of 1340 people recently replaced its 80-year old High School and other school buildings with a new building of almost 100,000 square feet at the south end of town. The new school, its parking lots, athletic fields and planned future additions occupy 56 acres of land. The entire project cost \$18.2 million, financed by state aid and a local bond issue.

The architect for the project was Beuhrer Group Architecture & Engineering of Maumee, Ohio, and Barton Malow of Columbus, Ohio was the construction manager. AV systems, including the security cameras, building security, classroom sound reinforcement, public address and sound system for the cafetorium and gymnasiums, were installed by Muzak of Toledo of Toledo, Ohio. Muzak of Toledo's engineer, John Raymond worked closely with Beuhrer Group to optimize the AV systems.

As in many small towns, the high school is also a center for community activities of all kinds, including theatrical productions and musical concerts as well as athletics. All of these and more can take place in Fayette Local Schools, in a multipurpose space that includes both a gymnasium and cafétorium. A central stage is accessible to both spaces, which can be separated or combined depending on the event.

While some acoustical treatment was installed, the interior has an abundance of reflective materials like cinder block walls, glass windows and hard floors. This made it all the more difficult to design and install a system that could handle a very wide range of events without depending on an expert operator.

To keep things simple, Muzak of Toledo turned to advanced technology: **ICONYX Digital Steerable Array Systems** from Renkus-Heinz. They may look like the traditional columns often found in high school gyms, but these linear arrays control each of the high-performance coaxial transducers in the array individually, powering each loudspeaker with its own channel of digital amplification and signal processing (DSP). At Fayette Local Schools, Muzak of Toledo installed four Iconyx arrays: two **IC32s** (assembled on site from four IC8 modules) recessed into the gymnasium walls, and two **IC24s** (three-module arrays) in the cafétorium side.

The DSPs for all arrays were preprogrammed on a computer running **BeamWare 2.0** software. This application allows designers to create virtual models of the room and the audience areas, then define, aim and raise or lower multiple beams of acoustical energy in software. The program displays the results in visual form. When the SPL (sound pressure level) and intelligibility is acceptable throughout the listening area, the designer tells the program to calculate processor settings (equalization filters, delay and amplitude) for each driver in the array. The settings are later uploaded to the **ICONYX** arrays once they have been assembled and installed.

Using RTA and TEFF data, the appropriate beams were assigned to properly cover the gymnasium and cafetorium. To ensure that the rear wall reflections were kept to a minimum, the **IC32s** for the gym were steered into six beams and optimized for coverage at all levels of the bleachers.

“I was concerned about the coverage of the gym area from the standpoint of throwing sound from one end of the gym,” says John Raymond. “Typically, we would use cabinets hung from the ceiling, distributed evenly along the front of the bleachers, however, the Iconyx more than satisfied the sound requirements for the area. We are able to run at anywhere from 90 to 104db throughout the gym and rear wall echo is negligible. This configuration allows both the bleachers and floor to be fully covered. There is not a bad sound seat in the house.”

To keep things simple for the operators, Muzak of Toledo installed a Biamp Audia system with CobraNet digital audio distribution. Using a sensing microphone, Muzak of Toledo programmed the Audia unit to act as an automatic level control. The sound system is operated at its loudest level for basketball games in the gymnasium, and has other presets available at the touch of a button for different types of events. Muzak of Toledo stayed with the project after the school year opened to make sure training was adequate and the school staff understands how to use the new technology to its best advantage.

“This was our first experience with **ICONYX**,” said John Raymond. “The aesthetics of the spaces were preserved and the performance of the speakers is phenomenal. **ICONYX** is a great product to have in the toolbox.”

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Headquartered in Foothill Ranch, California, Renkus-Heinz, Inc. is the worldwide leader in the design and manufacture of audio operations networks, digitally steerable arrays, powered and non-powered loudspeakers, system specific electronics and fully integrated Reference Point Array systems. For additional information contact:



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