ECKEL
NOISE CONTROL TECHNOLOGIES

SOUND SOLUTIONS

CASE STUDY

Noise Takes a Dive at Fremont Ross High School Natatorium

When you combine loud activity and a raucous crowd in a space surrounded by hard surfaces, you get an acoustic nightmare. Sound bounces all over the place, reverberating in ways that are unintelligible, distracting and unpleasant. This is exactly the scenario encountered in buildings with indoor pools, also known as natatoriums, and it's a problem that Fremont Ross High School in Fremont, OH needed to solve. Eckoustic Functional Panels from Eckel Noise Control Technologies provided the remedy, transforming the school's natatorium into a space acoustically suited for every intended purpose.

The high school hired design/build contractor Janotta & Kerner, Inc. of Monroeville, OH to devise and construct its natatorium. The contractor alerted administrators to the potential acoustic problems in such a space, especially given that the school wanted to accommodate swimming practice and instruction, swimming competitions and programs that combined music and aquatics. Recognizing the need to address these concerns in the initial design phase, Fremont Ross High School enlisted the services of the acoustical engineering firm DH Kaiser Co., based in Canton, OH.

"Natatoriums are notorious for presenting difficult acoustic challenges. With the typical moisture- and chlorine-resilient construction materials used, and given the large volume of these spaces, poor acoustics that make the spoken word hard to understand and give rise to excessive noise from even the simplest activities are commonplace," said DH Kaiser President and Chief Consultant Bill Hannon. "My challenge and goal was to create an environment where speech communication would be clear and multiple activities could occur simultaneously without deterioration of sound or enjoyment."

Since the natatorium had not yet been constructed, acoustic testing had to be accomplished via computer modeling based on architectural specs. The results indicated a reverberation time of more than 11 seconds at 500 Hz, far exceeding the ideal at this center-of-speech frequency. Armed with this information, Hannon began designing a solution that would meet the school's needs and gel with the building plans.

Eckoustic Functional Panels (EFPs) from Eckel Noise Control Technologies were the clear choice to resolve the acoustic challenges involved. Eckel EFPs are available in moisture-resistant coated aluminum, perfect for a damp, chlorinated environment. They also are easily-adjustable in the installation process and highly-durable over time. And because they offer superior sound absorption, requiring less than 25 to 30 percent of the reflective surface to be covered, they are a more practical and cost-effective choice. For these reasons, both school officials and the contractor team supported the choice of Eckel EFPs.

Upon completion of construction and installation of the Eckel EFPs, Fremont Ross High School had a state-of-the-art natatorium suited for every intended purpose. Post-installation testing revealed a reverb time of 1.63 seconds at 500 Hz. This is a huge difference from the computer model predictions of the space without acoustic panels, and one that everyone at the school as well as visitors to the facility are able to discern and appreciate immediately. Not only is the school able to safely and effectively conduct its own swimming practices and instruction, it is successfully hosting competitions and travel meets, as well as community-based aquatic programs, to everyone's delight.