



acoustic correction



microphone solutions



presentation support



An Audio Makeover

Sigma-Aldrich is a leading Life Science and High Technology company with its international headquarters in St. Louis, MO. Within the past 5 years, Sigma built a unique, architectural dome-shaped auditorium with ample room for executive forums. As large and beautiful as this building is, it was unable to hold multiple conversations due to the amount of reverb in the auditorium. Sigma found that when people 15 to 20 feet apart, tried to carry on a conversation, they couldn't hear each other. Improper delay and sound reverberation due to inappropriately placed IR sensors and inefficient speaker placement were to blame. Sigma needed a specialist to solve their audio problems. Innovative Technology Group (ITG) was brought in to provide a solution. "There was nothing wrong with the equipment that was purchased for this room - in fact, it was high quality product," explains George Brosie, Director of Engineering for ITG, "However, the system was

not installed by an audio engineer. As a result, the DSP was not programmed with the optimum audio levels in mind."

The Rooms

The Sigma auditorium is made up of two rooms: the tiered room and the flat room. The tiered room holds 100 tiered seats, tables, and 58 microphones located at every pop up box on their adjacent tables. A mobile podium is located at the front of the room that can be plugged into three separate floor boxes: left, center and right. Three, 40" LCD screens are placed at the bottom of the tiered seating in front of its corresponding floor boxes. They are placed facing the presenter to be used as either a prompter or a video monitor by the speaker (eliminating the need for the speaker to turn around to look at his presentation). The second room is called the flat room - it has no tiered seating, but is separated from the tiered room with a moveable wall. The flat room also has a mobile podium that can be moved to three individual floor

boxes, along with two projectors: one large and one small. The large projector is used when the moveable wall is opened up and the auditorium requires a larger image. The smaller projector is for the more intimate meetings.

The Solution

To fix the overall audio reverb issue, an acoustic engineer was brought in to analyze the room with precision instrumentation that assessed how much sound dampening was needed. ITG worked with the acoustician to determine the type of speaker, the proper quantity of speakers, and the ideal sound decibel level to minimize the new acoustic treatments that were needed. "We put in around 7000 square feet of treatment," explains Mr. Brosie, "And integrated mics into the tables to be used for in-room support, question/answer sessions, and audio-conferencing." ITG also installed more speakers at a lower volume, which made the tables look more symmetrical with the

cable cubbies. They placed one microphone per cable cubby resulting in a room that not only functioned better, but was also more architecturally and aesthetically pleasing. This, however, meant that speaker angles, dispersion patterns, and DSP programming had to be modified for optimum performance.

Minimized Costs Amid Changes & Deadlines

But not everything ran according to plan. The original room design called for fixed podiums. After the initial design work was completed, Sigma decided they wanted to make the podiums mobile so they would be able to move them to three separate locations in each room - as desired. To do this, ITG had to add extra infrastructure, additional conduit with a new path to get trenching to the floors and new floor boxes. "Designing how the podium worked was different than if we designed from ground up," explains Mr. Brosie, "Without having to send back the equipment, we found a way to add products that would actually minimize the cost of returning everything and starting from scratch. Since we were already in the middle of a project and had a January deadline, we still needed to complete that work within a given amount of time."

The Results

Despite the changes mid-project, the timeline was met and Sigma was able to use a workable auditorium for their scheduled, corporate meeting. With the acoustics better than ever, this auditorium now meets the auditory standards that a leader in life science and high technology such as Sigma, would know and expect in its global industry.



tiered room



architectural dome



flat room

