An Interview With Chris Savereid of Acentech, Inc.

High Profile (HP): First, congratulations on Acentech's 60th year. I understand that for its work in acoustics, Acentech was honored by the American Institute of Architects (AIA) "for having almost single-handedly invented an entire profession by creating an awareness of acoustical considerations in design and by integrating solutions based on scientific principles with architectural and artistic concepts." Can you elaborate on that?

Chris Savereid (CS): The AIA recognized the pioneering work of our founding firm, Bolt Beranek and Newman (BBN), which essentially invented the profession of acoustics consulting when it was founded in 1948. Many of the firms that compete with Acentech today were started by consultants who received their initial training and experience in one of BBN's offices. When the acoustics division of BBN became Acentech in 1989, we committed ourselves to building on this rich heritage. A remarkable eight of Acentech's current consultants have worked together at both BBN and Acentech for around 30 years. I think that the AIA award also recognizes an outstanding continuity of service.

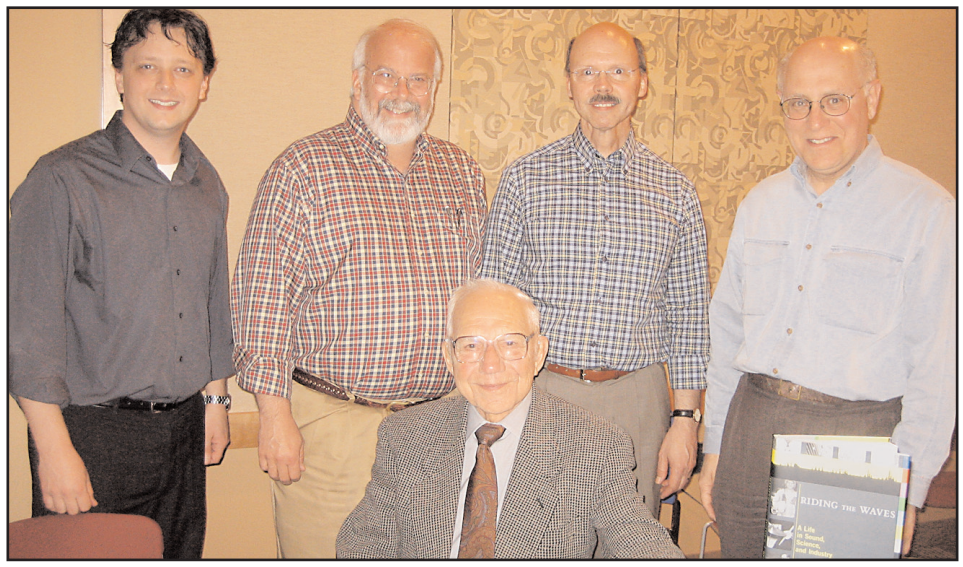
HP: What have been the most significant changes in architectural acoustics in recent history?

CS: Two notable changes evolved with technology over the last 15 years: the use of computer modeling (which has largely replaced building physical models) and the resulting auralizations (acoustical simulations of an environment). Using computer modeling and signal processing techniques, acoustical consultants can transform architectural drawings into a realistic, surround-sound aural rendering of a space – an auralization – that allows architects and project owners to hear their space before it is even built.

Although naturally suited for evaluating music performance spaces, auralization can be used for rooms of any kind – from atriums, libraries, and dining halls to academic lecture rooms and corporate conference rooms.

HP: What should project owners consider for audiovisual and sound system design during pre-construction?

CS: In many ways, audiovisual and sound systems are only as good as their programming phase – when an experienced AV/sound system designer consults with users and gains a full understanding of what the systems must do, who will be operating them, and what the budget will allow. The system description and budget that come out of this programming effort will give the users an accurate idea of how the system will serve their needs. Without a thorough and sensitive programming phase, there is a very real danger that an AV contractor will simply give the user what the contractor considers appropriate, which could be just another standard, off-the-shelf system – and run the risk of not meeting the user's particular needs or specific goals.



l-r standing: Brian Masiello, audiovisual systems consultant; Bob Berens, acoustics consultant; Chris Savereid, president; and Carl Rosenberg, principal, all of Acentech. Seated is Leo Beranek, author of Riding the Waves: A Life in Sound, Science and Industry. Photo credit: Joan McQuaid/Acentech

HP: Why is the issue of noise and vibration control talked about so much? Has the problem increased?

CS: More attention is being paid to issues of noise and vibration control than ever before, and this applies to manufacturers, engineers, and architects. At the same time, the general public's awareness of these issues, and in many cases its sensitivity, has increased as well. As an example, consider how often restaurant reviews include a comment about the noise level of a dining room. Regarding sound systems, the general public has come to expect very realistic and exciting sound amplification with a fidelity that matches the studio quality of CDs. This focus on sound results in plenty of work for acoustical and audiovisual consultants. I think that we have better tools and knowledge than ever before for analyzing and resolving noise and vibration issues.

HP: How do you approach environmental and industrial acoustics? Are there rules that apply to these disciplines?

CS: Acentech performs acoustics and noise analyses for commercial and industrial facilities, airports, highways and railroads – all of which can generate sound and vibration that may impact surrounding communities. Our firm evaluates the range of environmental impact in ways that allow the public and regulatory agencies to make informed, responsible decisions. Most communities have very specific regulations that govern environmental and industrial noise levels. Within certain types of workplaces, OSHA noise limits apply to protect the hearing and health of workers.

HP: What trends in building dynamics have you noticed?

CS: As construction methods have gotten lighter-weight (mostly to save money), there is increasing concern with structure-borne vibration that can adversely affect sensitive equipment. This is particularly true in healthcare facilities as well as the rapidly expanding field of biotechnology, where labs are full of high-tech, very sensitive instruments. We have consultants who assist in the design of laboratory and healthcare facilities that accommodate noise and vibration sensitive equipment, such as MRI machines.

HP: What projects are you currently working on?

CS: Acentech works with a broad range of clients and projects, from shaping the sound of a symphony hall to creating corporate video conference rooms to managing the noise and vibration of factories and products. Currently, we are working on projects for the new headquarters of the United States Institute of Peace, which will be located on the National Mall in Washington, D.C. and the Crystal Bridges Museum of American Art in Bentonville, Arkansas. One of our most notable projects currently underway is a new symphony hall for Puerto Rico, Sala Sinfonica Pablo Casals, in San Juan, due to open in spring 2009.

HP: Describe one of the firm's most interesting projects.

CS: One of our favorite projects is right here in Boston: the Museum of Fine Arts, Boston's major addition and renovation, which includes enclosure of the former open-air East Courtyard. The architect had created a compelling aesthetic design for the new atrium, with glass and stone wall surfaces and a glass ceiling: all hard surfaces that would reflect sound. We used auralization to hear how this atrium would sound during a large banquet event, with amplified speech and a live music ensemble. This exercise resulted in a decision to incorporate a large amount of acoustical absorption into the space to control activity noise and improve intelligibility. As the design progressed, this acoustical requirement was coordinated with the need for solar heat screening of the glass ceiling. Acentech assisted the architect in selecting a translucent, sound-absorbing ceiling material that accomplished both goals. In this project, auralization helped the design team address functional issues, including acoustics, while honoring the architect's original vision for the space.