



THE NEW SOUND OF NEWS

SH Acoustics' Innovative Audio and Acoustic Technologies Help Set New Benchmark for Ultimate Visitor Experience at Newseum in Washington, DC

April 3, 2008 – Washington, DC – When **The Newseum** opens on April 11, 2008, it will likely be applauded as the most technologically-advanced interactive facility ever to embrace the museum visitor. And it's the vision and capabilities of companies like **SH Acoustics** of Milford, CT, the project's audio and acoustic consultant, along with the advent of new and more advanced sound technologies, that have helped present today's museum exhibit producers with almost limitless opportunities to utilize sound as a visitor experience-enriching medium.

The Newseum—the new 250,000 square foot museum of news in Washington, DC—will offer visitors an experience that blends five centuries of news history with up-to-the-second technology and an unprecedented offering of sophisticated interactive, hands-on exhibits. Seven levels of galleries, theaters, retail shops and visitor services rise above The Great Hall of News, a 90-foot-high atrium that showcases breaking news. With 14 major exhibit areas, 15 theaters, two broadcast studios and more than 130 interactive stations, the Newseum has essentially set a new benchmark for the ultimate 21st century museum visitor experience. It is probably the first museum ever to use cutting-edge audio, video and acoustic technologies to deliver almost every aspect of the visitor experience.

To address the challenges, the Newseum brought in renowned museum sound specialists **SH Acoustics** to work with the design team. The company's president, Steve Haas, has been the driving force for many major museums over the last 18 years, and is considered one of the foremost experts at creating unique environments and customized technologies for complex, multi-dimensional museum exhibits. He has worked with the Museum's exhibit designers, Ralph Appelbaum Associates, on a number of prestigious facilities including the **US Holocaust Museum**, the **Country Music Hall of Fame** and the **National Constitution Center**.

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Haas and his team rigorously coordinated their efforts with the museum designers, Polshek Partnership and Appelbaum, and also worked side by side with the project's systems integrators Electrosonic Inc. and Communications Engineering Inc. to ensure that every aspect of the audio technology was properly implemented and tuned to perfection. In addition, as is the firm's customary approach, SH Acoustics



worked closely with the various teams of media producers—on the Newseum staff and at outside firms—to ensure that the content of the soundtracks that are produced and mixed in the “studio” translate well to the various acoustic environments throughout the museum.

Says Haas, “Meticulously controlled, creatively optimized sound is an essential and powerful element of the museum experience. It enables the exhibit to tell a story, recreate a moment in history and even transport the visitor to another virtual time and place. An important aspect of this is to ensure that sound reaches the visitor’s ears in a contained and controlled way, and that it doesn’t intrude on other visitors or unrelated exhibit areas.” Fostering an enveloping sound environment in the towering open space of the 90-foot high atrium of the **Newseum’s Great Hall of News** without having excessive sound bleeding into other areas, was one such challenge. Haas’ solution was to provide steerable line array loudspeakers, which would deliver the sound as close as possible to the audience. Working with Dakota Audio, Haas designed a network of slimly-profiled speakers to precisely control how much sound is generated, and in what direction, based on the location of the performance or program source. These highly sophisticated loudspeakers provide a kind of “pancake” effect—the sound is effectively kept within the height of the loudspeaker—which offers wide horizontal, but narrow vertical coverage that feels enveloping, yet not overwhelming. In addition, to provide sound coverage to visitors utilizing the series of bridges that overlook the atrium, Haas specified over 100 different small, low-level, close proximity speakers, which were unobtrusively concealed in the bridge floors.

For the **NBC News Interactive Newsroom**, where visitors can immerse themselves in the many roles required to bring the news to the public—photojournalist, editor, reporter or anchor—the challenge was to provide proximity sound at each of the nearly 100 interactive stations that would allow an enveloping audio experience for the user, but wouldn’t intrude on neighboring stations. Haas and Dakota Audio developed miniature line arrays that were carefully positioned horizontally (rather than vertically) on either side of each station’s interior, to provide a stereo feel, yet keep the sound narrow and contained.

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In addition to the galleries and ancillary spaces, Haas worked on the audio and acoustics for the Newseum's multiple theaters, including the five Sidebar Theaters within the 8,000 square foot **News Corporation News History Gallery**, the Newseum's largest gallery.

To create an intimate experience for audiences within each of the separate, but not completely contained, theaters radiating off the main area, Haas utilized a method called "enhanced stereo," which allows for the primary sound to be delivered very "close to people's ears" so that listeners experience fullness of sound without loudness. With all speakers concealed in the walls to eliminate any visual source reference, the perception that the sound is emanating from the source of the video is greatly enhanced. With thin walls, multiple adjacent spaces, and limited space, big traditional full-range loudspeakers were not an option within the theaters. SH Acoustics' unique solution was to base all audio sources on activated sound technology; even architectural panels were transformed into sound radiators, including the actual screens.

The unique **Robert H. and Clarice Smith Big Screen Theater**, which houses a 100-foot wide screen and utilizes up to five different projectors to present produced media shows, live breaking news stories, and events, presented a very complex set of challenges: how to delivery the sound in an enveloping manner in a room with a 100-foot expanse, prevent sound from bleeding into any of the neighboring galleries, and make the sound perceived as "pulling" from the screen. To accomplish these goals, Haas used the proximity approach, the largest scale of this methodology he's ever undertaken, which involved installing dozens of very small (2" thick) speakers, concealed in the floor below a walkable grating, throughout the seating area.

Overall, audio and acoustic design measures for all the Newseum exhibit spaces were carefully devised to completely integrate with the environments and blend with architectural elements. Visitors to the Newseum are virtually "freed" from the potential distraction of unsightly loudspeakers and acoustical treatment, and can revel in what is truly a completely enveloping sonic experience. "Our goal was to have the multi-sensory, emotional impact of each exhibit's content be as seamless and as engaging as possible—presented flawlessly, and without being obtrusive," says Haas. "With such a breadth and diversity of exhibit spaces, effectively blending the audio and acoustic technology with architectural and aesthetic requirements was without question our primary mission."

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