

August 22, 2005

---

## **ExitPoint™ Case Study**

Children's Museum of Denver



## **ExitPoint Goes Live at Children's Museum of Denver**

*The installation of System Sensor's ExitPoint™ directional sound system at the Children's Museum of Denver has brought life safety and education together in this kid-friendly learning environment.*

The Children's Museum of Denver takes pride in offering surprises around every corner amidst its interactive displays, providing playful learning experiences for children ages 0-8 years old. But museum management realized that the facility's fun-filled mazes of displays, spanning three floors, could make it difficult for visitors to find an exit in the event of a fire.

Per an agreement made with the City of Denver, the museum was allowed to open with just a basic fire detection system. The museum would, however, eventually need to upgrade its fire and life safety systems to compensate for the lack of an adequate water supply and fire department access. When the time came to make good on this agreement, museum management enlisted the help of System Sensor and several Denver area installers and consultants, among others, to get the job done.

The museum enhanced its fire and life safety system with the addition of duct and open area detectors, manual pull stations at its exits, System Sensor horns and strobes, and a Notifier intelligent fire alarm control panel with a remote annunciator, which has a zone map of the building for fire department use.

Surrounding all this is System Sensor's ExitPoint directional sound system, which, in the event of an emergency, is activated in conjunction with the building's other fire and life safety systems for enhanced personal protection. ExitPoint deploys a series of sounders that emit non-verbal cues to lead people to an exit; evacuees intuitively know to follow the sounders to safety. The system operates very effectively in all conditions, particularly in smoke-filled environments where visual signage would be difficult, if not impossible, to see.

Kitty Bond, the museum's vice president of business operations who spearheaded the system upgrade search, was especially drawn to the opportunity to install System Sensor's ExitPoint directional sound system. "ExitPoint is extremely complementary to our system," she says.

### **Why ExitPoint is a Good Fit**

According to Dave Boswell, director of business development for Hughes Associates, Broomfield, Colorado, the engineering firm for the project, ExitPoint is a good fit for the type of populations the museum serves. "The nature of the museum lends

itself to this type of technology by the fact that you've got a transient occupancy," he says. As many as 90% of the people in the museum at any given time aren't familiar with the building's layout, he estimates, so giving occupants clear, easy-to-understand exit cues is a real benefit.

Serving people with special needs also emerged as a plus for ExitPoint. "One of the major criteria for recommending ExitPoint is that it would clearly enhance egress for people that were visually impaired," says Boswell.

During one of several tests conducted at the museum one day, a blindfolded firefighter easily found his way down a staircase to a main-level exit when the ExitPoint system was activated. In other demonstrations, test subjects made their way around numerous partitions set up in a room to find an outside exit.

"It was very impressive because everyone would go right to the sound," says Bond, who witnessed the on-site testing.

It took those tests to make believers out of representatives from the City of Denver and some of the local fire and building officials who had never heard of ExitPoint and were skeptical about its effectiveness. "They were all suitably impressed," says Boswell. And despite the City of Denver's initial reluctance, "Now that it's done, they're very pleased with it," he adds.

Although the local officials and the city were sold on ExitPoint that day, Denver's chief fire protection engineer voiced his concerns that ExitPoint might interfere with the evacuation signal for the museum's fire alarm system. None of the various research studies conducted on ExitPoint have found the simultaneous sounding of ExitPoint and a building's fire alarm system to be incompatible or confusing to evacuees. Nevertheless, Hughes Associates and the City of Denver agreed to a compromise: ExitPoint would go on an independent circuit.

"We designed it such that it was on a separate circuit so if the fire department wanted to, it could silence ExitPoint without silencing the fire alarm signal," says Boswell.

Larry Cleveland, president of Fire Detection Systems LLC, Westminster, Colo., the engineered systems distributor that installed ExitPoint at the museum, said that although having ExitPoint on a separate circuit is not necessary for its operation, it could have its advantages. For example, when people hear a fire alarm, they're often complacent at first.

Cleveland says the System Sensor horns and strobes do a good job of alerting people that they need to evacuate the building, which can be an especially difficult task with children who have trouble disengaging from their activities. Although the museum has chosen to have ExitPoint and the fire alarm go off simultaneously, having ExitPoint on an independent circuit does enable the option of programming it to kick in seconds after the initial attention-getting alarm has started sounding to provide occupants with critical directional information.

### **Installation Proves to be a Challenge – and an Opportunity**

The installers quickly found out that installing ExitPoint in a museum is a bit different than an office building, because the sounders needed to fit in to the museum environment. That meant that sounders could not be positioned in aesthetically or functionally awkward places that would detract from the displays.

The installation team had to make sure the ExitPoint sounders were on permanent, structural walls rather than on the many temporary walls that are used for displays and are frequently moved throughout the building. Because the sounders emit sound only and do not need to be seen to operate properly, the installers were able to find practical, yet unobtrusive positions next to or within exhibit areas. Sounders within the museum's staff-only areas were installed in more typical positions.

The learning environment of the museum opened up unique possibilities for informing the public about ExitPoint and what they should do in the event of a fire emergency. The museum's Fire Station No. 1, an exhibit area that aptly covers fire education and allows free play with firefighter apparel and a real fire truck, now features an extra, freestanding ExitPoint sounder that visitors can test. A sign next to this demonstration-only sounder tells visitors how the ExitPoint system works and that a live version of the system is installed in the building. The museum plans to put another demonstration unit in a display box by the front entrance.

Cleveland, who was one of those early ExitPoint skeptics, now speaks enthusiastically about the life-saving potential of the system, especially for the blind. "This is a bigger deal for the blind than strobes are for the hearing impaired," he says, "mainly because the hearing impaired can see the excitement and people fleeing. A blind person can't."

The nominal extra cost to install ExitPoint along with a typical fire alarm system is money worth spent in any application, says Cleveland.