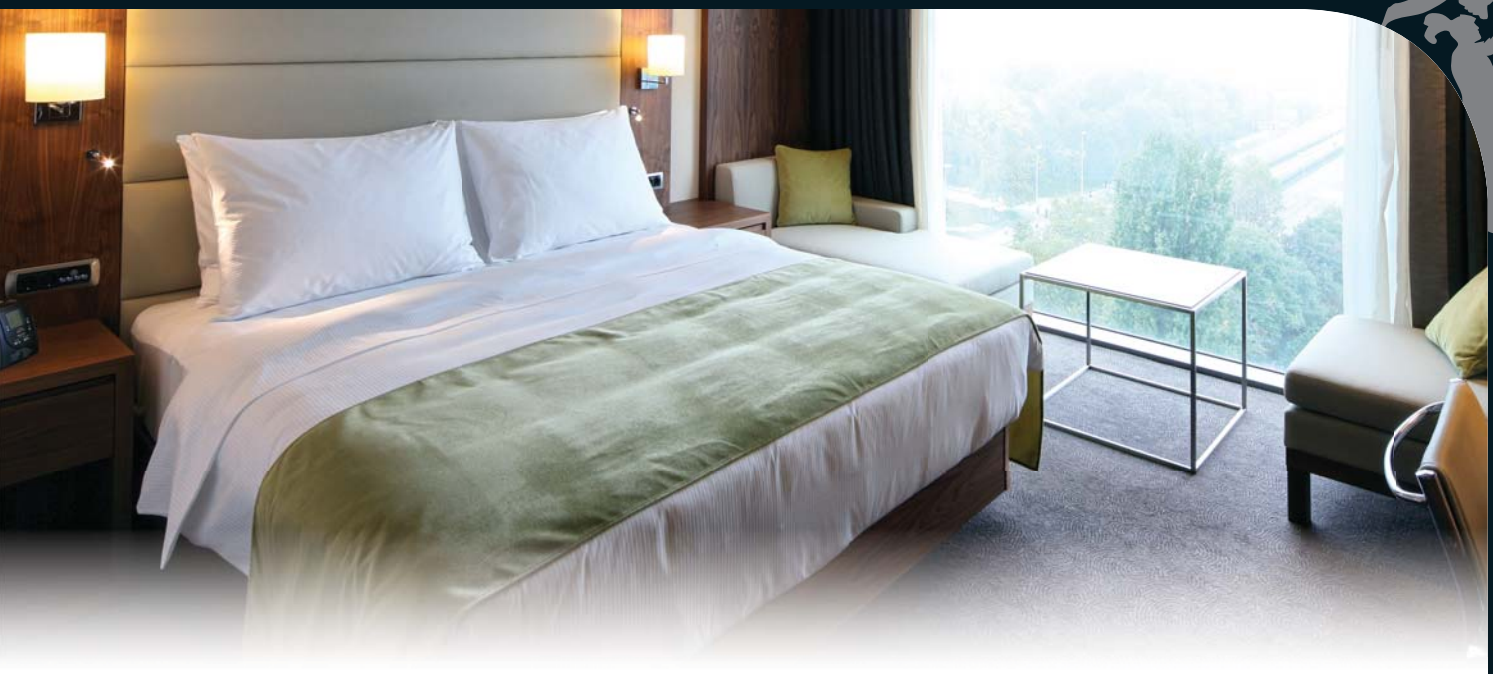
Case Study



Historic Dallas Hotel Gets a Fire Alarm System Makeover

Background

Known for offering big comfort and style, SpringHill Suites Dallas Downtown/West End delivers on the motto "Everything is bigger in Texas." Located in the historic west end of downtown Dallas, the 10-story hotel features 148 guest rooms with a sophisticated and contemporary cowboy ambiance. The hotel recently needed a new fire system panel, which in turn required the entire fire system to be brought up to current code.

Challenge

Fire and Life Safety America (FLSA) out of Euless, TX, was asked to evaluate the existing fire panel, but the City of Dallas requires fire systems to be brought up to code when any component is replaced. Because the City of Dallas recently adopted the 2013 Edition of NFPA 72 and the IBC 2012/IFC 2012, it was necessary to upgrade the voice system and notification devices in addition to the fire alarm control panel.

"The City of Dallas's new building code requirements stated that with any fire system upgrade or replacement, the entire building fire system has to be brought up to current code," explains Carl Ball, Alarm and Special Hazards Sales and Design for FLSA. "Recommending the replacement of the existing, obsolete fire panel triggered this requirement to bring the entire building up to current NFPA code."

This fire system upgrade actually made Springhill Suites one of the first buildings in Dallas to comply with the NFPA 72:2013 low-frequency requirements for sleeping spaces for protected premise fire alarm systems.

The new requirement covers how to alert sleeping individuals in commercial sleeping areas, such as hotels. The requirement specifies that an audible device in the space must produce an alarm tone at a lower frequency centered on 520 Hz, and must be of a square wave form. NFPA research found that a lower frequency – specifically 520Hz and of a square wave form – was more effective in waking individuals, including those with mild to severe hearing loss. It's important to remember that fire alarm systems and smoke alarms are just as valuable for people when they're awake as they are for people when they're asleep.

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Solution

In order to meet this important code requirement, SpringHill Suites chose the Silent Knight-Farenhyt IFP 2000ECS intelligent fire alarm control panel with voice system and corresponding UL low-frequency listed devices, such as Silent Knight Farenhyt amplifiers with incorporated low frequency tones, System Sensor high-fidelity speakers and speaker strobes, and Farenhyt intelligent low frequency sounder bases.

"To meet the new low frequency code requirement we had to have low frequency sounder bases on the detectors in each room, as well as speakers," says Dennis Piekarski, ASH Operations Manager at FLSA. The low frequency sounder bases are designed to be aesthetically pleasing, making them ideal for applications like hotels where appearance is critical.

Two sounder bases were installed in each room – a total of 296 low frequency sounder bases – which required careful wiring consideration. To cut down on some of the conduit without interrupting wire requirements and circuit integrity, the FLSA fire and life safety system design called for the placement of a power supply and an amplifier on each floor.

"The system was designed so that if a detector in an individual room went into alarm, only the sounder base in that room will activate. If an alarm condition is triggered by any device in the common areas of the hotel, the voice system activates on the floor of the alarm as well as the floor above and below the alarm. The system also has capacities of an 'all call' manual page throughout the entire hotel, including all guest rooms and all common areas," Piekarski adds.

Results

Having a power supply on each floor helped to distribute power throughout the building. "The low frequency bases consume more power than standard bases," Ball explains. "When there are many in a building, the main design criteria is to be aware of how much power they pull collectively. In this case, having a power supply on each floor worked out really well."

System Sensor and Silent Knight-Farenhyt's low frequency solutions worked well for this project because they provided the required audible notification while also being easy to install. Due to the quantity of devices, ease of installation was a critical feature in this case. The System Sensor low frequency sounders, sounder strobes, and sounder bases meet the NFPA 72®: 2010/2013 low frequency requirements for commercial sleeping spaces, and they can be interconnected with our non-low frequency sounders to provide synchronization throughout the notification zone.

What's more, when the hotel installed a sprinkler system in 2011, the corresponding sprinkler piping was placed in the soffits. "Although it posed a design challenge, this was the perfect space to run our wires so we wouldn't have to run exposed wires and conduit throughout the building," clarifies Piekarski, "making it more aesthetically pleasing."

"Even though there was a learning curve for the planning review because this was one of the first low-frequency jobs in the city of Dallas, it was straightforward with how we designed it and how it was reviewed." Piekarski concludes. "The hotel owners and fire marshal were impressed that we had the ability to have low frequency throughout the building."

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