



by Honeywell

E3 Series® EVAC Protects Chicago Landmark

The Chicago Temple Building, located at the corner of West Washington and North Clark streets in Chicago proper, stands 568 feet tall against the city skyline. This magnificent skyscraper has been home to the First United Methodist Church of Chicago since 1924. A unique composition of worship sanctuaries, the pastoral residence and several floors of offices makeup this multi-use building.

Due to recent changes in local codes and extensive construction within the Chicago Temple, its owners were required to bring their skyscraper up to current fire code.

“The City of Chicago began requiring EVAC (Emergency Voice/Alarm Communications) systems for high-rise buildings after a fire next door in the Cook County building. That fire caused extensive damage and much worse, people died,” says Ken Creed, Owner and President of Fire & Security Specialists of Alsip, Illinois.

Previous Chicago codes allowed fire alarm systems within historic buildings such as the Temple to be grandfathered. At that time, older systems need only be maintained to function as originally intended.

According to Chicago Temple’s Operations Manager, Rich Dougan, “Changes in the municipal code caused our fire alarm to lose its grandfather status.”

The Temple’s previous system was simply a 120 Volt AC unsupervised, manual evacuation alarm, originally installed more than 50 years ago. However, to meet city fire code, Dougan had to take action.

Choosing the Right System

Because of the enormity of the task, based in part on the size of the building, the job required an addressable system capable of a large number of points or addresses.

For ease of maintenance, analog addressable systems allow fire technicians to locate the source of a trouble or supervisory

condition quickly. Additional system data enables technicians to identify oncoming problems before they become serious, greatly reducing false alarms. To the owners of the Chicago Temple Building, this means lower operational costs.

The EVAC system chosen for this installation was that of the E3 Series® Expandable Emergency Evacuation system, manufactured by Gamewell-FCI. Its modular design enabled Creed’s fire technicians to build the system as large or small as needed while allowing for easy expansion or reconfiguration down the road. This can be especially helpful when the AHJ (Authority Having Jurisdiction) requires additional protection when future remodeling takes place.

The selected system accommodates an almost limitless number of sensors, amplifiers and relays, while using a minimum number of conductors. This greatly reduces the E3 Series’ overall physical footprint across the facility, preserving to some extent, the original ambiance of the structure. Less wire also reduces the upfront material and labor costs.

The E3 Series’ network utilizes digital signaling technology that requires only one UTP (unshielded twisted-pair) of conductors for network communication up to 3,000 feet between nodes. One pair of fiber optic cables can also be used, which is helpful when working in difficult radio frequency interference (RFI)-



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prone environments. This single pair of wires is capable of integrating virtually every facet of the system in the Temple--from firefighter phones to elevator control--detection to notification.

According to Creed, the E3 Series system features ARCnet™, a high-speed data network over which control and sensor data, as well as bi-directional audio communications, are transmitted. The system supports up to 25,000 devices with up to 64 nodes comprised of modules, such as power supplies, voice controllers and addressable relays. Even the alarm control panel is considered by the system to be a module device that occupies one node.

The E3 Series relies on true peer-to-peer, token ring passing network technology. The system supports style 4, 6 or 7 network configurations, which provides Creed with greater flexibility and versatility than traditional technology can. These configuration varieties also make for a more “survivable” system, meaning if part of the system’s panels or wiring are damaged, the remaining parts can continue to function properly.

“We installed automatic smoke detection, elevator recall, fireman’s phone, sprinkler supervisory and voice evacuation,” says Creed. “The ability to use a few pairs of wire for sensor data as well as voice and other communications is what makes the E3 Series system so attractive, especially in large, high-rise situations like the Chicago Temple Building.”

According to Dougan, sprinkler systems are only present in the basement’s theater and the 22nd-floor attic.

“Going forward in the project, all floors and all public areas will eventually be sprinkled. Monitoring will be done by the fire alarm system,” says Dougan.

Overcoming Environmental Challenges

Installation of fire alarm system components throughout the Chicago Temple Building was no easy task.

“The building itself is made of clay tile with marble applied over that. There are no accessible open walls through which to install wires and the like,” says Dougan. “And there is no dry-wall over that to hide the wiring in.”

By utilizing the E3 Series’ two-conductor wire for the system’s SLC (signaling line circuit) and backbone, Creed was able to

save the client a substantial amount of money. Traditional technology would have resulted in more cables, larger conduits and extensive architectural damage.

“We ran conduit in the stair towers and atop the hallways,” says Dougan. “There is no doubt that using a single, twisted-pair conductor for almost everything saved us a lot of time and money.”

A Familiarity with Fire

As the fourth building to sit on that exact spot, the Temple is no stranger to the dangers of catastrophic fire. Its most recent predecessor was a four-story, mixed occupancy building constructed in 1858. Less than 12 years later, it was destroyed in the Great Chicago Fire, but was soon rebuilt.

Located at 77 West Washington Street in Chicago, the Temple sits next-door to the Cook County Administration building where, in 2003, a devastating fire started in a 12th floor storage closet claimed the lives of six office workers.

This tragic event led the City of Chicago to require both sprinklers and a fire alarm EVAC system in all high-rise buildings throughout the city. Prior to this, only high-rises constructed after 1976 were required to have a fire alarm EVAC system.



E3 Series® Voice Evacuation System