



by Honeywell

E3 Series® System Protects Historic Statehouse, Exceeding State's Strict Fire Standards

RI (Rhode Island) has historically been one of the most rigorous states in the nation when it comes to fire protection. Despite this track record, 100 people lost their lives in a tragic nightclub fire in West Warwick, RI, in 2003. Since that time, RI fire officials and lawmakers have worked to further tighten the state's stringent fire protection laws.

Perhaps the most notable of RI's recent regulation changes is the elimination of the infamous "grandfather clause" that so often has permitted an existing facility to remain out of compliance despite potentially serious code infractions. The aim of RI lawmakers and fire protection officials has clearly been to reduce the likelihood of a repeat performance of the Warwick fire.

Among the many facilities across the state that have had to bring their buildings up to code is that of RI's own Statehouse, located in Providence.

More Than a Government Building

Constructed between 1895 and 1904, the RI Statehouse is listed with the National Register of Historic Places, based in Washington, D.C. Serving as the seat of state government, it's considered an important monument and a significant piece of historical architecture on the Providence cityscape. For these reasons, state officials had to ensure the right life safety system was selected for the job.

Since the original Statehouse fire alarm system consisted of only a handful of manual pull stations and a basement-only sprinkler system, an upgrade was long over due. "We worked with the Rhode Island Historical Preservation Commission, who has jurisdiction over material changes to historic buildings. We had to assure the preservation of the aesthetics," says Thomas Wright, Assistant Director for special projects at the RI Statehouse.

As with any project of this size, a bid package was developed by an architectural-engineering firm with a number of fire protection companies and fire equipment suppliers submitting proposals. "The job was bid by electrical contractors and they received equipment pricing from many suppliers," says Steve Cunha, Senior Division Manager with Cintas Fire Protection of Pawtucket, RI. "The EC (electrical contractor) who won the bid was Robert F. Audet Electrical from East Greenwich."

According to Cunha, the lead installer for Robert F. Audet was not pleased with the fire alarm equipment selected by Statehouse officials. "The lead

installer went back to state planners and told them that he wanted to use the E3 Series® because of its flexibility and the two-wire network configuration," says Cunha.

After careful consideration, state officials complied with Robert F. Audet's request. The Statehouse's new E3 Series system includes analog addressable smoke and heat detection, intelligent projected beam detectors, addressable manual pulls, and an emergency alarm/communications system to assure an orderly response to emergencies by all occupants.



Advanced Communication Components

There were many inherent features of the Gamewell-FCI E3 Series fire alarm system that attracted state officials. The EVAC (Emergency Voice/Alarm Communication) system and use of network technology to transport signals from the fire alarm control panel to each user interface or NGA (network graphic annunciator) installed in the facility, are just a few of the E3 Series' most favorable elements.

The E3 Series EVAC system enables custom announcements on a zone-by-zone, floor-by-floor basis. The system allows for pre-recorded messages in specific areas when appropriate, a solution sought by building officials. The audio portion of the voice system can also be used to send out non-emergency, real-time messages. Therefore, ensuring a more organized and safe evacuation when a dangerous situation, such as a tornado alert, begins to unfold.

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The E3 Series' NGA offers better command and control compared to other systems that rely entirely on a keypad interface. An 80-character LCD display with an intuitive touch screen makes the NGA by Gamewell-FCI a much more user-friendly product.

For users not entirely familiar with the system's operation, the NGA is programmed to automatically display enhanced, easy-to-follow instructions in alarm situations. Capable of displaying more than 500 different text messages, the NGA is built to provide building managers and first responders critical alarm information such as the location of the alarm and specific emergency contacts. The NGA can also notify end users of false alarms or any system maintenance that needs to be done.

Reliability and Survivability Enhanced

The E3 Series system features a high-speed data network called ARCnet™ over which control and sensor data, and audio communication travels. With ARCnet, each pair of wires is isolated on a node to node basis, thus increasing system survivability during catastrophic events.

Behind the Rhode Island E3 Series' ARCnet data connection are two intelligent signaling loop circuit controller boards that contain a 32-bit RISC (reduced instruction set computer) processor. The 32-bit RISC processor boosts overall reliability during day-to-day use.

Each intelligent loop interface board provides two SLCs for a total of four. Each SLC has a potential capacity of 159 addressable detectors and 159 addressable modules. In addition, each dual-SLC processor board contains two notification appliance circuits, a local energy city box output, auxiliary relay functions, and an auxiliary power supply output.

To assure that the Rhode Island Statehouse E3 Series fire alarm system continues to operate in a code-compliant manner, the same intelligent dual-SLC/NAC processor board offers a number of relay outputs, such as alarm, supervisory, and system trouble.

For the EC, the E3 Series is the next thing to a one-size-fits-all fire protection solution because of its high degree of scalability and component-style architecture. The line consists of three different cabinet sizes along with a wide array of printed circuit cards, allowing for easy customization at the head-end.

According to Cunha, all of these reasons made the E3 Series Gamewell-FCI product an ideal fit for the RI Statehouse project.

Less Wire Means Less Harm

In years past, before network technology entered the fire alarm system arena, the physical impact of such a sizeable installation on an historic facility was enormous. The electrician's intimate knowledge of the facility, as well as the simple networking capability of the E3 Series fire alarm system, made it possible to turn what at first looked like an impossible job into a success story.

Unlike those conventional systems of yesterday, the E3 Series does not require hundreds of large gauge conductors. Instead, the network-based technology that distinguishes the E3 Series from so many other makes kept the number and size of conductors to a minimum. This helped the EC with the installation aspects of both horizontal and vertical riser cables throughout the structure.

"With most other systems you would have to run a larger riser for network controls, audio and live paging," says Cunha. "With the E3 system you can run all of this across the same pair of wires, reducing both conduit size and the amount of copper wire used."

A good part of the challenge not only involved the installation of new fire pulls, but new NAC (notification appliance circuit) devices as well. "Prior to the installation of this new fire system we had somewhere around 200 devices, but now we have more than 800," states Wright.

The preservation of this historical landmark was of utmost importance, but protection of life and property was always the primary objective.



E3 Series® Voice Evacuation System

Part No. 9020-60313 1007 2K