

## Critical Life Safety Systems for Mission Critical Facility

A 13-story Atlanta mid-rise with high-security office space, training and data centers – owned by a confidential, mission critical client – is now outfitted with an E3 Series fire alarm and emergency communication system (ECS) from Gamewell-FCI that includes an emergency phone system on its own, dedicated fire alarm circuit for enhanced survivability.

The robust system incorporates 31 “areas of refuge” or locations equipped with a two-way emergency telephone system to enable occupants to communicate with two redundant security command centers, one onsite and one offsite. Each of the 31 areas is also equipped with a standard, high-rise fire fighters telephone system to facilitate communications between first responders throughout the building during an emergency.

Dealing with an obsolete, legacy fire alarm system and a separate, standalone ECS, the building owner’s property management company, Childress Klein Properties, Inc., turned to local Gamewell-FCI distributor Critical Systems, LLC, to help them find a new, comprehensive solution. By code, the new system had to meet the latest UL 864 9th Edition *Standard for Control Units and Accessories for Fire Alarm Systems*. Childress Klein sought a solution with a high level of functionality, backed by a solid warranty; intuitive displays for monitoring and control; and intelligent peripheral devices for fast, accurate detection of smoke.

### Intuitive Information

With the ability to quickly access and interpret data from the fire alarm system as a primary objective of this mission-critical facility’s life safety response plan, the highly-intuitive nature of the system’s Network Graphic Annunciator (NGA) was a key ingredient of the upgrade.

“The NGA color graphic display walks the user through every step of the process when responding to an alarm, supervisory or system trouble event,” explains Bill Van Loan, Owner and CEO, Critical Systems, LLC, Marietta, Ga. “The NGA is also equipped with a 512 customizable message center that provides additional information to first responders beyond a standard fire alarm and emergency communication system.”

Tied to the E3 Series system is a Honeywell fire suppression panel, controlling the FM200 waterless fire suppression system that covers



two rooms within a data center. The NGA displays various stages of the FM200 system, as well as instructions on what to do in the event the suppression system is discharged. For example, the NGA is programmed to announce the following pre- and post-activation stages of the FM200 system covering the sixth floor data center:

- Data Center FM200 Stage 1 alarm activation alert
- Data Center FM200 Stage 2 alarm activation alert, given at 30-, 20- and 10-second timed intervals until FM200 system discharge
- Data Center FM200 system abort activation alerts are also communicated when discharge is ordered to stop

Not only is Childress Klein Properties, Inc., pleased with this functionality, but the local Authority Having Jurisdiction, who subjected the system specification to a stringent and comprehensive fire alarm plan review, was also impressed.

(continued on back page)

“Cobb County fire marshals and fire fighters LOVE the E3 Series systems because the NGA tells them exactly what they need to know and is entirely intuitive,” reports Van Loan.

Aiding in the system installation was the fact that Critical Systems could take advantage of the existing fiber optic infrastructure, which was then re-used to interface the redundant NGA and two-way emergency telephone communication system. The fiber optics also offered survivability from water and inherent lightning or power surge damage, as well as supporting faster information transfer across the network.

In addition to the existing fiber optics, the fact that the E3 Series system is easy to install was of great benefit to the building owner being that their tenant is a highly sensitive company that serves world-wide clients and houses a world-wide incident response center.

“The ease of the E3 installation allowed us to keep the existing system running while installing a non-invasive E3 system behind the scenes and maintaining complete building protection throughout the change over and upgrade,” relates Van Loan.

To enable the building owner to periodically test the system components without disruption to its tenants, Critical Systems created by-pass switches to temporarily disable/enable certain system components. This includes input points for weekly fire pump and generator testing, and system output points for speakers, strobes, elevator recall, door holders, fan shutdown, dampers, smoke control, pressurization fans and fire shutters.

## Detection and Communication

High-fidelity speakers were installed to ensure a high level of intelligibility or clarity of communications throughout this critical facility. Taking advantage of the E3 Series system’s fully-digital voice gateway and remote amplifiers, the speakers integrated easily to ensure the clarity of all standard and customized fire alarm evacuation and mass notification messages. This includes high-rise evacuation, manual evacuation, all clear, false alarm, fire alarm and fire drill messages, as well as tornado alert, weather alert and building threat/lock-down announcements.

The fire alarm upgrade also comprised more intelligent addressable devices, particularly in the area of smoke detection. Utilizing multi-criteria detectors, made to monitor four different elements of smoke and flame - smoke, CO, light/flame and heat - nuisance alarms were

greatly reduced. Built-in drift compensation enables each detector to automatically adjust to minor fluctuations in its environment, such as dirt build-up and temperature changes, to avoid initiation of nuisance alarms. These same smart detectors also send maintenance alerts to facility management when it is time to be cleaned or changed, before erroneously tripping an alarm.

Since its commissioning, the system has played an integral role during a number of emergencies, one being when the smoke was detected from a fire caused by one of the building’s supplementary system power supplies.

“The system was also used to initiate a shelter in-place live voice announcement after the activation of the pre-recorded tornado message to alert the occupants of the inherent danger during the recent tornados that ripped through Georgia,” relates Jack Kennedy, Director of Engineering Services, Childress Klein Properties, Inc., Atlanta.

All together, the devices tied into the E3 Series system include manual pull stations, area smoke detectors, duct smoke detectors, fire pump, sprinkler water flows, sprinkler supervisory valves, FM200 fire suppression, fire doors, elevator recall, access control, smoke control, stairwell and elevator pressurization fans, smoke dampers and fire shutter roll down doors.

“The E3 was the ideal choice due to the fact that the system features and benefits met all of the facility’s current needs, in addition to the system’s ability to scale using building block technology for all future expansion and upgrade capabilities,” states Kennedy.



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