HVAC SPOT AV MODULES

Case Study: **360 State Street**

Green Building Integrates Fire and Automation Systems

Project:

360 State St.
New Haven, Conn.

Multi-Story Residential
32-Story
700,000 Sq. Ft.
500 Residences
Green Construction

370

Smoke Detectors

840

Speakers, Speaker Strobes

15

Duct Smoke Detectors

330

Monitor & Relay Modules

360 State Street — Connecticut's greenest and largest residential development — is the first new major residential construction in New Haven in over 15 years.

Situated just three blocks from both Yale University and historic Wooster Square, the 32-story, 700,000-square-foot building offers 500 rental residences in its 27-story tower. Occupancies range from studios to three bedroom apartments. Other features include a parking garage, an early childhood education center, and 28,000 square feet of retail space that will include a grocery store.

On the way to becoming a certified LEED® Platinum Plan, the building is the first of its kind to be recognized by the U.S. Green Building Council in the Pilot Neighborhood Development Program for exemplifying the principles of smart growth, urbanism and green design prior to, during and post-construction.

As part of this pioneering project, FIRETECH Engineered Systems of West Haven, Ct., was responsible for designing and installing the complete fire and life safety system. In addition to being sensitive to the green building demands, FIRETECH understood the relationship between a fire and life safety system and complete building automation.

"The challenge was to bridge the gap between the building's automated system, which is a typical sustainable design element, and the fire and life safety system, while meeting model

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building and fire code requirements," says Adam Querker, VP Engineering of FIRETECH.

A creative, integrated approach was used to design the fire and life safety system for complete integration with the building automation system. FIRETECH accomplished the highest level of protection by having a fire panel with corresponding notification devices on each level of the building.

"In order to integrate the most reliable system, the design was broken down to have a panel on each floor, allowing the system to go live one level at a time before moving on to troubleshoot the next level. On the back end, this plays into easy servicing, knowing exactly where the fault occurs," says Querker.

In a complex, modern, multi-use building such as this, any changes to the building's architectural design is a significant factor. "When a design change occurred, such as when the ceiling changed to use soffits, the system parameters and detector placement was affected," says Querker.

"That was the great thing about the intelligent detectors," continues Querker. "It allowed us to go from one position, tweak our design calculations and keep on track. Hands-on interfacing to the building automation system alleviated these demanding instances."

System Sensor devices, as well as NOTIFIER® systems, allowed a very smooth transition in getting the fire and life safety system online and ready. In all, FIRETECH installed approximately 840 System Sensor speakers and speaker strobes, 370 smoke detectors and 15 duct smoke detectors.

Because the building is fiber-optic based, FIRETECH built in multiple points of control as an added backup to the system; one in the basement and one on the roof. "Survivability of system integrity was accomplished with redundancy so that all systems will still operate in a fire or emergency event," says Querker.

An added bonus of integrating with the building automation system was the inclusion of a digital audio network for transmitting fire personnel messages. This enables emergency responders to interface with building occupants as well as firefighter access. "For example, due to all systems being integrated, a door lock control can be programmed to happen during certain emergency situations, like containing a single-floor fire," he explains. "This allows clear egress and ingress routes in an emergency so that people can exit safely and EMS teams have a direct route to the incident."

Besides being the second-tallest building in downtown New Haven and the city's largest residential building, 360 State Street incorporates a spectrum of energy efficiency measures, including the largest fuel cell to operate in a residential building worldwide. The building's performance is tracked in real-time and available publicly via a web portal and lobby display, showing electric, natural gas, renewable energy, and water consumption patterns. Utilizing the latest innovations in smart grid technology, tenants will be able to track their own water, electric and thermal energy usage.

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>
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