

Project Profile Marriott Marquis



NEW YORK MARRIOTT MARQUIS

Situated in the heart of New York City's Times Square and the Broadway Theater district, the New York Marriott Marquis has served as a major landmark since its opening in 1985. Fifty-one stories high (53 floors including below-ground levels), with New York City's only rotating restaurant at its peak, it features a total of six restaurants and lounges, a major Broadway theater (Marquis Theatre), a built-in parking garage and the largest enclosed atrium in the United States. To offer guests the most advanced technology in life safety systems, the Marquis collaborated with fire protection consultants from Rolf Jensen and Associates Professional Engineers, P.C., (RJA) on the design of a new addressable system for the entire facility.

 **NOTIFIER**[®]
by Honeywell

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The System

Edward Armm, SET, a Senior Consultant for RJA, wrote the specification and solicited bids for the equipment and installation. The winning bid was prepared by Alan Doorly, CET, Director of Operations for Cross Fire and Security Co., Inc., of Brooklyn, New York. Utilizing NOTIFIER's ONYX® Series of fire protection systems, Doorly was able to engineer a user-friendly system capable of supervising a large number of nodes with several thousand initiating and indicating devices.

A total of 52 NFS2-3030 fire alarm control panels (FACP) function as the nodes, essentially one per floor, and all are connected together via the NOTIFIRE-NET™ high-speed, peer-to-peer communications network. "The number one reason you would install a network node system in a building of this size and magnitude is to provide additional survivability during not just a fire condition but for all types of emergencies," says Doorly.

A NOTIFIER NFS2-3030 FACP located on the first floor communicates with each of the other 51 nodes by means of Style 7 (Class A) wiring. This continuous loop of wiring, connecting all nodes throughout the system, ensures no interruptions to communications if wiring is cut or damaged.

To aid in emergency response, the Fire Command Center can be accessed by fire fighters immediately upon entering the building. In addition to the main FACP, the Command Center includes an ONYX NCS (Network Control Station) high-performance desktop computer designed to display the locations of system components and alarm events superimposed on CAD drawings of the facility's floor plan. Here, first responders can also utilize an ACS-24AT annunciator to control loudspeakers and warden phones throughout the facility.

The facility's engineering and security offices are equipped with a Network Control Annunciator (NCA) for immediate monitoring access of the entire system. The NCA is a 640-character backlit LCD display that operates as a node on the network.

The Marriott Marquis' new Notifier System was also integrated with the existing public address (PA) system. The Fire Command Center is equipped with a Digital Voice Command Center located on the first

floor level which allows certified Fire Safety Directors to make broadcast announcements.

Integration of a PA system with a multi-node fire alarm such as this allows announcements to be made to specific areas such as bedrooms on a certain set of floors, in stairwells or throughout the whole facility. For the Marriott Marquis, "zoned paging" is especially useful for directing announcements to the garage and restaurants.

Large-Scale, Rapid Detection

The Marriott facility is equipped with more than 3,500 initiating devices, including smoke detectors, pull stations, waterflow switches and temperature sensors, which communicate in groups with the node FACP on their particular floor. A patented FlashScan® protocol polls device groups, stopping to concentrate on individual devices only when new information is detected and processed by the FACP. The net effect is a response speed greater than five times that of earlier versions.

According to Armm, speed of communication is crucial in a system this large. "Even if we went to the farthest extreme of this system, in less than 5 seconds we had an active alarm," says Armm. "As big as the system was—it was that quick."

Challenging Aspects

The hotel's atrium rises from the 10th to 45th floor and all corridors outside of the guest rooms open to it. One of the project's most challenging design aspects involved integration of the atrium's existing purge control system with the new fire alarm.

The purge system consists of two colossal fans, designed to remove smoke from the building and pull in fresh air quickly. Through the facility's building management system (BMS), the new fire alarm system activates fans during any alarm on a floor overlooking the atrium. Beam detectors on one of every three floors pointed across the atrium also trigger an alarm and the purge system if smoke is detected within the atrium.

New York City requirements typically mandate purge systems, as well as stairway pressurization, be initiated by the fire department. In this instance, an exception was made due to the large number of occupants usually present within the Marriott Marquis.

The system protecting the Marquis Theatre is part of the facility's 52-node network, but is programmed to respond differently. The possibility of a non-emergency event in another part of the building emptying a theatre of more than 1,600 people was a scenario Cross Fire had to program the system around.

The theatre's FACP is located immediately off-stage and monitored by a trained Fire System Director. This individual must be able to view the stage and audience at all times. Using the theatre's FACP, the Fire System Director can make live voice announcements and manually trigger a deluge system to place a wall of water between the audience and stage.

The peer-to-peer architecture of the NOTIFIER ONYX Series system allows for easy installation and minimal wiring, which limited the installation's effect on the building's façade.

"There were very high-end finishes at the hotel - fancy wood, marble, stainless steel. Whatever the surface was, when they (Cross Fire) were done, it looked like they were never there," says Armm.

According to Armm, "It was the best managed job I've ever been involved in. I'm sorry to have it end. The people from Cross Fire have a strong life safety ethic. They believe that what they do could possibly save a life."

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