



Case Study

BlazeMaster® Fire Sprinkler System allows flexibility for high rise hotel retrofit.

The decision to retrofit a fire sprinkler system at the 20-story Ramada Inn Plaza Suites Hotel in downtown Pittsburgh, Pa., was prompted by the passage of the Hotel/Motel Fire Safety Act of 1990-Public Law 101-391. This legislation requires all federal employees traveling on official business to stay in fully sprinklered hotels. Without fire sprinklers, the hotel cannot participate in the federal employee market.

According to Jesse Kock, chief engineer for Elmhurst Corporation who owns and manages the property, "The decision to retrofit was made in January 1995 with a target completion date of February 1996. Completion by this date would allow the property to be listed in the Federal Register as a fully sprinklered hotel to accommodate federal employees on travel."

Careful Considerations

Originally built in 1950 as an apartment building, this downtown hotel had undergone several renovations, creating building nuances that would make the retrofit an even more difficult project. While the installing mechanics were fully trained in March 1995 by a BlazeMaster® Regional Consultant to the fire sprinkler industry, installation did not start until August 1995 due to delays in obtaining code variances.

"Due to time constraints, it was decided to install the sprinkler system between 8:00 a.m. when the guest checked out and 3 p.m. when new guests check in," explained Koch.

installed; and the room cleaned. Because the BlazeMaster® Fire Sprinkler System was installed so quickly and easily, the hotel was allowed to maintain a 95% occupancy rate.



Details in Design

According to Jim Davidson, Jr., P.E., of Triad Fire Protection Engineering Corporation, Springfield, Pa., "We designed the system to account for hidden construction details and the requirement by hotel management to make the installation look as if it were part of the original construction process" (Photo 2).



Davidson used pendent heads in all dwelling units, which required a flexible piping material such as BlazeMaster® CPVC pipe that could be installed with only a 2' X 2' opening in the plaster on lath ceilings (Photo 3). In the corridors, the piping was concealed behind one-hour fire rated constructed soffits because of structural steel beams obstructing the path of the sprinkler feed mains (Photos 4 and 5).



In that time frame, the room had to be draped with drop cloths (Photo 1); the hangers, pipes and sprinkler heads installed; new plaster on lath

Type of Construction:
Hotel/Motel

Installation Type:
Retrofit

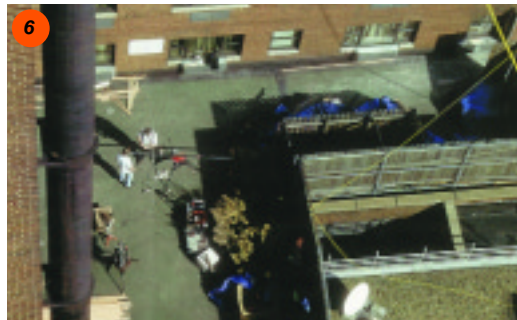
Location:
Pittsburgh,
Pennsylvania

Scope of Project:
Heads: ≈4,000
Sq. Feet: ≈600,000
Stories: 20

Fire Sprinkler Contractor:
Triad Fire
Protection
Engineering
Corporation



"There were other requirements that had to be considered such as a limited area for storage of sprinkler pipe and fittings," said Davidson. "Because BlazeMaster® pipe and fitting materials are so lightweight, we were able to use the third floor roof as a lay down area for the pipe and fittings" (Photo 6).



Another concern was the movement of material from the storage area to the floor of installation. The use of steel pipe would have required maximum pipe lengths of 8 ft., instead of 15 ft., in order to move the material in the service area elevator up to the floor of installation. This would have hindered other hotel service operations.

The installation of BlazeMaster® pipe allowed for a "manpowered" system using a roof mounted pulley. Additionally, the ability to move the pipe

through window openings without taking the hotel rooms out of service for a clean up produced savings in both manpower required and hotel cost attributed to clean up operations. The use of BlazeMaster® pipe and fittings saved at least four man weeks in the movement of material alone (Photo 7).



BlazeMaster® CPVC Product Benefits

"The use of BlazeMaster® CPVC pipe and fittings allowed the hotel to maintain a maximum occupancy rate for the duration of the installation," said Davidson.



The hotel realized a substantial savings in the cost of installing the BlazeMaster® Fire Sprinkler System due to the flexibility of making construction changes in the field, ability to change the location of the retrofit work to suit hotel occupancy on a day to day basis, use of the third floor roof for storage of materials handling and transport to the floor of installation (Photo 8), and use of in-house construction and maintenance staff.

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