

CASE STUDY



SCIENCE. SERVICE. SAFETY.

PROJECT:

University of Notre Dame

LOCATION:

South Bend, Indiana

INSTALLATION TYPE:

Dormitory Retrofit

SCOPE OF PROJECT:

Heads: 8,000

Sq. Feet: 750,000

Stories: 12

Buildings: 3

CONTRACTOR:

McDaniel Fire Systems

BENEFIT:

Flexible Engineering, Ease
and Speed of Installation

BlazeMaster® CPVC brings essential fire protection to University of Notre Dame

As one of only six universities with its own fire department, the University of Notre Dame is a prime example of an institution that places a high priority on fire protection.

To minimize the potential devastation of residence hall fires, Notre Dame launched a retrofit program in 1979, installing sprinkler systems during the renovation of old buildings and the construction of new ones. However, a deadly blaze that roared through a residence hall at Seton Hall University in 2000 catapulted student life safety to the forefront of crisis prevention.

Historically, Notre Dame administrators had found traditional retrofits to be necessary but disruptive. They tend to be multi-year projects, due in large part to the inherent engineering challenges of metallic systems. Notre Dame has 27 residence halls housing 80 percent of the student population. At the time of the Seton Hall fire, only 12 of the Notre Dame halls had sprinkler systems. In the wake of this tragedy, Notre Dame Fire Operations Chief John Antonucci presented school officials with a plan mandating that the more than 750,000 remaining square feet of residence hall space be completely retrofitted within a seven-month time frame. Using traditional systems, this type of retrofit would take four to five years—creating a lofty goal without a solution.

A Race Against Time

The University knew they needed a way to meet this aggressive time schedule without compromising the final product or disrupting student life. That's when Antonucci turned to McDaniel Fire Systems (Valparaiso, Ind.) to install a BlazeMaster® fire sprinkler system. Antonucci believed that BlazeMaster CPVC would offer the superior, reliable performance he sought, and also featured simplistic, flexible engineering. Highly durable and lightweight, BlazeMaster fire sprinkler systems were also proven to exhibit excellent impact resistance and natural immunity to corrosion and Microbiologically Influenced Corrosion (MIC). A key benefit for Notre Dame's residence hall project, however, was ease and speed of installation.



We tore out four floors of piping, redesigned the system and reinstalled it in four days. That's how easy BlazeMaster systems are to work with.

Chief John Antonucci
Notre Dame Fire Operations





"The primary reason we chose Fire Protection Systems was because they gave us the ability to make engineering decisions in the field in order to finish the project in our time frame," said Antonucci. "We even completely changed one residence hall from the initial design. We tore out four floors of piping, redesigned the system and reinstalled it in four days. That's how easy BlazeMaster fire sprinkler systems are to work with."

Key to the tremendous time savings is the fact that BlazeMaster CPVC can be engineered quickly, requiring only simple hand tools, so fabrication, changes and alterations can all be done on site. They also employ a solvent-cement joining system, which eliminates the need for torches or heavy equipment typical with steel piping. Ease of installation allowed the McDaniel crew to complete six buildings during the 2000 summer break, three buildings over winter break and the remaining six buildings during the 2001 summer break—a monumental task given the projected time frame of a steel system.

"When the University officials mapped out their time schedule over the summer and winter breaks so that we could have complete access to the buildings, we realized immediately that there was no way to do the project in steel pipe. It just couldn't be done. But it was possible using BlazeMaster CPVC," said Mike Lowe, Assistant Vice President and Corporate Purchasing Manager for McDaniel Fire Systems. "The product gave our engineering staff the ability to speed up their function."

"All we had to do was ship the materials to the site. It was just a matter of getting product to the field crew and turning them loose to get the project done," continued Lowe.

More than 8,000 sprinkler heads were installed quickly and without displacing a single resident. Most importantly, quick completion of the retrofit helped to ensure the students' life safety years ahead of schedule.

Lowering the Cost for Student Safety

In addition to time, cost was a major issue for school officials. As a private institution, Notre Dame couldn't rely on government subsidies that state schools enjoy for such projects.

"We've continually pushed forward to install sprinklers as residence halls have been renovated—sometimes one every two years. However, the Seton Hall tragedy really brought the issue to the forefront," said Antonucci. "We were in a precarious position at that point, especially being a private university. Being such, our funding sources are obviously different and more limited than those of state universities." Because the installation crew was able to work at a much quicker pace, labor costs were significantly reduced. The project was completed at a cost of about \$3 a square foot versus the typical \$4 to \$5. It translated into a savings of between \$750,000 and \$1.5 million for the school.

"When BlazeMaster Fire Protection Systems first approached us I thought, 'Plastic pipe? Not a chance. Not on this campus,'" said Antonucci. "But after looking at all the information we realized that CPVC systems would be very good in several applications—especially retrofits. Now we know BlazeMaster CPVC is the choice for fire protection."



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