BlazeMaster®
FIRE SPRINKLER SYSTEMS

# Case Study

*Officials Install State-of-the-Art BlazeMaster® CPVC Fire Sprinklers to Meet an Aggressive Schedule Under a Tight Budget*

**Type of Construction:**
Dormitory

**Installation Type:**
Retrofit

**Location:**
Indiana

**Scope of Project:**
Heads: ≈8,000
Sq. Feet: ≈750,000
Stories: 12 Buildings:
4 Floors Each

**Fire Sprinkler Contractor:**
McDaniel Fire Systems

As one of only six universities with its own fire department, the University of Notre Dame, founded in 1842, 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 Seton Hall University residence hall in January of 2000 catapulted student life safety to the forefront of crisis prevention, triggering an outpouring of concern from Notre Dame fire officials.

Historically, University administrators have 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% of the student population. At the time of the Seton Hall fire, only 12 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 7-month timeframe. This was seemingly impossible as this project was estimated to span 4-5 years under best conditions using traditional systems.

**A Race Against Time**

Now working under an aggressive time schedule, Antonucci turned to McDaniel Fire Systems (Valparaso, IN) to install BlazeMaster® CPVC (chlorinated polyvinyl chloride) fire sprinkler systems. According to Antonucci, BlazeMaster CPVC sprinkler systems offered the superior, reliable performance he sought, and also featured simplistic, flexible engineering. Highly durable and lightweight, BlazeMaster CPVC systems were also proven to exhibit excellent impact resistance and natural immunity to corrosion and MIC (Microbiologically Influenced Corrosion). The key benefit for Notre Dame's residence hall project, however, was ease and speed of installation.

**Now listed for more types of applications than any other non-metallic system.**

"The primary reason we chose BlazeMaster CPVC fire sprinkler 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 fire sprinkler systems 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. 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 original projected timeframe.

"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 fire sprinkler systems," 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-$5, which translated into a savings of between $750,000 and $1.5 million for the school.

"When BlazeMaster fire sprinkler 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 fire sprinkler systems are the choice for fire protection."



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