

CASE STUDY



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PROJECT:

Wake Forest University

LOCATION:

Winston-Salem, North Carolina

INSTALLATION TYPE:

Dormitory Retrofit

SCOPE OF PROJECT:

Heads: 1,600

Sq. Feet: 232,000

Stories: 3

CONTRACTOR:

Worsham Sprinkler

BENEFIT:

Reduced Design Time

Allowed for Immediate

Field Installation

Blazemaster® CPVC Quickly Retrofits Residence Halls

When five students died tragically in a 1996 fire at the University of North Carolina, many universities across the United States reevaluated their fire suppression systems. At nearby Wake Forest University, the tragedy hit close to home. Campus leadership decided to embark on an ambitious program to retrofit all campus housing with fire sprinkler systems.

At first, the university turned to what they knew: a steel fire sprinkler system. Then, their need for a reliable system, coupled with real-world scheduling and retrofit challenges, led them to BlazeMaster® Fire Protection Systems.

When the project began, Wake Forest started small: retrofitting one residence hall with a steel fire sprinkler system. But installing steel pipe was time and labor intensive. The design of the steel system required extensive field survey, which could not be performed until students vacated the residence halls for summer recess. And, design and fabrication pushed the installation period perilously close to the date students returned to school.

Other challenges with retrofitting older residence halls included the need for installation tight against exposed ceilings, installation in small spaces above existing dropped ceilings, and field revisions due to unforeseen obstructions.

After the initial residence hall installation, University officials knew that they would either need to limit the size and scope of the work—or find a better solution.

Worsham Sprinkler, one of the contractors working on the project offered the ideal solution. “We advised Wake Forest to use a BlazeMaster fire sprinkler system to ensure that the installation could be done on time and without the problems associated with the design and fabrication of steel pipe,” said Carl Jackson, vice president for the Charlotte office of Worsham Sprinkler. “We also wanted to demonstrate to Wake Forest the features and benefits of a BlazeMaster fire sprinkler system.”

“We believe the safety of our students comes before any price and the fire sprinkler retrofits were a small cost compared to the peace of mind of the parents of our students and our school administrators.

David Brown
Manager, Safety and
Environmental Affairs,
Wake Forest University,





Worsham Sprinkler had used BlazeMaster CPVC in similar jobs, and they knew it led to faster, easier installations.

Wake Forest sent some of its staff to visit a nearby university, where BlazeMaster fire sprinkler systems were being used for a dormitory retrofit. Recognizing that the retrofit proved successful even in large, older buildings, the Wake Forest staff approved BlazeMaster fire sprinkler systems for all campus housing.

Work began quickly. Because BlazeMaster CPVC does not require pre-fabrication, Worsham Sprinkler was able to reduce design time so field installation could begin immediately after the students vacated the residence halls. The first summer, Worsham Sprinkler retrofitted two resident halls totaling 100,000 sq. ft., with BlazeMaster CPVC. The following year, they completed three more residence hall retrofits, a total of 132,000 sq. ft. The final summer, the university completed the last four campus housing retrofits.

Other advantages of BlazeMaster CPVC were the long-term reliability due to its corrosion resistance, low flame spread, low smoke emission levels and a 50-year life expectancy based upon a safety factor of two. BlazeMaster CPVC piping lasts much longer and requires less maintenance compared to metallic piping systems.

But, at the end of the day speed—coupled with reliable performance—made the difference. With CPVC pipe, field changes could be made quickly and easily. Worsham Sprinkler installed BlazeMaster CPVC pipe in many spaces where rigid, threaded steel pipe would have required difficult, costly cutting and re-threading.

In fact, in one summer, Worsham Sprinkler installed approximately 1,600 sprinkler heads, consisting of 800 heads to NFPA 13 standards in one residence and 800 heads to NFPA 13R standards in two others. According to Chris Lyons, job foreman, “No way could we have met this schedule without the BlazeMaster fire sprinkler system.”

Not only was BlazeMaster CPVC the right choice in terms of scheduling, but it also proved its reliability almost immediately. One year after the system was installed, a smoke detector tripped the fire alarm in one of the Wake Forest student residences. When the fire department arrived at the scene, they found the sprinkler had operated as designed and extinguished the fire. No one was injured. Total damage was less than \$10,000.

According to David Brown, manager of safety and environmental affairs at Wake Forest University, “We realized just how dangerously close we came to a tragedy that night. We believe the safety of our students comes before any price and the fire sprinkler retrofits were a small cost compared to the peace of mind of the parents of our students and our school administrators.”



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