



FIRE PROTECTION SYSTEMS RESIDENTIAL INSTALLATION

CASE STUDY

Uponor Fire Protection System the Logical Choice for University Student Housing

Students and their parents can rest assured that the lives and property of the residents are secure with the most advanced fire protection system available.

It is very important to keep our families safe and protected from the devastation of a house fire. So how do we accomplish this when children move away from home?

The University of Winnipeg, located in Winnipeg, Manitoba, required more student housing in an area that typically experiences a lot of fires. Fire safety was obviously a key concern given the number of residents on site coupled with the condition of the old, dilapidated homes that were readily available in the vicinity.

Kinkora Developments took on the task of purchasing a few of the rundown homes to renovate them and provide much needed student housing. The plan was to design the houses with common living quarters and private bedrooms for up to eight students per unit.

It was apparent these complexes would need a fire sprinkler system, but complying with rooming-house requirements was an expensive proposition. The regulations state each building would require a complete fire alarm system, extra exit doors and emergency exit lighting. However, installing a fire sprinkler system would nullify these requirements.

Since the buildings were being gutted and completely re-plumbed, the university decided the best solution for fire protection would be a multi-purpose plumbing and fire sprinkler system. They chose the Uponor fire protection system because Uponor has the only non-stagnant, multi-purpose system available. Non-stagnant means fresh water flows to the sprinklers each time an occupant uses a cold-water plumbing fixture.

Multi-purpose systems offer many advantages over traditional fire sprinkler systems. Because it is completely integrated with the cold-water plumbing system, it cannot be accidentally shut down or rendered inoperable.

Each time water flows through a cold-water plumbing fixture the system, in effect, is tested. In essence, the Uponor fire protection system puts a firefighter in every room of the home 24 hours a day.

The Uponor fire protection system provides many advantages to homeowners, builders and installers alike. For instance, the ability to combine the plumbing and fire protection system allows one contractor to install both systems, saving valuable time and installation costs.

Additionally, the system eliminates the problem of sedimentation because water flows through the entire cold-water plumbing system every time an occupant uses a cold-water plumbing fixture. This also eliminates the need for costly check valves or backflow preventers.

The sprinklers in the Uponor fire protection system activate when the surrounding temperature reaches 68°C (155°F), not by smoke. And only those sprinklers that reach 68°C (155°F) will activate and release water. Typically, a single sprinkler can extinguish a beginning fire.

Also, residential sprinklers discharge between nine to 15 gallons of water per minute while a fire department hose typically discharges 200 gallons of water per minute, often causing more damage than the fire itself.

With the Uponor system, people can feel safe and secure in their home knowing their fire protection system is reliable and available if it is ever needed in the event of a fire.

Summary of Benefits

Reliable

Students and their parents can rest assured that the lives and property of the residents are secure with the most advanced sprinkler system available. And Uponor fire protection systems come with a 25-year limited warranty when installed by an Uponor-trained Alliance member.

Proven

Uponor's crosslinked polyethylene (PEX) tubing has been tested and proven reliable for over 30 years in plumbing and radiant heating installations. In fact, over 2 billion feet of Uponor PEX is in service in North America alone, and more than 12 billion feet is installed worldwide.

Approved

The Uponor fire protection system meets National Fire Protection Association (NFPA) requirements for residential fire protection systems. Uponor's ½" Wirsbo AQUAPEX® tubing and fittings are UL-listed for use in multi-purpose tubing systems of residential occupancies as defined in NFPA 13D, the Standard for Installation of Sprinkler Systems in One and Two Family Dwellings and Manufactured Homes.

Clean and Quiet

Wirsbo AQUAPEX tubing does not leach toxins or contaminants into the water nor will it corrode like copper piping. The tubing also dampens the sound of water hammer, common with copper pipe, in systems with quick-closing valves.



Uponor's residential fire protection system is completely integrated with the cold-water plumbing system, providing the only non-stagnant multi-purpose system available.

Project Data

Number of Structures:	4
Size of Each Structure:	1,950 square feet average (7,788 square feet total)
Type of Construction:	Three-story dwellings with basements
Tubing Type:	½" Wirsbo AQUAPEX
Feet of Tubing:	7,800 feet
Number of Manifolds:	4
Number of Sprinklers:	103
Type of Sprinklers:	Recessed



Recessed sprinklers provide high water discharge and speed of operation that extinguish fires quickly.



The design information in this case study is provided for illustrative purposes only. The actual requirements of similar projects will depend on varying factors. All Uponor fire protection systems are designed using Uponor's custom software application which specifies the proper location for sprinklers as well as necessary flow rates. It is designed to comply with national fire codes and standards and meets the requirements of NFPA 13D. For more information about Uponor's design capabilities, contact your area representative.