

PETER SIMPSON: Home sprinklers are life-savers

Built-in feature would also insulate firefighters from deadly carcinogens

Saltwire

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A makeshift vigil was set up in front of the house on Quartz Road in Spryfield in February 2019 after seven children died in a fire . - SaltWire Network

Feb. 19 marks the third anniversary of the tragic Spryfield fire that claimed the lives of seven children.

Recently, in New York and Philadelphia, fire swept through an apartment building and townhome complex, killing a total of 29 men, women and children. All perished from smoke inhalation.

The single-family home in Spryfield, the New York apartment building and the Philadelphia townhome project had at least one thing in common: none of them had automatic sprinkler systems.

How many more fatal fires will occur before legislators and regulators acknowledge that automatic fire sprinklers save lives, protect property and help to preserve the environment?

Financial hurdles

The folks at the Canadian Commission on Building and Fire Codes have for many years steadfastly resisted including sprinklers in the National Building Code for all residential structures, despite pleas from various respected advocates and fire-safety groups, including the Canadian Association of Fire Chiefs (CAFC), which this month is expected to release its long-awaited residential sprinklers white paper.

With the exception of some individual home builders, who believe it's the right thing to do, the majority of builders in Canada oppose the mandatory installation of sprinklers, citing higher costs. They complain they are already nickel-and-dimed to death by the various levels of government.

They have a valid point. A crippling array of development charges, permit and approval fees, and a variety of other fees, taxes and levies add significant dollars to the cost of building a new home.

The white paper is expected to define ways for government, through incentivization, to eliminate or mitigate some of those costs for builders who voluntarily agree to install sprinklers in their homes.

Home Fire Sprinkler Coalition Canada chair Sean Tracey told me during a recent conversation he envisions the process much like a restaurant menu, but instead of food items to choose from, there would be a list of possible tasty cost-cutting incentives.

“A local fire chief working within his or her community, and elected officials, building officials and builders would choose incentives that are acceptable to them, then work to implement them,” said Tracey, co-author of the white paper and retired deputy fire chief of the Ottawa Fire Department.

Examples include forgoing certain development charges, fast-tracking approvals, lifting some of the requirements on fire separation, allowing more windows on side-walls, increasing the allowable dead-end street lengths, increasing hydrant spacing, and allowing homeowners to install secondary suites, which would act as a mortgage-helper rental, or space for aging parents or adult children.

Gaps in coverage

In Nova Scotia, sprinkler systems are required in care facilities, residential structures four storeys and higher, and a couple isolated exceptions. That's it. No detached or semi-detached homes, no townhomes, no condos under four storeys. Why aren't buyers of these types of new homes protected?

I reached out to one of the most progressive mayors in the province, Bridgewater Mayor David Mitchell, to briefly discuss the white paper and learn how he feels about him and his council

meeting with Tracey and his group to learn what aspects of the voluntary program could be applied locally.

Bridgewater, a recognized leader in sustainability, has reached many laudable milestones in the recent past, including the Smart Cities Challenge, in which it won \$5 million, beating 49 other communities. The funds will allow the town to lift many of its residents out of energy poverty.

“We are always open to learning more, so I would absolutely want to be educated on the Residential Sprinkler White Paper, examine the pros and cons, to see if it’s something we can do,” said Mitchell.

“It might be a way to entice more affordable housing. If we told developers if they build affordable housing, and install sprinkler systems in their homes, we would allow increased density. Another easily accomplished benefit would be fast-tracking projects that include sprinklers,” he said.

“We are all ears and open-minded. I would want our staff and council to read the white paper and figure out if it’s something we can do. Instead of doing a presentation to just Bridgewater, perhaps the four mayors and one warden in Lunenburg County could be included as well,” added the mayor.

I believe mayors and councils throughout Nova Scotia should consider hosting their own white paper information sessions. They owe it to their residents and the nearly 8,000 career and volunteer firefighters who place their lives at risk when they respond to fire calls.



Two side-by-side test modules were set up with nearly identical contents. The module at top is shown after water from a single sprinkler head automatically extinguished the fire in under 90 seconds. The second photo shows that the fire in that module, which was not protected by a sprinkler, reached flashover in well under three minutes and had to be extinguished by a firefighter suppression crew. The point of ignition was crumpled paper in waste baskets placed at the bottom left corner of each module. - Peter Simpson

Growing hazard

The need for sprinklers has never been greater. Modern construction, and the contents of new homes, include many synthetic materials, vinyls, glues, resins and laminates. This material ignites easily, burns quickly and produces noxious smoke and gases, exposing firefighters to potentially deadly carcinogens.

The cancer rate among firefighters is rising. Examining the aftermath of fully involved fires, U.S. researchers conducted tests on the condition of bunker gear — jackets, pants, flash hoods, gloves.

They found the gear worn by firefighters had 440 times the contamination of the surrounding environment. The gloves had 3,100 times the contamination. In another study, it was revealed a firefighter who contracted neck cancer had a habit of storing his gloves inside his helmet when he returned to the station from fire calls.

Incident commanders are often reluctant to send firefighters onto a modern trussed roof if the fire has reached the attic. Overheated metal gussets pop off trusses, leaving roofs unstable and dangerous. At that point the trusses basically become organized kindling.

Flashover, a condition where a fire's energy is suddenly radiated back to a room's contents to produce a rapid rise in temperature and simultaneous ignition — an indication the fire is fully developed — occurred in about 21 minutes two decades ago. Today, flashover can occur in under three minutes, and loss of life can occur well before that stage in a fire's progression.

Time is crucial. A home protected by an automatic sprinkler system is akin to having a firefighter on scene, knocking down the fire before the first-out truck has even left the fire hall. A typical response time for a suppression crew is eight minutes; a sprinkler head can extinguish a fire in under 90 seconds. And it's a myth all the home's sprinkler heads activate at once. Only the head above the fire will activate.

Proven safety feature

It's important to note that sprinklers do not replace firefighters, who must respond to all fire calls. However, firefighters are much safer when they arrive at a fire scene where sprinklers have activated.

According to a recent National Fire Protection Association report, the civilian death rate was 81 per cent lower in homes equipped with sprinklers, while the average firefighter injury rate was nearly 80 per cent lower when sprinklers were present during fires.

Moreover, when sprinklers were present, fires were contained to the room of origin 97 per cent of the time, and the home fire death rate was 90 per cent lower when the combination of sprinklers and hard-wired smoke detectors was present.

A wealth of other Canadian research supporting sprinklers is readily available from many sources.

Perhaps buyers of new homes should look beyond the shiny creature comforts — Shaker-style cabinets, Brazilian hardwood floors and solid-surface countertops — and start asking sales agents to explain how their families and property will be protected in the event of a fire.