



A Mandate for Sprinklers!

Ray Holdgate explains the key role of residential sprinklers in the fire prevention strategy of the City of Vancouver Fire and Rescue Service

Vancouver Fire and Rescue Service has long held the belief that it is far more effective to prevent fires from happening, than to try to put them out after they have started. To accomplish this the fire service has implemented a strategy which involves:

- improved fire code design
- tougher enforcement
- public education programmes in communities and schools
- arson prevention programmes
- fire and arson investigations

Sprinklers play a key role in this fire safety strategy. The time frame from when fire breaks out, is detected, reported and then responded to, is critical to successful suppression efforts. An active suppression system that can quickly and completely extinguish an incipient fire should become the primary building fire safety system. Statistical data shows that active suppression systems, such as sprinklers, are unique in achieving an almost perfect safety record, especially in terms of human lives. Sprinklers for commercial applications have been around for many years but can also provide similar benefits in residential premises as they:

- activate automatically at the outbreak of a fire
- help keep fires small or put them out completely
- help confine fire to the room of origin
- limit flame and smoke
- reduce fire deaths and injuries
- reduce property damage
- reduce water usage for fire control

Sprinkler laws

Eighty percent of all fire deaths occur in residential properties; and the City of Vancouver looked to using residential sprinklers to try to reduce this figure.

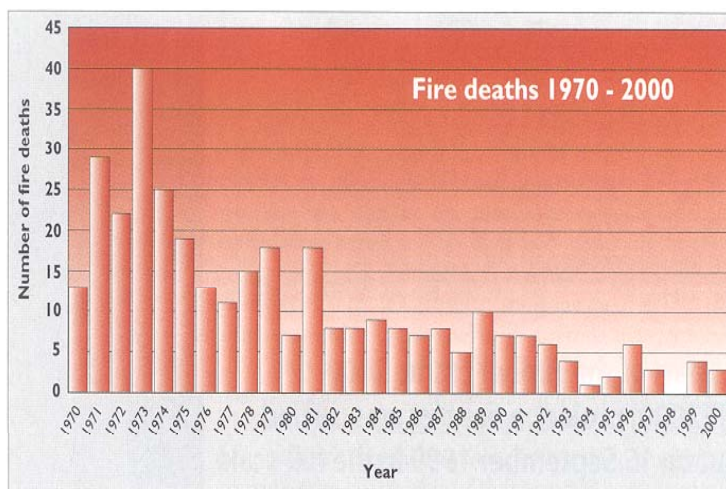
While smoke alarms can be effective at alerting residents in the event of a fire, it has been known for tenants to tamper with or even remove them due to annoying false alarms. Although smoke detectors provide an alarm, they require that building occupants react to this alarm; many people who are killed or injured in fires are elderly, disabled, young children or persons impaired by alcohol or drugs - people who are often unable to react to a smoke alarm.

In April 1990, the City of Vancouver passed a by-law requiring all new residential construction in the city, including single-family homes, to be built with fire sprinklers installed.

City of Vancouver council members deserve a lot of the credit for their vision despite pressure

from outside organisations that did not believe in using sprinklers. But it has taken many years of campaigning to achieve this.

During the early 1970s, the fire death rate in the city of Vancouver caused concern to the fire department and city officials. Statistics had highlighted the fact that fire deaths related to particular types of buildings (hotels, rooming houses, boarding and lodging facilities) were disproportionately high. In 1973, a decision was made to put together a task force which looked at mandatory upgrades to fire



protection equipment - including smoke detectors, smoke alarms, door closures, fire-rated doors, and sprinklers - in these buildings. Despite running into opposition, from organisations such as the Rental Housing Council and tenant groups, the fire protection upgrade programme, endorsed by city building officials and the Council, was put into effect.

Three years into the upgrade programme, almost 90% of the identified buildings had been upgraded - a total of around 9,000 rooms. The next five years (1975-1979) saw the fire death rate drop to an average of 15.2 per year (previously 25.8), with 6.4 deaths (previously 14.4) per year from hotels and rooming houses. Smoking materials and alcohol were identified as major problems and responsible for the cause of a large proportion of these fires - almost half of the fires involving fire deaths. In the late seventies, despite opposition, the upgrade policy was expanded to include all public hospitals and rest homes.

During the early 1980s over 700 buildings had been upgraded. Although fires were still occurring in hotels and rooming houses, the installed smoke alarms were alerting residents, and the sprinklers were effectively stopping the fires from spreading or putting the fires out. The average fire death rate was now down to 8.8 persons a year, significantly lower than what it was in the early seventies.

It is estimated that in the 15 years prior to the sprinkler by-law being passed, sprinklers were installed in some 18,000 residential dwelling units. This figure includes almost 9,000 high-risk residential occupancies in the downtown core that were sprinklered under the retroactive fire by-law legislation passed in 1973. Upgrades of existing residential buildings have not been counted since 1990.

Success

In 1998, there were no fire deaths in Vancouver city, which is quite an achievement for a city with a population of over 550,000 people.

In the past nine years, over 10,000 new one- and two-family dwelling units (about 9% of the current stock) have been constructed with fire sprinklers installed. In the same time period, over 31,500 residential units in multi-family residential buildings (about 24% of the current stock) have been built. It is currently estimated that over 59,500 dwelling units (about 26% of the city's residential stock) are sprinklered, including over

38% of all multi-residential units.

Residential fire sprinkler technology is proving reliable and effective. It is a technology that works and makes sense.

Mandatory sprinklers in all new construction has already significantly reduced the City of Vancouver's annual fire casualties statistics as compared to previous years or other cities in North America that do not have similar legislation in place. This trend is expected to continue as the number of sprinklered dwellings in the city's housing stock continues to increase.

Since 1990 sprinklers have been installed in approximately 1 0,000 one and two-family dwellings, and over 42,000 multi-dwelling units; along with 18,000 dwellings sprinklered prior to 1990, gives a total of approximately 70,000 sprinklered dwellings.

Ray Holdgate is the Fire Chief of the City of Vancouver Fire and Rescue Service

Further information on the Vancouver Fire and Rescue Services can be found at Web Site: <http://www.city.vancouver.bc.ca/fire>