CANADIAN ASSOCIATION OF FIRE CHIEFS

THE FIRE, EMERGENCY, AND LIFE SAFETY PROBLEM WITH SINGLE-EGRESS CONSTRUCTION

Ensuring one way out doesn't become no way out

This document explains the fire, emergency, and life-safety concerns associated with single-egress construction. It also responds to errors and myths discussed in the media and public domain. It is accompanied by an annotated reference sheet for those wishing for more information.

What is Single-Egress construction (SEC)? SEC is an architectural approach for small-to-medium residential buildings that utilizes a single, central, fire-protected staircase for all occupant entry and exit instead of the traditional two separate stairwells and exits, resulting in only one way out. Fire Chiefs has not been given evidence to support this.

A regression in fire & life safety standards: Removing this safety feature is not an architectural innovation; it is a regression in fire and life safety standards to pre-World War II construction. A two-exit standard was introduced for residential construction in Canada in 1941 in response to devastating fires.

A slower, more complicated evacuation and entry: The removal of an exit is also the removal of an entrance. This means that individuals with small children or any type of mobility, cognitive, or sensory challenge will be in the same stairwell as firefighters wearing gear and transporting equipment are attempting entry. Research shows that fires flash over faster, and evacuation times increase with decreased exits. This is part of why a second exit was introduced in the 1940s**.**

Over-reliance on sprinklers: Sprinklers are life-saving, but they were never intended to replace an emergency exit. Their maintenance and inspection can't be guaranteed. SEC creates single points of failure.

Compromising safety for people with disabilities: The Canadian Association of Fire Chiefs and the Rick Hansen Foundation conducted a qualitative study with 70+ participants with disabilities and caregivers. Single-egress rates with steps without ramps, elevator failure, and the absence of an adequate, safe refuge or waiting area as concerns.

Where is the single-egress contrustriction discussion going wrong?

Misunderstanding firefighter ladders: Some engineers, architects and code analysts have erroneously proposed that an emergency exit can be justified through the use of ladder operations and aerial rescue. Ground ladders only reach 28 feet. Aerial ladders are advanced operations which require not only trained personnel but an assumption that the ladders will only reach 2 sides of a building. In addition, access must be free from parked cars, alleyways, dumpsters.

Compounding risks: Over the past code cycle, 300+ code changes have been introduced, leaving 70% of fire departments needing to change their training, equipment or practices. This is in the context of an aging population, climate emergencies, and lithium-ion batteries.

Misunderstandings of the National Fire Protection Association (NFPA) standards: We have seen repeated misunderstandings about what the NFPA standard 1700 for response time says. This also applies to sprinkler and standpipe standards. NFPA 1700 is now referred to as 1750 and requires more than 42 firefighters in 10 minutes for 6-story buildings.

Incomplete international comparisons: International comparisons used for single egress construction often omit key comparators related to fire operations, hydrants, water supply, and use of combustible materials. They have less combustible construction, external staircases, dual access scissor staircases, backup power supplies, ensure access to four sides of the buildings, robust equipped fire departments, and more hydrants.

False safety comparisons: Some analysts have argued that a single egress building is safer than a larger building or an unsprinklered building. The correct comparison keeps all things equal in the two buildings and compares one exit and two exits.

Avoid the tragic conclusion of the Grenfell study

"We conclude that the fire at **[INSERT]** was the culmination of decades of failure by central government and other bodies in positions of responsibility **[INSERT]** to look carefully into **[INSERT]** and to act on the information available to them".

Adapted from: Rt. Honourable Sir Martin-Brooke, Executive Summary of the Grenfell Tower Report Part II.

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