Security report:

What makes a building fire safe

Factors that determine the fire safety of a building include the building materials, the use of the building, number of occupants, exits in emergencies, and methods of fire containment

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Managing fire safety is an ongoing process throughout the life of a building. It begins during the initial planning stages with an overall design that aims to 1) minimize the incidence of fire, and 2) provide appropriate fire safety systems including active, passive, and procedural systems.

The procedures for floor warden teams must be specified in the Fire Safety Plan, and evacuation drills must be conducted regularly

Designing a building to ensure minimal risk or to meet a prescribed level of safety from fire involves more than the merely selecting building materials for the construction of the building. Factors include analysis of the use of the building, the number of occupants, how easily they can exit the building and methods for fire containment.

The management of fire safety is an essential element in averting disaster in the event of a fire. Although most buildings will never have a serious life-threatening fire, it is essential to prepare and implement fire safety procedures for every building. The building code defines fire safety as "the objective of reducing the probability that a person in or adjacent to a building will be exposed to an unacceptable fire hazard as a result of the design and construction of the building." In simpler terms, fire safety is the reduction of the potential for harm to life as a result of fire in buildings. Although the possibility of being killed or injured in a fire cannot be completely eliminated, fire safety in a building can be achieved through building design features proven to minimize the risk of harm.

Three main elements

According to a recent Fire Marshals' study, the loss of life and property from fire could be reduced if more buildings were constructed with a comprehensive, "balanced design" approach to fire safety. Balanced design involves three main active and passive elements which work together to provide the highest level of protection. These are:

1) noncombustible materials in walls and floors to limit the spread of fire,

2) automatic detection systems such as smoke detectors, and

3) automatic sprinklers to suppress the fire until it can be extinguished.

Smoke detectors and sprinklers are considered "active" fire protection, but both can be compromised due to mechanical or electrical failures. Therefore, it is equally important that buildings have passive fire protection: walls and floors made of a noncombustible material such as concrete masonry will help contain a fire and limit its damage. Concrete masonry maintains its structural integrity during a fire and helps keep fire from spreading. This is important not only for building occupants but also for firefighters.

Any structure can be designed to limit or slow the effects of fire so that occupants have time to escape and firefighters can safely reach and extinguish the fire. Occupant safety also depends on factors such as fire detection, exit paths, and automatic fire suppression systems.

At one time, a fire-resistive building was a structure that, barring a collapse or explosion, would confine a fire to one floor. Today we no longer have fire-resistive buildings. If sprinklers or firefighters do not extinguish a fire, the