

22—Non-Employee Accident Prevention

mediately dispatch a representative to investigate the trouble and notify proper representatives of the property under surveillance

If central station tie-in is not available. In areas where no central station supervision is available, the local fire or police department may accept a remote fire alarm panel to be installed at their headquarters or firehouse

If central station or telephone-leased line tie-in is not available. If none of the foregoing possibilities is available, then consideration should be given to the use of qualified and licensed telephone answering services. Automatic dialing units connected to responsible officials of the property is another alternative

Burning plastics. It should be noted at this point that some fuels such as plastic waste receptacles can produce a great deal of toxic smoke when they burn. Therefore non-toxic and non-combustible materials (such as metal cans) might be used. For example, polyvinyl chloride (PVC) in a single foot of one-inch size PVC rigid non-metallic conduit involved in a fire

- 1 Can produce a sufficiently heavy, dense smoke to obscure 3500 cu ft of space, and
- 2 Can generate enough hydrogen chloride to provide a lethal concentration of HCl in approximately 1650 cu ft of space

High-rise building fire and evacuation controls

Just what is a high-rise building? The General Services Administration, at a conference in Warrenton, Virginia, in April of 1971, established four basic criteria to designate a high-rise. First, the size of the building made personnel evacuation impossible or not practical. Second, part or most of the building was beyond the reach of fire department aerial equipment. Third, any fire within the building must be attacked from within because of building height. Fourth, the building had the potential for "stack effect."

The huge high-rise megastructures now building or on the drafting boards all have one thing in common—they are intended to house people. As buildings go higher, the

population density per square foot of ground areas increases, which poses a whole new set of problems concerning the health, safety, and welfare of their occupants. Actually, each building is a sealed life-support system. Present engineering approaches facilitate heating and cooling but are extremely wasteful of energy. They are more airtight than ever, thus there is increasing danger from smoke and toxic vapors.

All businesses to some extent must be concerned about panic and crowd control during those times when an emergency and evacuation takes place. The threat of unusual occurrence (such as riot, bomb threat, and the like) cannot be overlooked and plans must be made to handle such a possibility. High-rise buildings pose new and special problems but other public places such as theaters and other amusement and recreation facilities must also provide well planned emergency procedures. Panic and the press of frantic, hysterical people have caused wholesale destruction of life in many emergencies. Often times, such losses could have been prevented. Strict observance to building and fire codes can do much to eliminate physical hazards and "death traps" through improper design and installation of facilities.

Design and installation of the suppression system for life safety should be considered by every business. Architects should be held accountable for proper design for new construction, especially in the high-rise buildings.

Stack effect. Every building has its own peculiarities for creation of a "stack effect," among them being structure configuration, height, number and size of openings, wind velocities, temperature extremes, number and location of mail chute openings, and elevator shafts. All of these factors create varying air flows which tend to accelerate and intensify an interior fire. Unprotected air conditioning systems are an open invitation to catastrophe. If there is no automatic smoke and heat detection, no automatic fan shutdown, and no automatic fire dampers, smoke and toxic fumes would be quickly drawn into the exhaust or return air duct system and promptly distributed to all other floors and areas of the building served by the air conditioning system.

The National Fire Protection Association