**BACKGROUND AND GENERAL INFORMATION**

Although fire has been around longer than humans, the idea of taking a public and proactive approach to its control or prevention is a fairly new one. Benjamin Franklin was the first to organize a fire department in Philadelphia called the Union Fire Co. He later (1752) set up the first fire insurance company. These were the first efforts to limit, or control the damages caused by fire and smoke.

Much later, in 1871, the historic Great Chicago Fire destroyed much of the city's downtown area and created a new awareness of the power of fire in urban regions. It spawned new building codes requiring mostly brick and fire-resistant building materials to be used in construction, thus transforming Chicago's image forever.

Building and fire codes are sometimes referred to as "blood codes" because they are usually made in response to a tragedy like the Chicago fire. Although, they may come initially from catastrophic events, fire codes are periodically improved, to help keep buildings safe for longer even in the most unforeseen situations.

When designing a smoke control system there are a lot of things to consider. The code can be very vague, but it does point out several methods to use when designing The pressurization method is the most used for stairways and exit zones. This is because the higher pressures in these emergency regions help to keep smoke from flowing into them, and thus clear people's paths out of the building.

LIFE SAFETY AND SMOKE CONTROL

The following flow chart maps out the basic design process that is used when designing a smoke management system for various types of buildings. The smoke control design is a complicated process that involves building codes, science, engineering expertise in many fields, airflow in buildings, natural ventilation, fire and smoke dynamic, heat and mass transfer in building, etc.

This chart lays down a standard "path" for both prescriptive and performance based design. This chart is the result of a collaborative investigation that includes interviewing professionals and researchers currently active in the smoke and life safety fields as well as Dr. Megri's lectures.