2. Fire Detection and Alarm Systems

2.1. Intention

2.1.1. Fire Detection and Alarm Systems requirements in this chapter are to accomplish the following.

2.1.1.1. To enable designers and owners to make appropriate selection of Fire detection systems to complement the overall Fire Strategy of the building to enhance the safety level.

2.1.1.2. Provide early warning to occupants about the fire emergencies to enable them to evacuate to safety.

2.1.1.3. Ensure approved and listed material and equipment are selected by the consultants and contractors to maintain the quality of Fire Detection and Alarm Systems.

2.1.1.4. Ensure owners and facility management maintain the Fire Detection and Alarm Systems to continue fulfilling the design intent.

Did You Know?

UAE has witnessed many fires casualties where occupants were asleep and no smoke detectors were installed in the buildings.

Properly installed and maintained Fire Alarm Systems' Early Warning can save lives.

2.2. Fire Detection Concept

2.2.1. The purpose of fire alarm and signaling systems shall be primarily to provide notification of alarm, supervisory, and trouble conditions, to alert the occupants, to evacuate, to summon aid and to control emergency control functions.

2.2.2. The Fire produces variety of reactions and characteristic signatures such as Smoke, Heat, Radiant Energy. However, different fires based on the fuel it is consuming, have different characteristic signatures such as some fires produce intense heat without smoke, some produce low heat with intense smoke and some burn without flame but produce smoldering smoke. The fire detectors are designed to identify and sense these various inputs and process the data to evaluate, compare and differentiate the environmental conditions or preset conditions to generate the output through control systems called "Fire Alarm".

2.2.3. The Fire Detection and Alarm System essentially consists of Fire Detectors, communicating with Central Control Unit called Fire Alarm Control Panel through wiring or wireless signals to generate Alarm through sounders, bells and audio visual alarm devices. The entire components are powered by primary power supply and secondary power supply through Batteries.

2.2.4. Requirements of this chapter are minimum guidelines. It is consultant's responsibility to further refer to **NFPA 70, NFPA 72, NFPA 75, NFPA 76, NFPA 110, NFPA 111** and **Manufacturer's design specifications and guidelines** for more details.