Definition: As per National Building Code of India-2016, a building 15m and above in height (irrespective of its occupancy) is considered as High Rise Buildings.

Vulnerability: Fire Safety is an important aspect requiring special attention while designing and constructing the high-rise buildings. Mostly fire hazards take place in high-rise buildings because of electricity and defective infrastructure. In New Delhi in 1983, an electric transformer placed in the basement floor caused fire at Gopala Towers, a high-rise building. The cause for the major fire in Uphaar Cinema Theatre, New Delhi in 1997 was due to fault in the Electric Sub-Station located in the cellar.
**CLASSIFICATION OF BUILDINGS AS PER NATIONAL BUILDING CODE OF INDIA**

As per NBC of India-2016, all buildings, whether existing or hereafter erected shall be classified according to use or the character of occupancy in one of the following groups:-

1. **GROUP-A RESIDENTIAL BUILDING** e.g. Lodging and Rooming Houses; One or Two Family Private Dwellings; Dormitories; Apartment Houses; Hotels etc.

2. **GROUP-EDUCATIONAL BUILDING** e.g. School; Colleges; Educational institutions etc.

3. **GROUP-C INSTITUTIONAL** e.g. Hospitals; Homes for aged; Orphanages; Jails; Mental Hospital; reformatories etc.

4. **GROUP-D ASSEMBLY BUILDING** e.g. theatres; motion picture houses; assembly halls; auditoria; exhibition halls; museums; skating rinks; gymnasiums; restaurants; places of worship; dance halls; club rooms; passenger stations and terminals of air, surface and marine public transportation services; and stadia etc.

5. **GROUP-E BUSINESS BUILDING** e.g. Offices; Laboratories; Libraries; Computer Installations; IT Parks; Telephone Exchanges; Broadcasting/TV Stations; Air Traffic Control Tower etc.

6. **GROUP-F MERCANTILE BUILDING** e.g. Shops; Stores; Markets; Underground Shopping Centres etc.

7. **GROUP-G INDUSTRIAL BUILDING** e.g. Assembly Plants; Industrial Laboratories; Dry Cleaning Plants; Power Plants; Generating Units; Pumping Stations; Fumigation Chambers; Laundries; Buildings or Structures in Gas Plants; Refineries; Dairies and Saw-Mills etc.
8. **GROUP-H STORAGE BUILDING** e.g. Warehouses; Cold Storages; Freight Depots; Transit Sheds; Storehouses; Truck & Marine Terminals; Garages; Hangars; Grain Elevators; Barns & Stables etc.

9. **GROUP J HAZARDOUS BUILDING** e.g. Buildings used for storage and handling of highly combustible or explosive materials which may produce poisonous fumes or explosions or toxic etc.
WHAT IS YOUR ROLE TO PREVENT FIRE?

If you are occupying one of the floors of High Rise Building, have you ever thought Fire Hazard around you? A little care and awareness on your part can avoid a major disaster and may save precious lives and property.

HOW FIRE SAFE IS YOUR APARTMENT?

Remember: Fire Prevention is your best Fire Protection. As you know, “Fire is easy to prevent but hard to fight”, you must therefore prevent Fire.
TO PREVENT FIRE

- Always keep match-sticks away from children.
- Do not smoke on the Bed and always dispose cigarette butts in Ash-tray.
- Do not light Incense sticks (Agarbatti) near curtains, racks and cloths.
- Do not store inflammable material inside building.
- Do not make unauthorized electrical connections and overloading of electrical appliances.
- Do not forget to switch-off the electrical mains and to close the window shutters before leaving your home for a long tour.
- Do not allow iron or similar appliances plugged when no one is present or not in use.
- Do not store paint, varnish etc. In large quantities.
- Do not store LPG in more than required quantity.
- Use cotton apron while cooking.
**DESIGN STAGE**

- Enclosure of minimum 02 hrs. Fire Resistance for Staircases and lift wells.
- Wide staircases and lobbies to permit orderly evacuation in emergency.
- Pressurization of staircases and lift lobbies to restrict smoke penetration.
- Critical areas such as Refuge Area to be protected with Fire Check Doors.
- Fire Lift for exclusive use of Fire-fighters.
- Electrical wiring to be conduited.
- Emergency Switches at Ground Floor for disconnecting power, Floor-Wise.
- Provision of Automatic Fire Dampers in Air-Conditioning ducts to restrict smoke travel throughout building.
- Sealing of Service Shafts/Ducts with Fire Resistance Material.
- Provision of alternate power supply for emergency lightning, Fire Lift and Stand by Fire Pumps.

**OCCUPATION STAGE**

- Minimise combustible material for furnishing.
- Use Fire Retardant Material for false ceiling, partition and upholstery.
- Develop a simple, Written Fire Safety Plan which should include precautions for Fire Prevention at Occupants Level, Fire Control by Building Maintenance/Security Team and the Emergency Plan covering Evacuation Procedure.
- All occupants should know clearly how to Identify/Raise Fire Alarm, call Fire Brigade and Evacuate Safely.
MAINTENANCE STAGE

- Ensure good maintenance of Fire and Safety Equipments.
- Check periodically availability of dedicated water for Fire-fighting.
- Undertake Fire Drills and Mock Drill Exercises for Evacuation.
- Have stringent control against overloading of electrical circuits, accumulation of flammable material underneath staircase, lobbies and escape routes.
The traditional image of office work being always safe is deceptive. The main risk to life and property in the offices is due to Fire. Besides loss of Lives, injury to office workers, damages to property, critical date and irreplaceable office record can give a severe blow to the organization. Most of the modern offices are vulnerable to Fire due to poorly managed Fire Hazards.
**SOME COMMON FIRE HAZARDS**

- Paper records, plastic tapes and discs.
- False ceiling, wooden furniture and carpets etc.
- Non-standard and faulty office equipments.
- Defective and loose electrical wiring.
- Overloading of electrical circuit.
- Free use of extension cords, ungrounded plugs and unfused multiple outlet adapters.

**SOME USEFUL TIPS**

**FIRE PREVENTION**

1. Practise good Housekeeping. See that all thrashed can and recycling containers are emptied on a regular basis.

2. Ensure that office and storage closets are free of excess combustible materials. Limit their quantities to an acceptable level and store them only in approved cabinets.

3. Keep heat-producing equipments such as Xerox Machines, Computer, Coffee-maker, Hot Plates etc. away as anything might burn. Don't smoke at places other than permitted areas. And discard ashes in ash-tray only.

4. Ensure that air-vent in computer and other heat-producing devices are not covered and or restricted causing inadequate airflow.

5. Don’t place space heater under desks. Place them in an open area, away from combustibles.

6. Do not overload any power switches.

7. Do not use multi-plugs.

8. Always switch-off electrical appliances when not in use.
FIRE PROTECTION

Fire Protection can be divided into two broad categories.

- Non-Structural Fire Protection or Active Fire Protection.
- Structural Fire Protection or Passive Fire Protection

ACTIVE FIRE PROTECTION MEASURES

Initiating Devices: Smoke Detectors, Heat Detectors, Flame detectors, Flow Switches, MCPs etc.

Indication Devices: Hooters, Electrical Bell, Speakers, Lamps etc.

Control Panel: Conventional and addressable type.

ACTIVE FIRE PROTECTION MEASURES

1. Selection of material for construction of elements of structure.
2. Compartmentation- More the combustible material smaller the compartment or vice-versa.
3. Constructional requirements- Stability, Integrity and Installation.
4. Selection of Building material- Non combustible materials should be used. However, if combustible materials are used, they should be properly protected and meet the criteria laid down in Indian Standards.

In case of Fire in High-Rise Building, safe evacuation of its occupants is not that easy unless a plan for orderly and systematic evacuation is not made in advance. All occupants need to be well drilled in the operation of such plans. The Evacuation Drill shall be conducted in accordance with the Fire Safety Plan at least once in every three months in order to ensure orderly and systematic evacuation of the occupants of building in case of an Emergency.
IN CASE OF AN EMERGENCY CALL 101
(ITS TOLL FREE)

FIRE & EMERGENCY SERVICES
MUNICIPAL CORPORATION, CHANDIGARH