

Topic 5

Fire Fighting System & Fire Escape Requirements



Principles of Fire Protection Requirements for Larger and Taller Buildings In Malaysia

References :

1. Uniform Building By Law; Part VII & VIII
2. Guide to Fire Protection in Malaysia by Dato'Hamzah bin Abu Bakar

Fire Safety Philosophy –UBBL 1984

- **Life Safety is Ultimate in Building Design; life safety of occupants** of buildings must be the **prime consideration** and this can be **achieved by minimum fire protection** in respect of the various basic aspects of:

Basic aspects to ensure safety of building occupants:

- Means of escape for occupants/**evacuation**
 - Spread of fire within the building,
 - from one building to another /
passive containment
- Means of detection and extinguishment of fire ;
active intervention &
access for fire fighting and rescue

Issue

- The larger the space, the greater is the potential fire risks and the greater the likely fire loss, however

in developments it is often necessary to increase the building height of buildings or the floor area to obtain profitable return of investment

Building Considered as A Whole

- Passive
- Active

Fire Protection

Building Considered As a Whole

The requirement of adequate means of escape is an inexact science and may vary in different types of :

- occupant
- usage
- process
- building types
- building heights

Passive Fire Protection

Part VII UBBL

Buildings are designated into categories according to its use: **Purpose Group**

Fifth Schedule UBBL – Purpose Group I - VIII

purpose for which the building or compartment is intended to be used

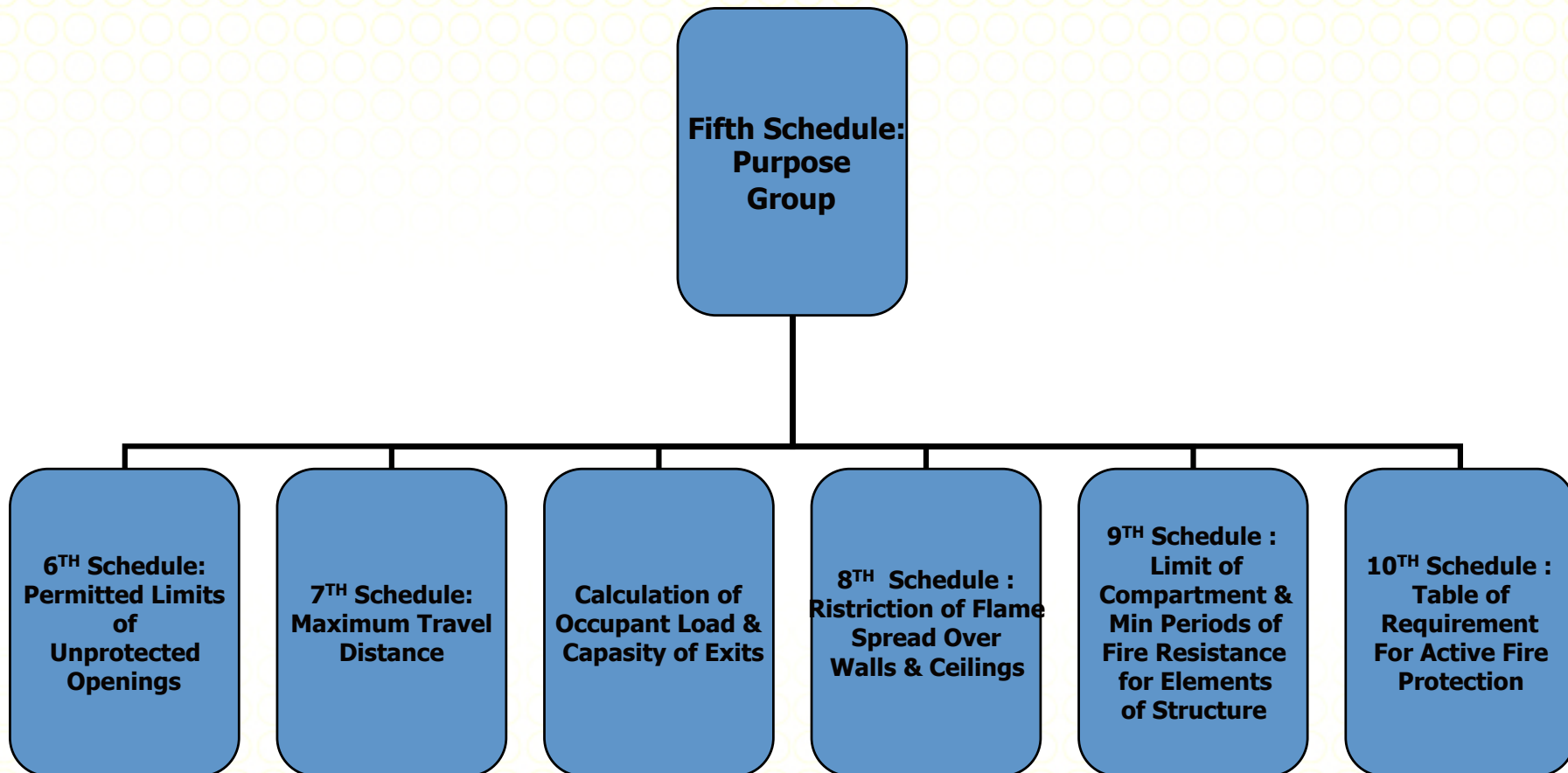
- Group I – III ; **groups with residential** elements i.e. there is sleeping accommodation (extra danger in the event of fire)
- Group IV – VIII; **no sleeping accommodation**

Designation of purpose group

- Every building is to have one overall designation
- Where a building is divided into compartments, used or intended to be used for different purposes, the purpose group of each compartment shall be determined separately
- Individual components of building different usage from overall must be designed to accommodate the more stringent requirement and where these requirements 'spill' into other parts of the building, the more stringent requirement applies



How purpose group influences fire protection requirement



Limits of dimensions

- Sprinklers have been proven to be a most effective form of fire control
- It provides early suppression and containment system
- Extends the evacuation time
- Consequently the limits of dimensions for areas and volumes in buildings and compartments which are with sprinkler system are allowed to be **doubled**

Atrium

- A large volumetric space created by a floor opening or a series of floor openings connection two or more stories and is used for purposes other than an enclosed stairway, elevator hoist way, escalator opening, utility shaft for plumbing, electrical, air conditioning or communication facilities

Fire Appliances Access

Vehicular access to the exterior of a building is needed to:

- enable high reach appliances e.g. turntable ladders and hydraulic platforms to be used and
- Enable pumping appliances to supply water and equipment for fire fighting and rescue activities

Bomba access to building

Fire appliance access.

140. All building in excess of 7000 cubic metres shall abut upon a street or road or open space of not less than 12 metres width and accessible to fire brigade appliances. The proportion of the building abutting the street, road or open space shall be in accordance with the following scale:

Volume of building in cubic meter	Minimum proportions of perimeter of building
7000 to 28000	one-sixth
28000 to 56000	one-fourth
56000 to 84000	one-half
84000 to 112000	three-fourths
112000 and above	island site