



## CHAPTER 7

### MECHANICAL VENTILATION AND SMOKE CONTROL SYSTEM

#### ROOT OBJECTIVES

The primary intentions of this chapter are encapsulated in the following statements:-

- R7.1 Maintain tenable conditions for evacuation of occupants and protect them from injury arising from the effects of fire.
- R7.2 Provide smoke management in the building for fire-fighting operations.

#### SUB-OBJECTIVES

The following criteria define the conditions necessary to fulfil the intentions of this chapter:-

- S7.1 Provisions for ventilation for life safety purposes such that, in the event of a fire, evacuation routes are maintained :-
  - (i) below thermal threshold for human tenability; and
  - (ii) at visibility levels adequate for occupant evacuation; and
  - (iii) below toxicity threshold for human tenabilityfor the period of time required for escape.
- S7.2 Provisions for ventilation to maintain safe conditions in the means of escape for evacuees for the period of time required for escape.
- S7.3 Provisions for adequate ventilation for the storage of flammable and explosive substances or equipment emitting flammable vapour, to prevent undesirable accumulation of such flammable vapour.



S7.4 The installation and operation of the mechanical ventilation systems shall

- (i) have minimal contribution to the spread of fire and smoke in the building; and
- (ii) have no adverse effects on the operation of other life safety or fire suppression systems.

S7.5 Provisions for appropriate and adequate ventilation to

- (i) rooms housing essential fire fighting facilities which are dependent on it for their continued operation; and
- (ii) fire command centre in which emergency personnel operate.