

Proposed Changes

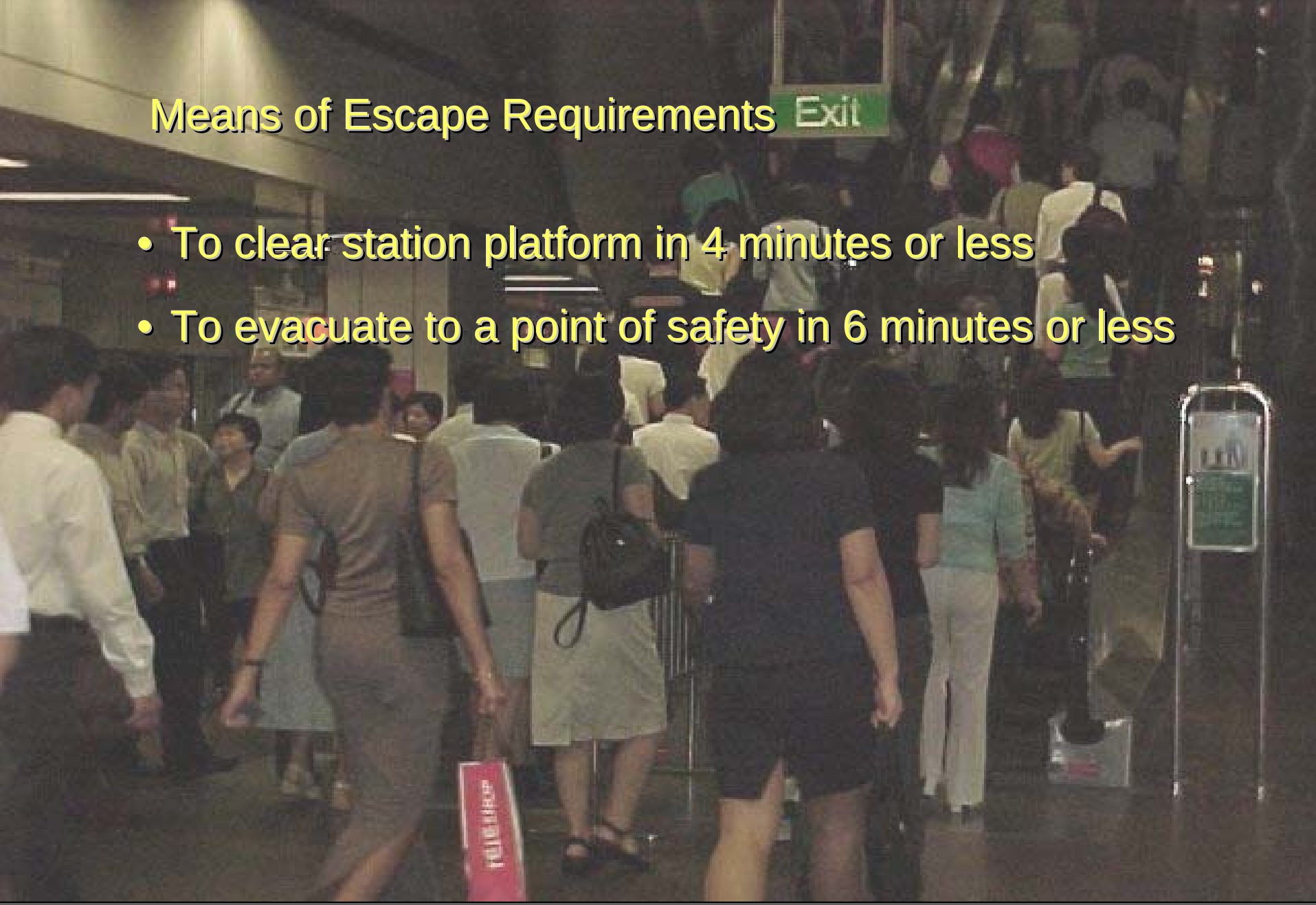
to the

Standard for Fire Safety in Rapid Transit Systems



Proposed Changes:

- Means of Escape
- Fire Rating
- Compartmentation
- Fire Protection
- Update
- Editorial Changes



Means of Escape Requirements

- To clear station platform in 4 minutes or less
- To evacuate to a point of safety in 6 minutes or less

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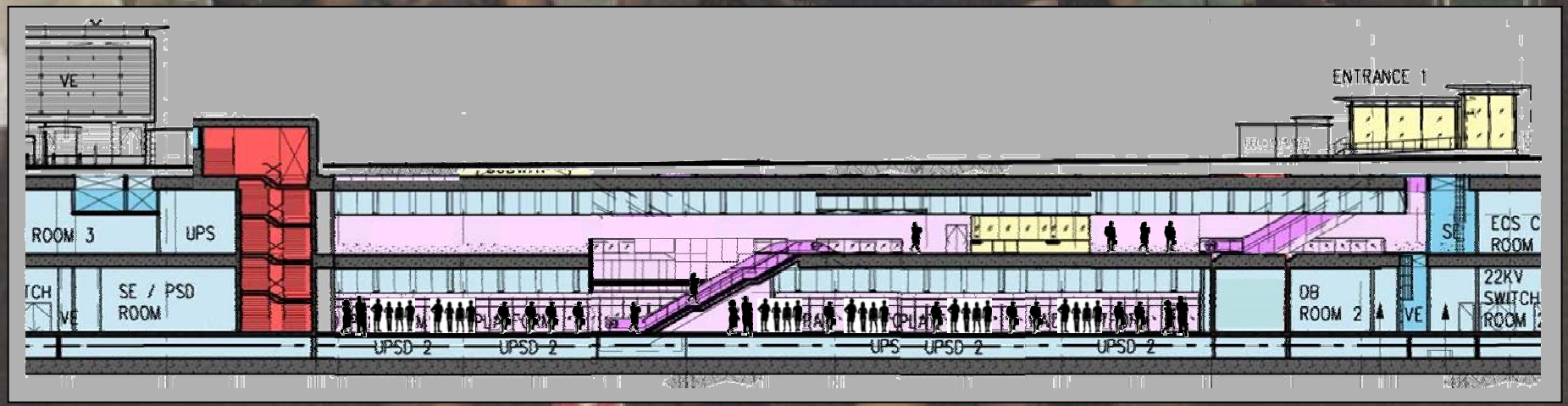
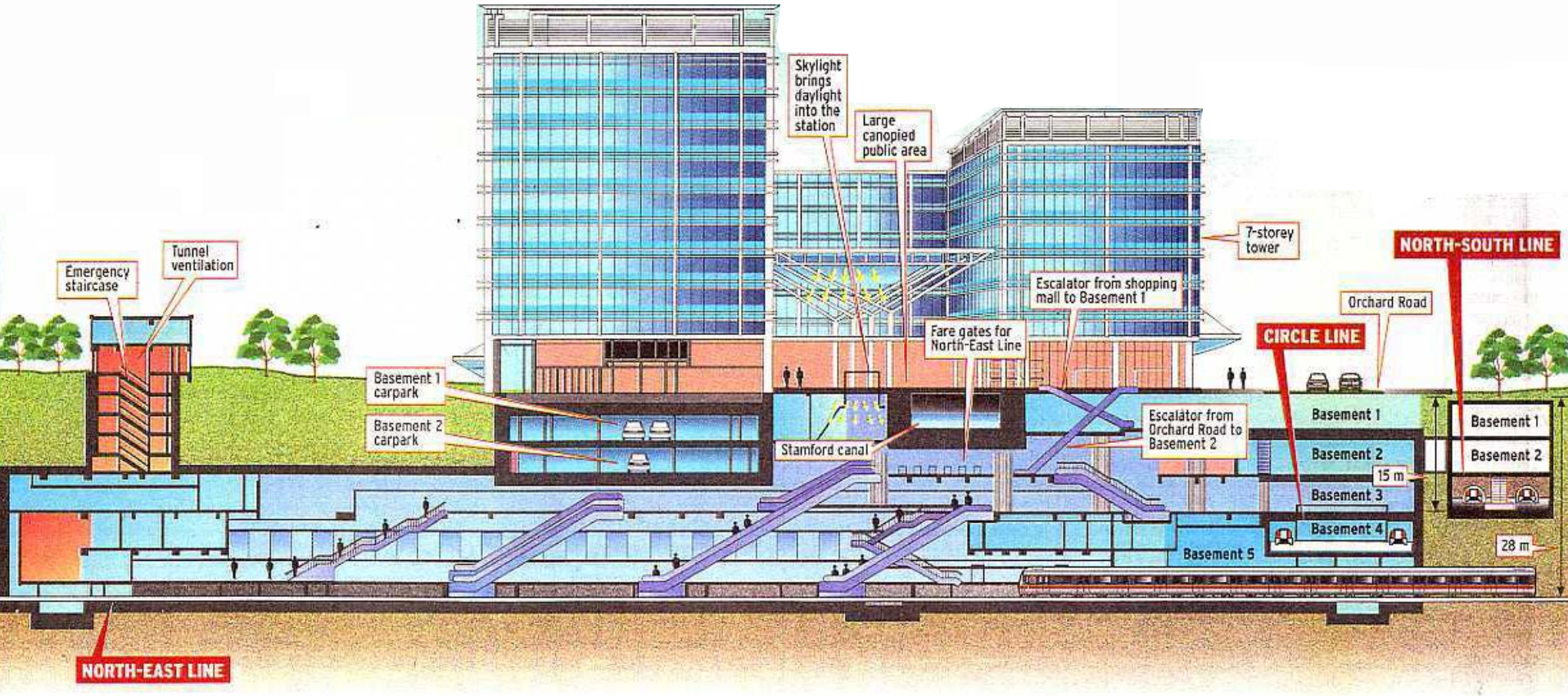
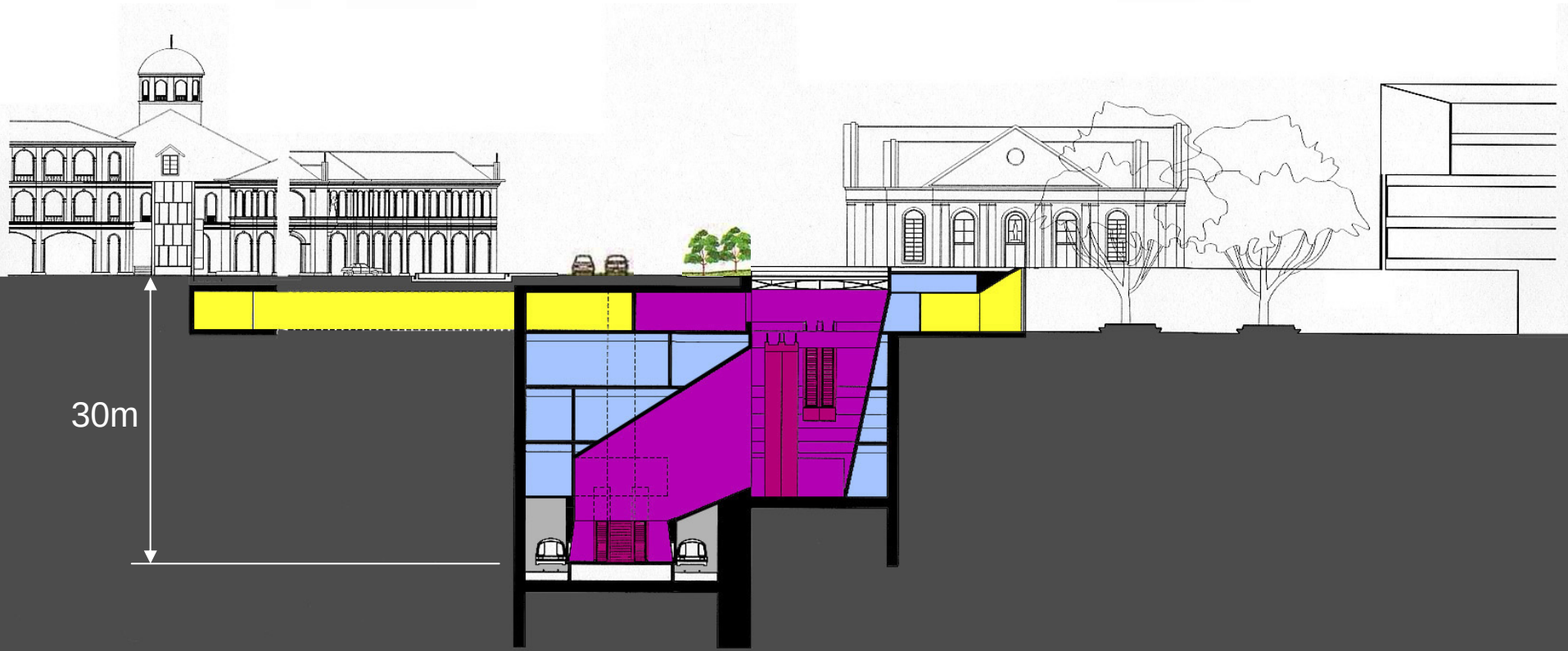


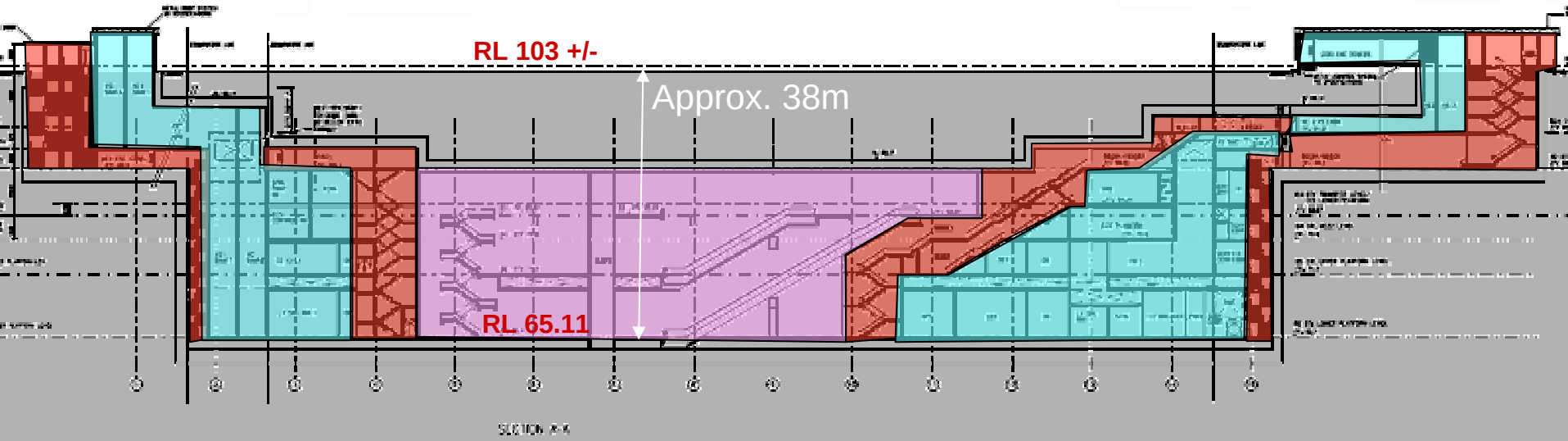
A GIANT INTERCHANGE



DHOBY GHAUT INTERCHANGE STATION

BRAS BASAH STATION

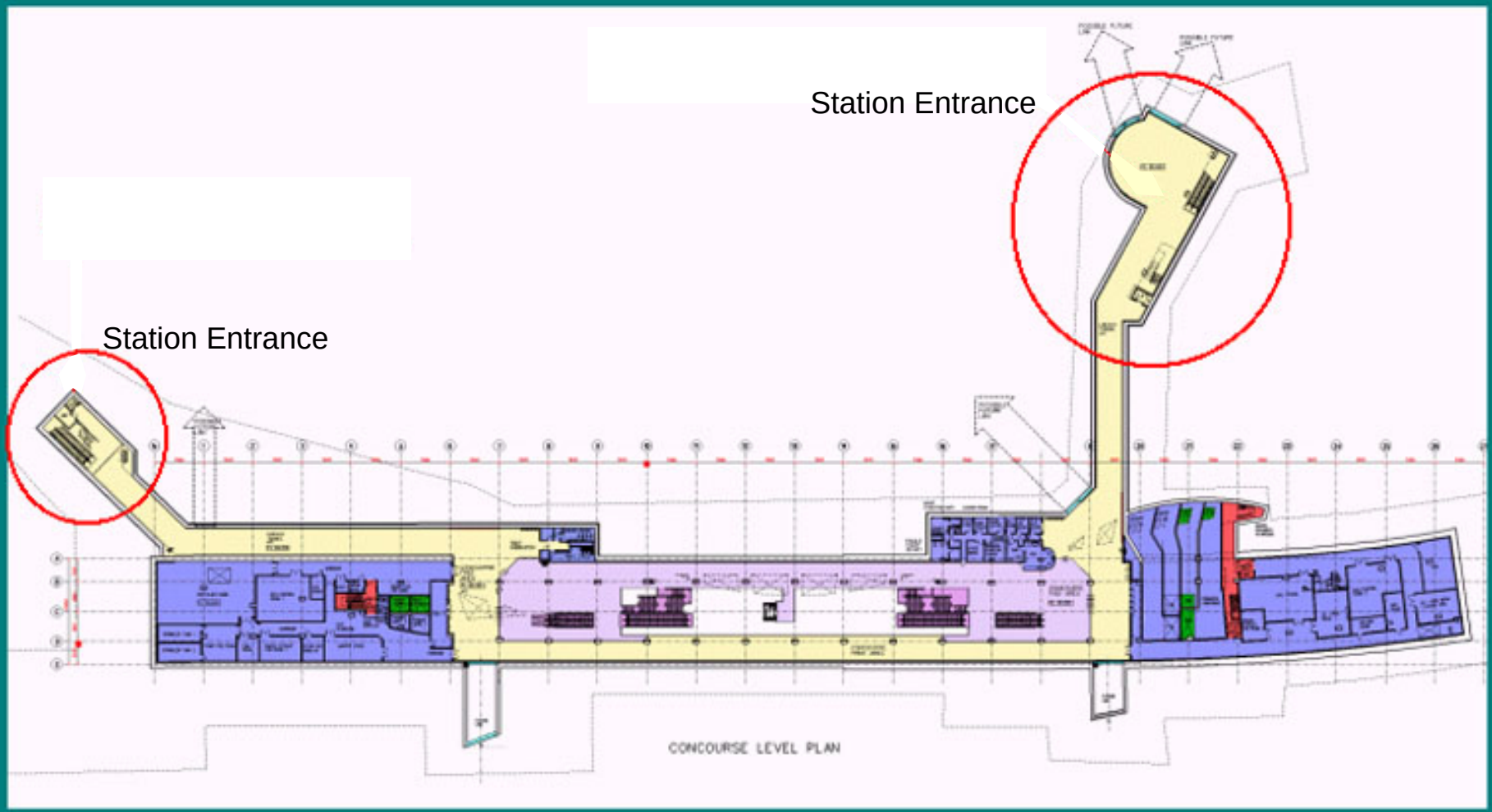




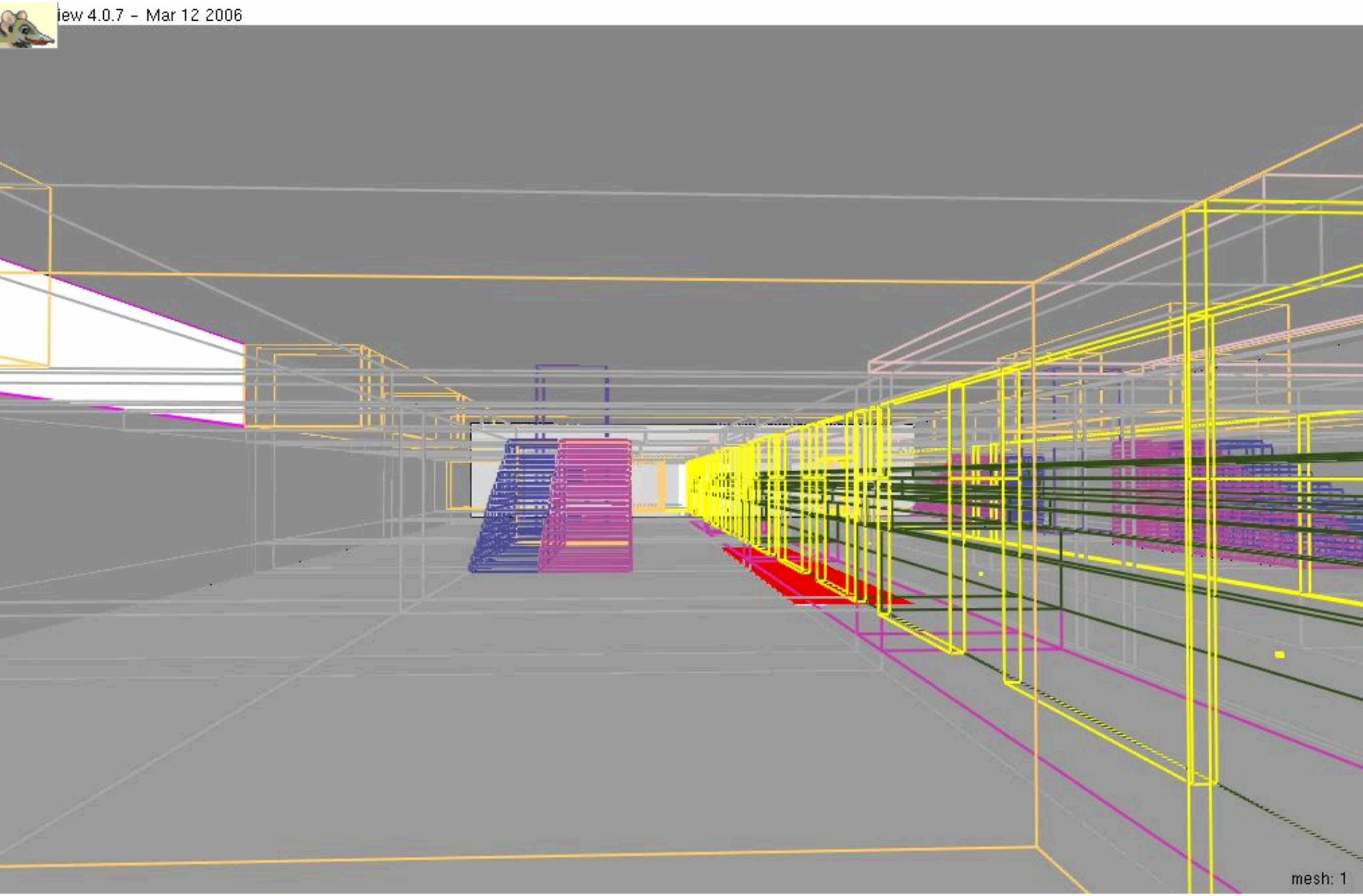
Public Area.

Escape & Fireman stairs

M&E Plant Rooms



CONCOURSE LEVEL – NEW LAYOUT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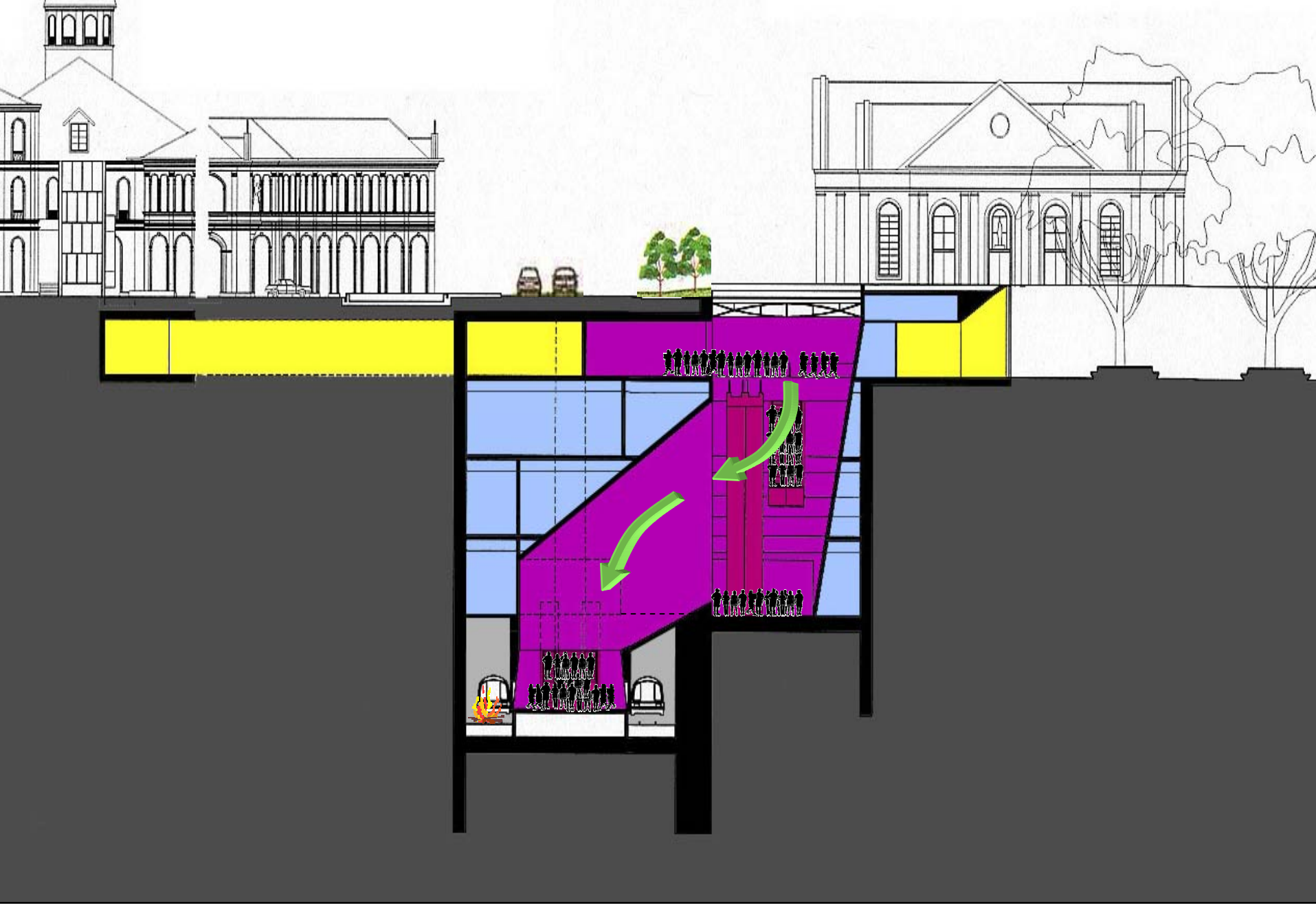
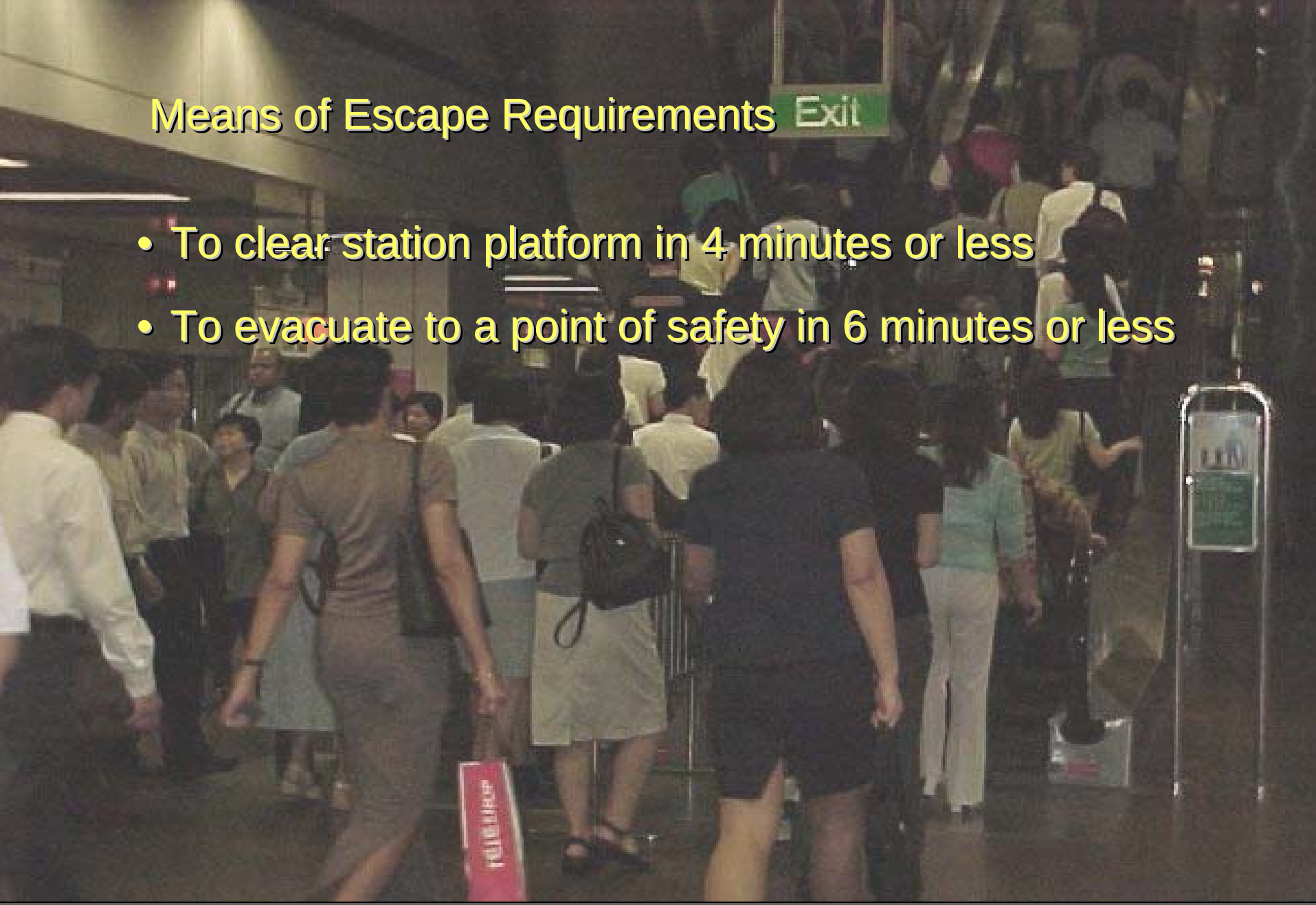
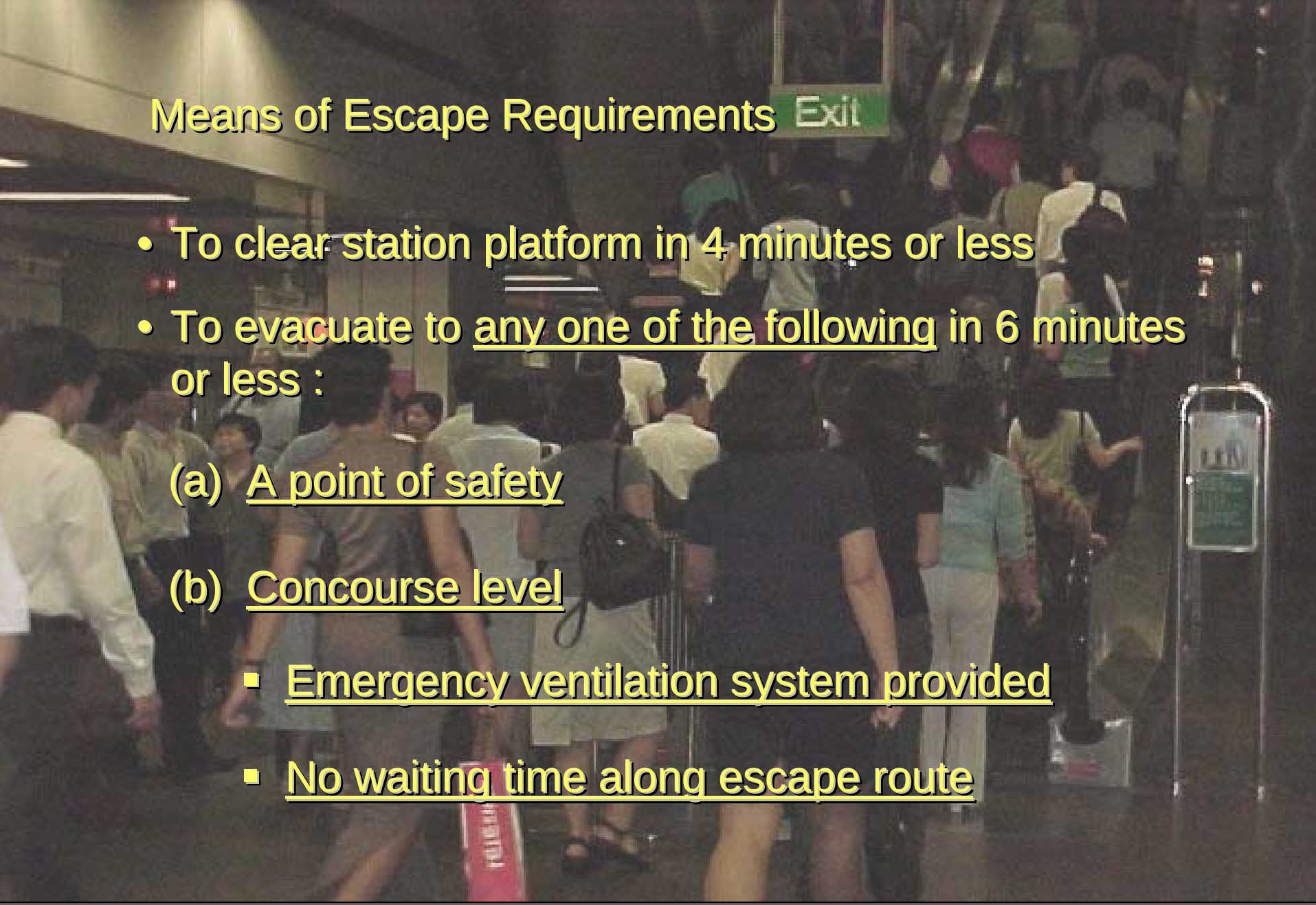




Means of Escape Requirements

- To clear station platform in 4 minutes or less
- To evacuate to a point of safety in 6 minutes or less



Means of Escape Requirements

- To clear station platform in 4 minutes or less
- To evacuate to any one of the following in 6 minutes or less :

  (a) A point of safety

  (b) Concourse level

  - Emergency ventilation system provided
  - No waiting time along escape route



Proposed Changes:

- Means of Escape
- Fire Rating
- Compartmentation
- Fire Protection

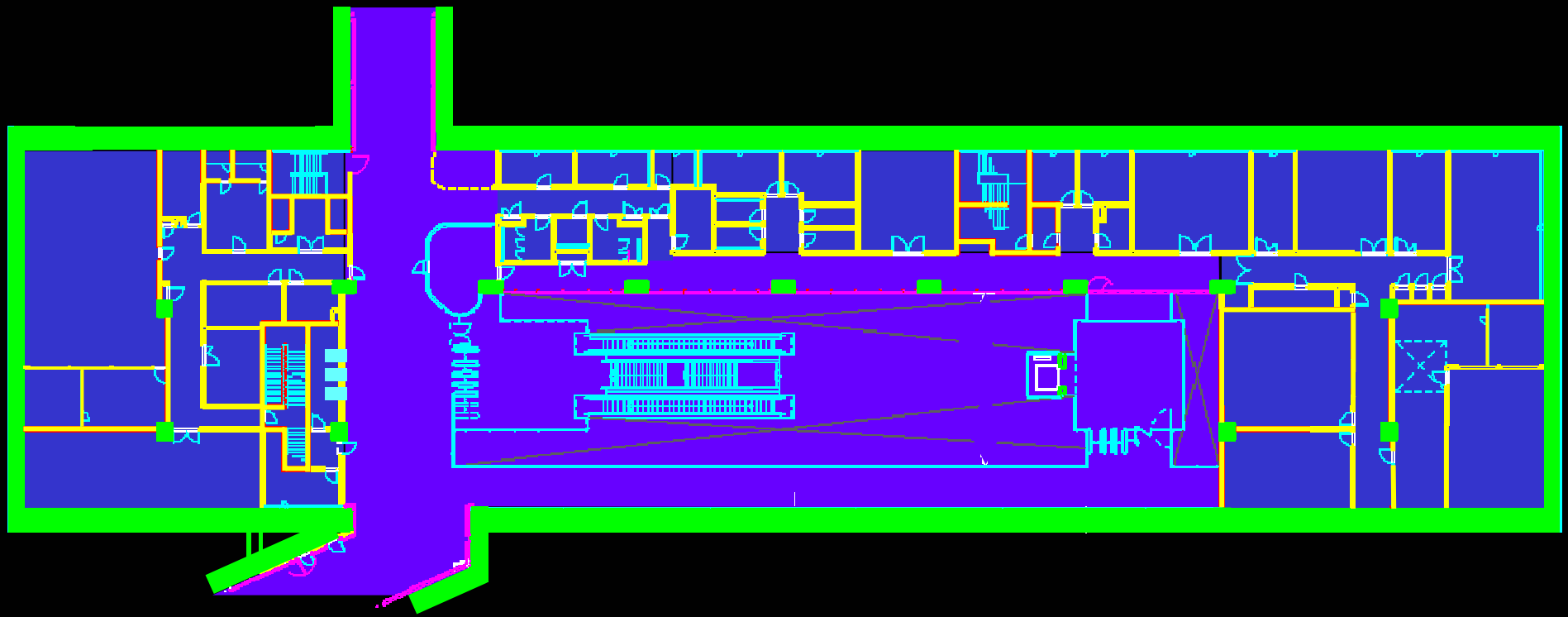
Fire Rating of Element of Structure

- The fire resistance of elements of structure for underground stations shall be not less than 4 hours.



Table 2.5A COMPARTMENTATION AND FIRE PROTECTION REQUIREMENTS

Usage (1)	Non-sprinkler protected building (2)		Sprinkler protected building (3)		
	Compartmentation (2a)	Door rating (2b)	Compartmentation (3a)	Door rating (3b)	Sprinkler (3c)
Low voltage switch room	2-hr	2-hr	2-hr	2-hr	EX
High voltage switch room	2-hr	2-hr	2-hr	2-hr	EX
Transformer room (oil type) [1]	2-hr	2-hr	2-hr	2-hr	EX
Fuel/Oil tank room	4-hr	4-hr	4-hr	4-hr	S
Generator room	4-hr	4-hr	4-hr	4-hr	S
Electric lift motor room [2]	2-hr	2-hr	2-hr	2-hr	EX
Hydraulic lift motor room [2]	2-hr	2-hr	2-hr	2-hr	S
Battery room (for essential equipment)	2-hr	2-hr	2-hr	2-hr	EX
Fire pump/tank room	2-hr	2-hr	2-hr	2-hr	S
Fire command centre	2-hr	2-hr	2-hr	2-hr	S
MDF room, PABX room	N	N	2-hr	2-hr	EX
			N	N	S
Public toilet [3]	N	N	N	N	S
Shop	2-hr	2-hr	2-hr	2-hr	S
Ticket vending machine room [3]	N	N	N	N	EX
Bin centre [5]	2-hr	2-hr	2-hr	2-hr	S
Tunnel ventilation fan room [6]	2-hr	2-hr	2-hr	2-hr	EX
ECS plant room	2-hr	2-hr	2-hr	2-hr	S
Electrical room	2-hr	2-hr	2-hr	2-hr	EX
Electrical closet	N	N	N	N	EX
Essential fan room [7]	2-hr	2-hr	2-hr	2-hr	S
Uninterruptible power supply room	2-hr	2-hr	2-hr	2-hr	EX
Pneumatic platform screen door room	2-hr	2-hr	2-hr	2-hr	S
Underplatform Services Duct [8]	2-hr	2-hr	2-hr	2-hr	EX
Civil defence room with storage	2-hr	2-hr	N	N	S
[illegible]	N	N	N	N	EX



Fire Rating of Element of Structure

- The fire resistance of elements of structure for underground stations shall be not less than 4 hours.



Fire Rating of Element of Structure

- The fire resistance of elements of structure for underground stations shall be as follows:

  (i) Structural frame of a station = 4 hours

  (ii) Load bearing wall = 4 hours

  (iii) Floor = 4 hours

  (iv) Separating wall = 2 hours

  (v) Compartment wall = 2 hours

  (vi) Protected shaft = 2 hours



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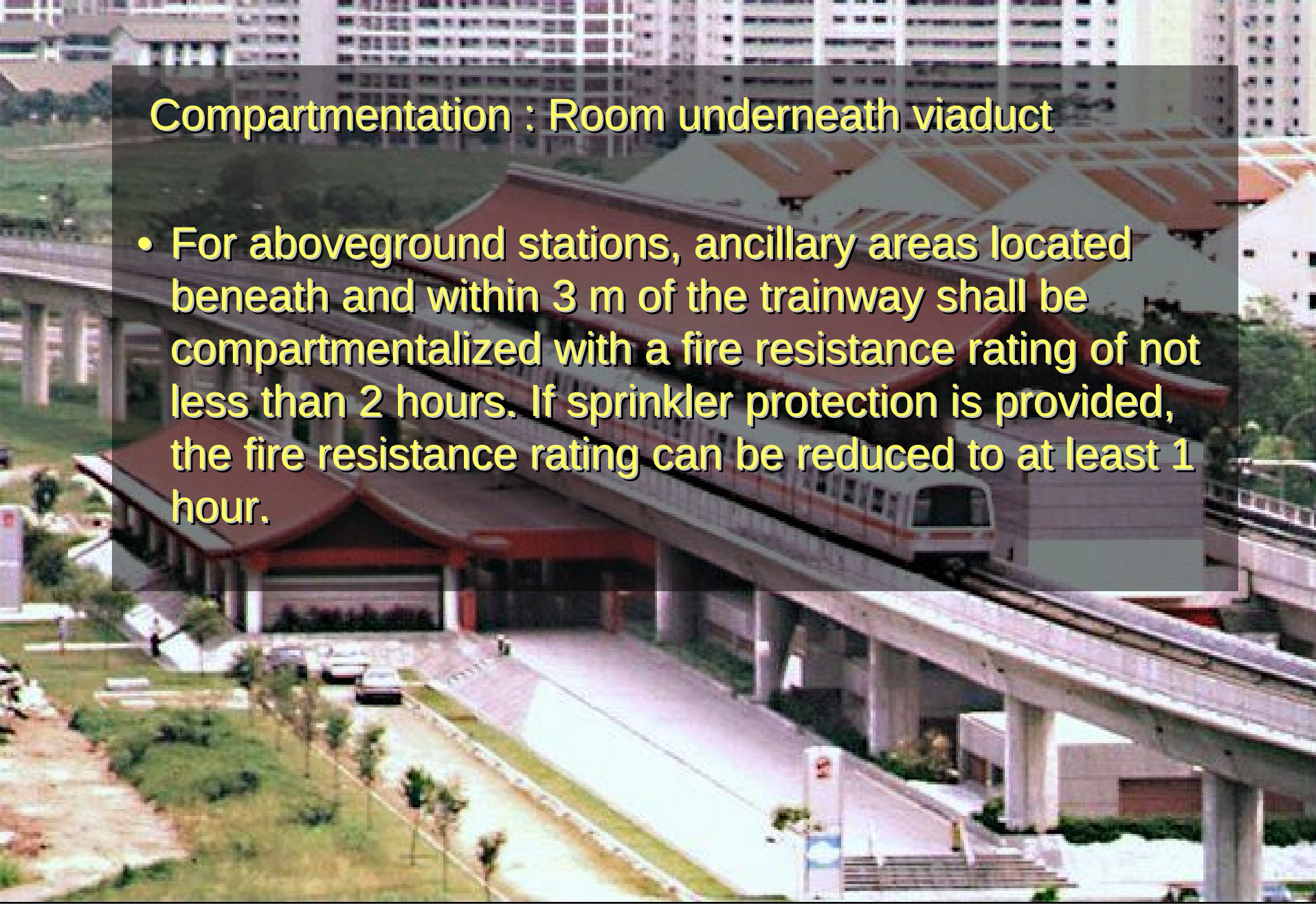

Compartmentation : Room underneath viaduct

- For aboveground stations, ancillary areas located beneath and within 3 m of the trainway shall be compartmentalized with a fire resistance rating of not less than 2 hours. If sprinkler protection is provided, the fire resistance rating can be reduced to at least 1 hour.

Compartmentation : Room underneath viaduct



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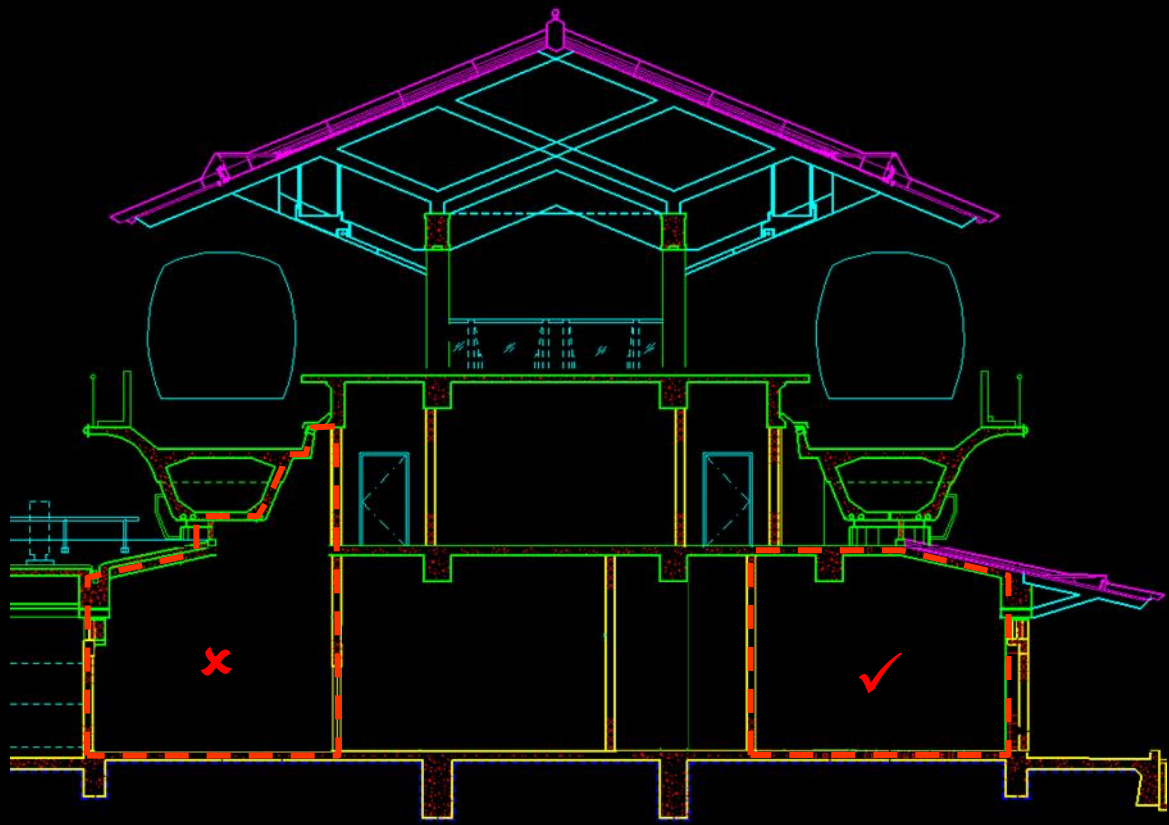



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Compartmentation : Room underneath viaduct

- For aboveground stations, commercial spaces and ancillary areas located beneath and within 3 m of the trainway shall be compartmentalized from the viaduct and its supporting structure by a fire resistance construction of not less than 2 hours. If sprinkler protection is provided, the fire resistance rating can be reduced to at least 1 hour.



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Fire Protection : Electrical Fire Alarm System

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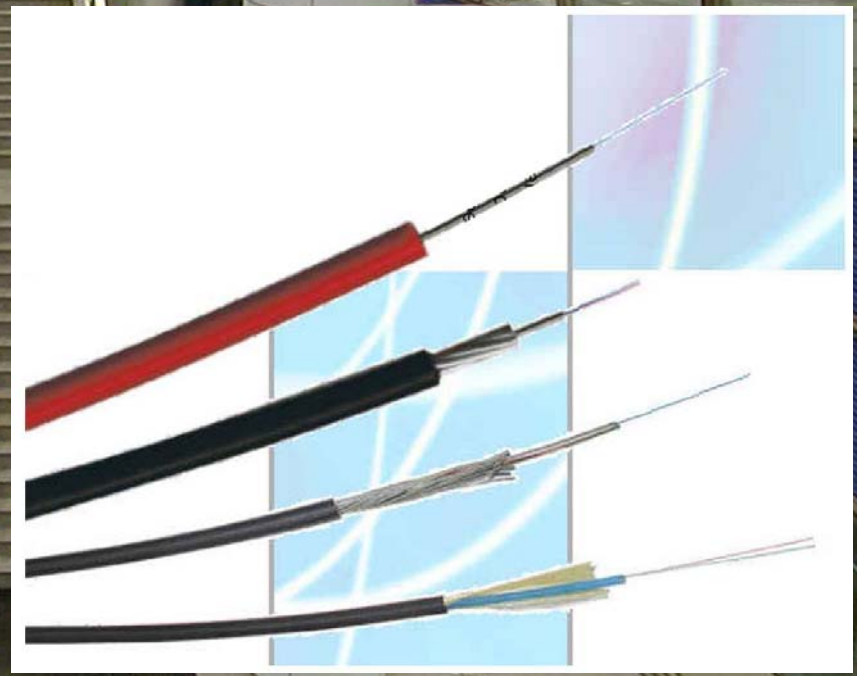
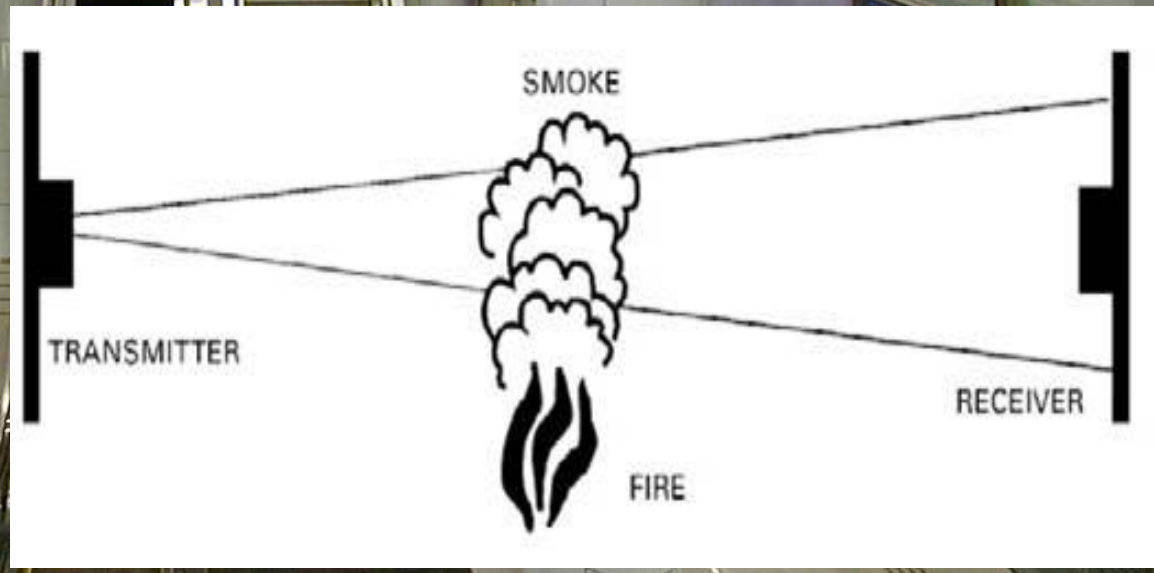


Fire Protection : Electrical Fire Alarm System





Fire Protection : Electrical Fire Alarm System

- For fire detection in station public areas, linear heat detectors of the fibre optic line-type and optical beam type detectors can be considered in the concealed ceiling spaces and under the ceilings respectively. Where linear heat detectors are used, the coverage shall be equivalent to the point-type detectors.



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THE END