

# Case Study Of The Marina Bay Suites & Other Residential Fires

9 Mar 2015



# Scope

- **Introduction**
- **What is Unique about Super High-rise**
- **Marina Bay Suites Fire / Gaps**

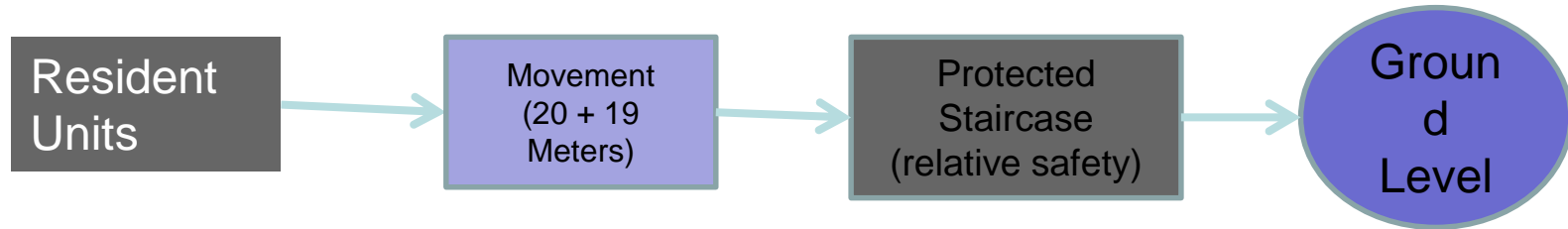
# What is Unique about Super High-rise

- Longer movement time thru staircase to safety
- Human fatigue(specially old and disabled residents)
- Higher chance of injury involved with full evacuation
- Unit is compartmented

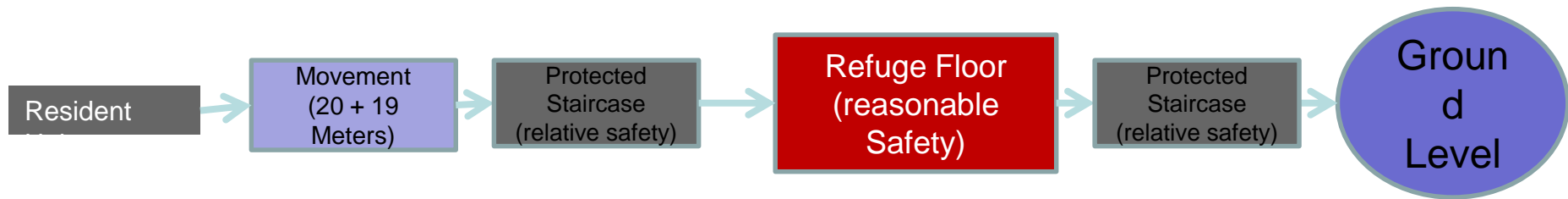
# What is the Purpose of Refuge Floor

- Refuge area has been adopted for usage to relieve the congestion in exit staircase/passage
- Offer a reasonably safe area to seek refuge (compartment/ventilation)
- Sufficiently remote from the effects of fire
- Situations whereby full evacuation not necessary

# Evacuation Flow Chart between Low-Rise & Super High-rise



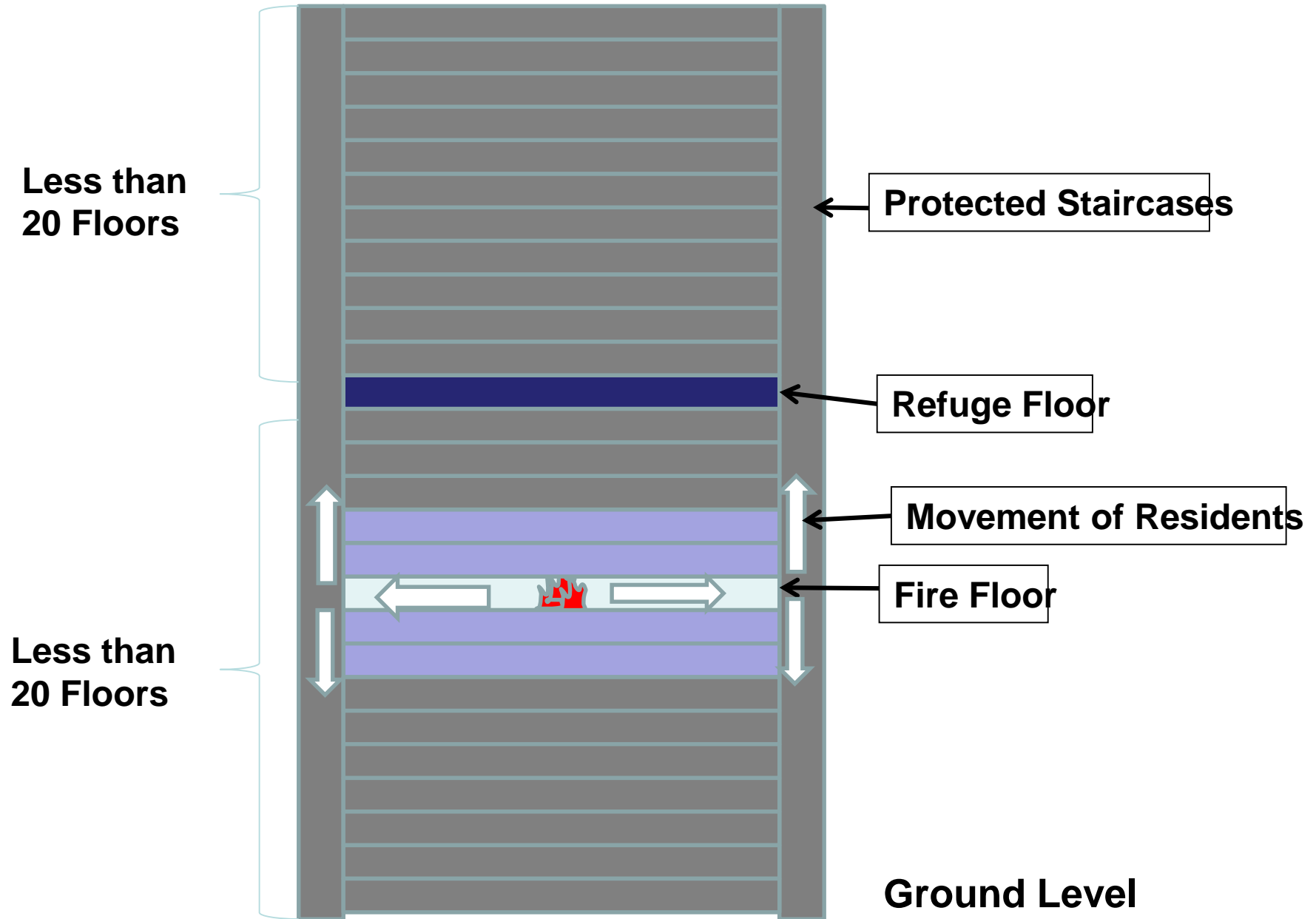
**Low-rise Building with Full Evacuation Mode**



**Super High-rise Building with Refuge Floor**

# Concept of Place of Reasonable Safety



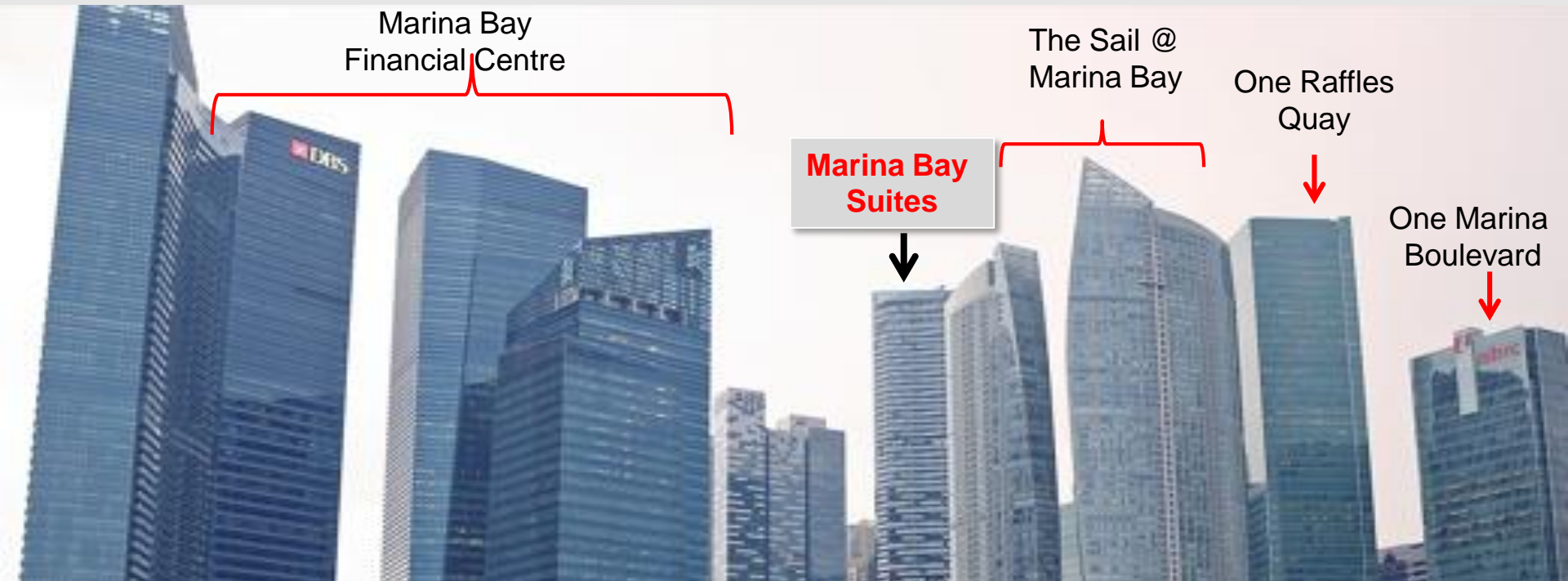


# What to Do in the Event of Fire

- If possible check that it is a confirmed fire or there is sign of fire or heat
- If there is any immediate fire risks then move toward the nearest exit staircase
- If you can identify the fire risks to be reduced significantly, then you may decide to seek refuge at the refuge floor (ensure that the staircase remained accessible at all times in case you need to evacuate when the situation worsen)
- Wait at the refuge floor and if need help can use the intercom at the lift lobby to call for assistance

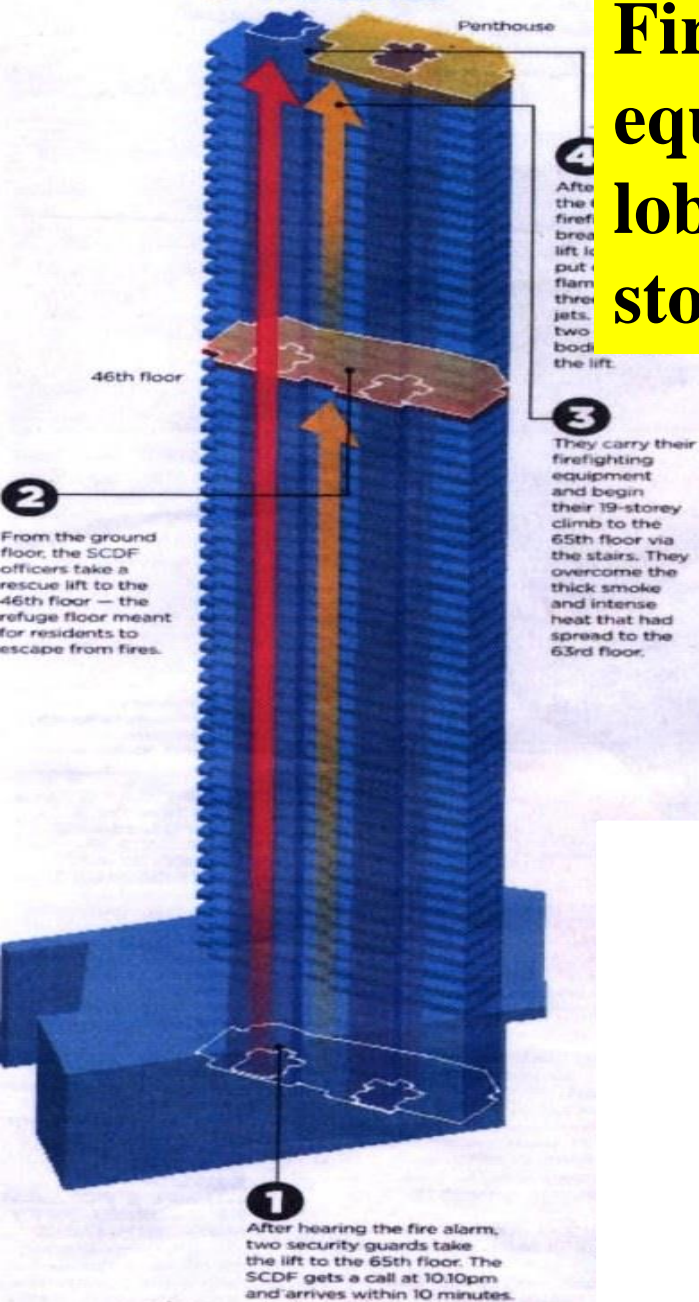


# Marina Bay Suites Fire / Gaps



**Incident No** : /20140113/0915  
**Incident Date/Time** : 13 Jan 14 @ 21:34:58 hrs  
**Location** : Marina Bay Suites  
No. 3, Central Boulevard  
Singapore 018965.

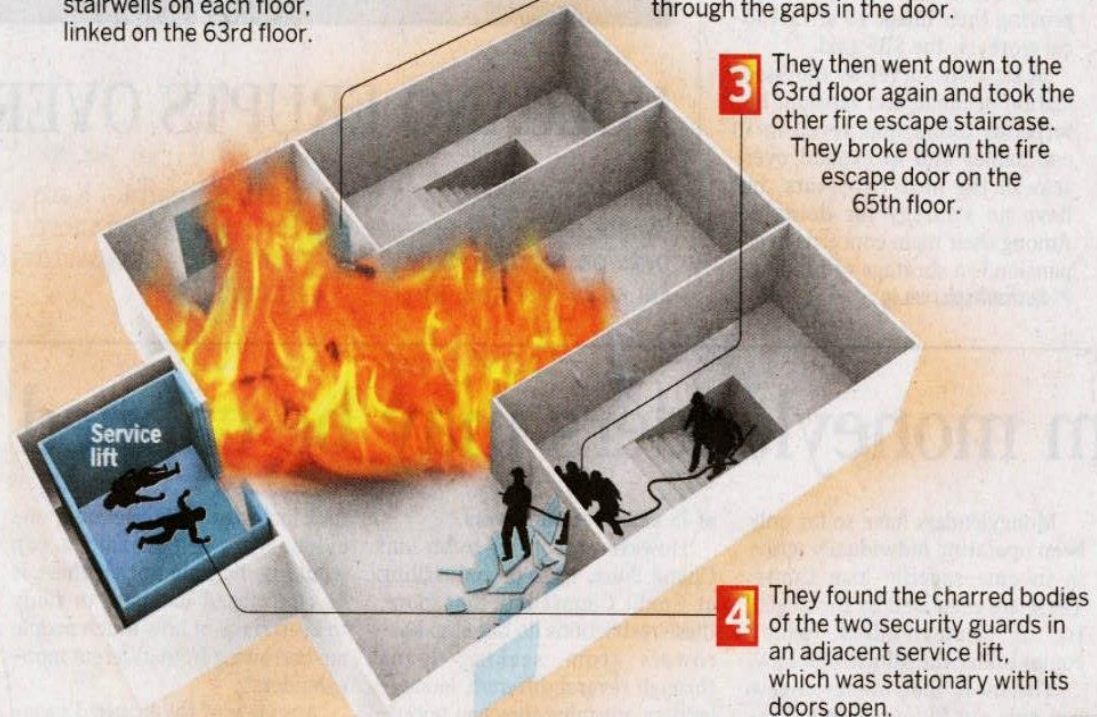
## WHAT HAPPENED AT THE SUITES



**Fire involved renovation materials and equipment placed at the fire fighting lobby, (Fireman Lift 3) at the 65<sup>th</sup> storey. 2 lives were lost in this fire.**

## WHAT HAPPENED

- 1** Singapore Civil Defence Force officers used the 63rd floor lobby as a point from which to carry out their fire fighting operations.
  - There were two fire escape stairwells on each floor, linked on the 63rd floor.
- 2** They got to the 65th floor but could not get past the door to the lobby as it was too hot to open.
  - Smoke was also entering the stairwell through the gaps in the door.



NOTE: Drawing not to scale.



# Fire Hazard Violations

**FH Violations at storey 1, 47, 50, 62 & 65  
Involving the obstruction to fire protection systems and  
placement of combustibles along common passageways.**

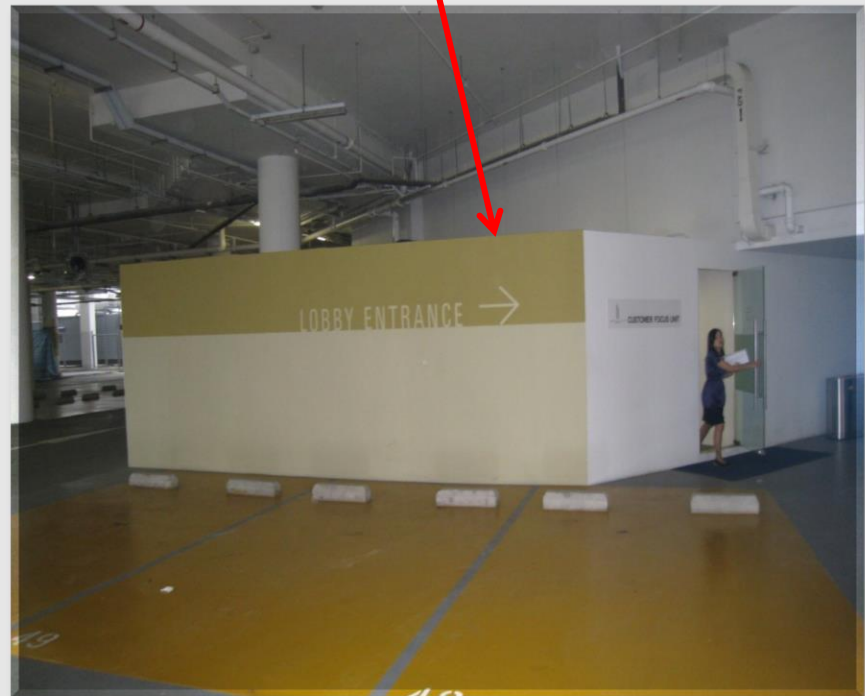


# Fire Hazard Violations

## FS Violations at 5<sup>th</sup> Storey Carpark



Unauthorised Change of Use  
/Structure at Car Park



# Identified Gaps

- 1. Correct operations of fire lifts in the event of fire**
- 2. Management of common areas especially during renovation works**
- 3. Training and enhance fire safety knowledge of security guards / staff to handle fire emergencies**



Q & A ?