What’s Next for Fire Safety in Tall Buildings?

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Tall Building Fire Safety Network -

• Over 1200 members in 21 Countries
• Promote information sharing and best practice
• 5 International Conferences to date
• Linkedin Group
• Calling for International action on ACP panels since 2012
Key Messages

• Tallbuildingfiresafety.com
• Tall Building Fire Safety Management Training – IFE recognised
• Hyde Housing Fire Safety Framework
• Crisisboardroom®
• 6th International Tall Building Fire Safety Conference
What’s Next?
Tall buildings 200 meters or taller completed each year from 1960 to 2015

Total Number of 200m+ Buildings in Existence in each decade from 1920 to 2015
BIM
BIM – Building Information Modelling

- Is an industry game changer
- Is not about 3D graphics
- It is about DATA
- It is about de-risking construction
- It is therefore about efficiency
- Faster cheaper better in every way
- Clients want it
- You need to engage with it
BM = Building Model
(3D without information)

BIM

Material Information
Product Information
FM Information
Cost Information
Resource Information
Procurement Information
Relationship Information

Geometric Information

Detailed Design
Project Type
Energy Analysis
Process
National Requirements
BIM enabled technology-
Emulation
Virtual Reality
Augmented Reality
New Materials & New Techniques

- New methods of construction
- Tall Timber
- New composite materials
- Green Walls & Roofs
Sky City

838 meters tall
202 floors
Mixed use
30,000 residents
7 month build time
Lacrosse Building, Melbourne
November 25, 2014
23 storey tower
13 floors in 11 minutes

Non-combustible core
Ideas for Improvements:
Design Tactic

1. Define what ‘Tall/High Rise’ means;
2. Include design objectives of fire safety resilience;
3. Mandatory requirement for a complimentary management system within the design fire strategy;
4. Mandatory requirement for a competent fire engineer to be appointed at concept stage, and be accountable for the status of fire safety throughout the project;
5. Fire safety risk rating system should be displayed in the entrance to the building;
Construction Tactic

1. Construction process can only commence when a fire strategy ‘phasing’ process has been agreed;
2. Construction process can only commence when there is a proven firefighting capability on site
3. New products and processes need to be established for achieving temporary horizontal and vertical fire compartmentation during construction, i.e. lift shaft openings;
4. A complete suite of building fire safety information, plans and specifications should be available to the occupiers of the building prior to occupancy;
5. ‘Hot smoke’ tests should be used to test compartmentation and fire detection ‘cause and effect’ systems
Prevention Tactic

1. Competent fire safety manager;
2. Fire risk assessments completed by a competent fire safety professional;
3. Provide guidance on the type 4 invasive fire risk assessments;
4. Mandatory fire safety training for all occupants (including residential) on order to ‘have license to occupy’;
5. ‘Rights of Entry’ processes with appropriate safeguards to facilitate challenging of socio-economic issues such as ‘cramming’ (overcrowding) and hoarding (excessive fire load) including use of Drone surveys;
IFE Recognised
Training –
Tall Building Fire
Safety Management
Course
Detection and Alarm Tactic

1. Detection and Alarm systems must have the resilience and flexibility, i.e. invacuation to phased, stay put to simultaneous;
2. Utilise multi sensor heads to reduce false alarms;
3. Undertake full ‘cause and effect’ testing of systems;
4. Undertake multiple simultaneous zone activation testing of systems to simulate smoke travel in a Tall Building
5. A degraded system process
Escape Tactic

1. Improved visible floor numbering systems;
2. ‘You are here’ orientation diagrams for wayfinding assistance;
3. Improve evacuating occupant ‘situational awareness’ by means of information systems, i.e. reverse 999 text messaging from emergency services;
4. Progress towards an evacuate and disperse process;
5. Use photoluminescent materials and intelligent signage to increase evacuation wayfinding efficiency;
Compartmentation Tactic

1. Sprinklers are mandatory in Tall Buildings;
2. Only non-combustible finishes to be used on external and internal walls within Tall Buildings;
3. Mandatory annual fire compartmentation audits to ensure integrity of passive fire barriers;
4. Compartmentation plans to be readily available for contractors, and permit to work schemes operated for fire barrier penetrations:
5. All fire walls and floors to be marked and signposted in voids and non-public areas, i.e. FIRE WALL DO NOT PENETRATE WITHOUT PERMISSION;
Firefighting Tactic

1. Review breathing apparatus procedures in light of recent Tall Building Fires;
2. Fire floor and ‘highest known safe floor’ placards for use in lift/elevator cars;
3. Pre-planning for impact zone around a Tall Building, to reflect hazard of falling debris;
4. Wind speed and direction gauges located in the FCC or reception area of the Tall Building;
5. Mandatory testing of firefighting water flow rates at the highest level in the building;
BCP and Crisis Response Tactic

1. Mandatory requirement for a plan that covers ‘denial of return’ for occupants of a Tall Building following a fire; i.e. where will they go?

2. Salvage plans to mitigate and minimise the effects of large volumes of water in the building
What do you do if confronted with the aftermath of a tall residential building fire and 800 occupants who need to be rehoused?
Concluding Comments

• We are going to building more tall buildings, with different materials, methods of construction, at a faster pace to cope with population growth and urbanisation

• Current Fire Safety Practice; testing, design guidance, building control, construction, commissioning, management and firefighting – are not ‘fit for purpose’

• Follow developments on twitter feed @tallconf

• Meet colleagues from around the World at our conference in London 18-20 June 2019 at FIREX
6th International Tall Building Fire Safety Conference
18-20 June 2019 at Excel, London
BRUM20 20% discount rate
Any Questions?

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