



Panel Discussion

Fire and Emergency NZ

draft on

Evacuation of Persons Requiring Assistance





WHAKARATONGA IWI

FIRE
EMERGENCY

NEW ZEALAND

LIFTS FOR EVACUATION PART 2

A FENZ perspective



Today's Session

- Focus is on evacuation of people who require particular assistance
- Lifts for evacuation of ambulant people may be a design consideration for some buildings
- Not the focus of today's discussion however



Regulatory Context – Building Code

- The use of lifts during a fire event not permitted under D2/AS1
- No specific consideration under C clauses
- Use of lifts for evacuation can only be considered on a performance basis for NZBC Clauses C4 and D2
- Currently no New Zealand guidance for what this looks like

OBJECTIVE

D2.1 The objective of this provision is to:

- (a) Safeguard people from injury and loss of amenity while using mechanical installations for movement into, within and out of *buildings*,
- (b) Safeguard maintenance personnel from injury while servicing mechanical installations for access, and
- (c) Ensure that *people with disabilities* are able to carry out normal activities and processes within *buildings*.

C1—OBJECTIVES OF CLAUSES C2 TO C6 (PROTECTION FROM FIRE)

Provisions

The objectives of clauses C2 to C6 are to:

- (a) safeguard people from an unacceptable risk of injury or illness caused by *fire*,
- (b) protect *other property* from damage caused by *fire*, and
- (c) facilitate firefighting and rescue operations.

Standards Review

- Look to international quality standards
- European, Asian and US consideration
- Many standards/guidance documents are vague and provide high level guidance only
e.g. BS 9999 talks about a 'suitable risk assessment'

Does not specify performance requirement for lift car

Open to difference of opinion

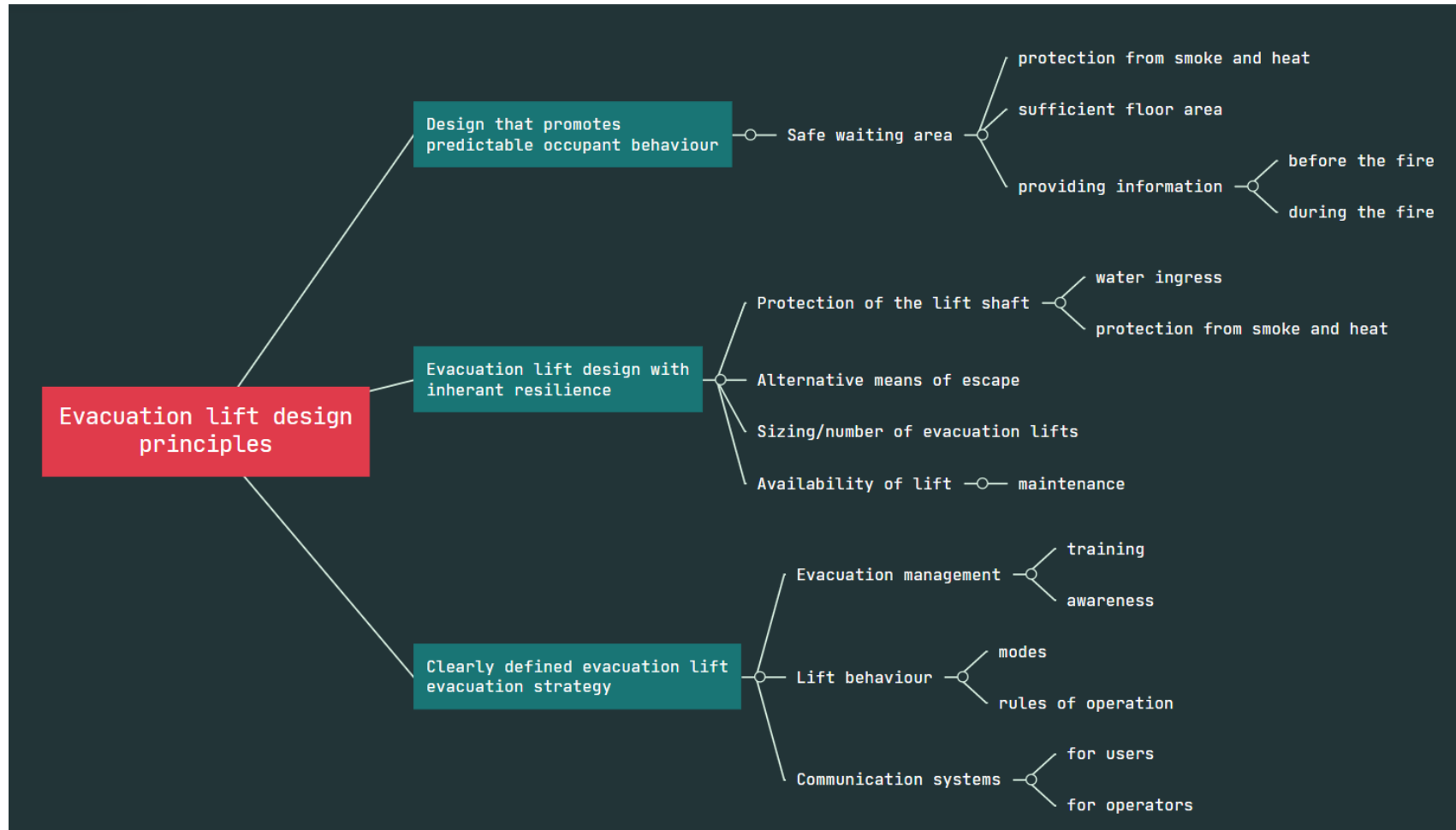


- Best quality standards out of Europe

Use of Overseas Standards - Risks

- International standards developed in the context of their local regulatory environment
- Implicit assumptions over features in the building that may not be specified by NZ regulations
- Use of international standards has potential to create safety gaps

Evacuation Lift design principles



Design Considerations

Performance Requirement	Specific Requirement
Lobby protected from effects of fire and smoke	Fire rating of lift lobby
	Protection against smoke ingress
Occupants must have options	Access to a stair - without going through fire affected space
	Signage and communication
Reliability of lift operation	Protection against water ingress
	Power supply redundancy
Capacity of lift systems	Sufficient size and number of lifts
Lift Egress	Into a space not affected by fire
Consideration of mechanical failure	Provision of an escape hatch
Operation during emergency	Adequate management/programming

Setting the Scene

- An 'evacuation lift' is a system
- It includes the lift car, the lift shaft, the lobby and an associated stair
- Not the same as a fire fighting lift
- Some manufacturers have products that can meet both roles

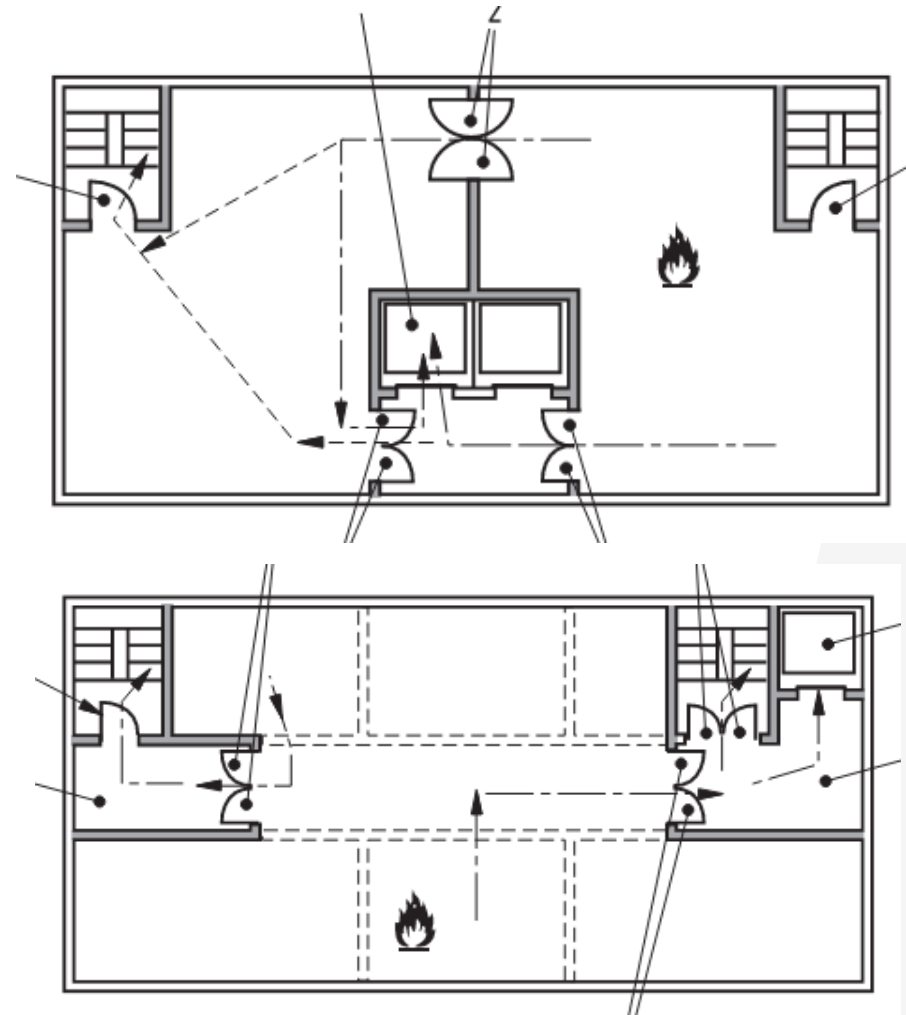
Signage & Communication

- Changing habits over use of lifts in emergencies
- Occupants need good quality information to make good quality decisions
- Signage needs to be clear
- Avoid confusion and manage expectations
- Not covered in Firefighting lift standard (EN 81-72)



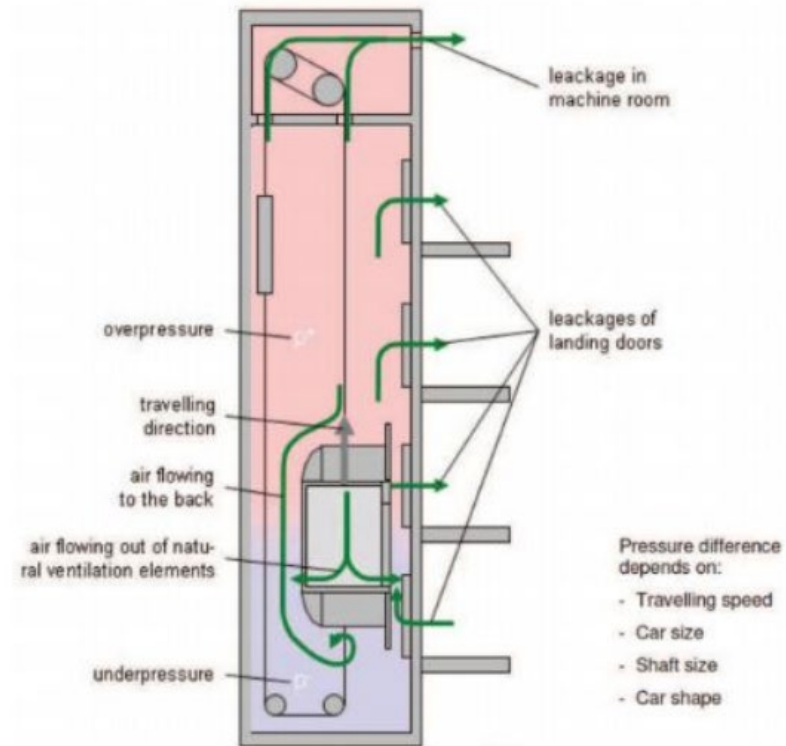
Lift Lobby

- Considered as part of the exitway
- Not an 'Internal Place of Safety' but similar
- Considered to be a 'place of relative safety'
- Fire rated from surrounding spaces
- Lobby also aids management of occupants



Lift Lobby – Smoke Control

- Protect lift lobby and shaft against smoke ingress
- Consider piston effect of lift car movement
- Induced air movement within the building - including the space on fire
- Not normally considered as lift stopped on fire signal



Lift Car

- Appropriate standard is EN-81-76 (when finalised)
- Addresses most of the issues identified previously
- Other standards also appropriate but would be assessed against same criteria
- Cherry-picking from multiple standards not supported
- More stringent local requirements (e.g. seismic) complied with in addition



Sprinklers?

Fire agencies worldwide divided on requirement for sprinklers

Balancing accessibility with occupant safety

Interim position -> Sprinklers required

Subject to further work



Clashes with Sprinkler Standard

EN 81-76 para 5.2.5 (Draft 2019 – removed from 2022 version)

Lift lobby, machine room and shaft shall not contain sprinklers

NZS 4541:2020 para 5.10.3
(paraphrased)

All lifts shafts inside sprinklered buildings shall be protected by sprinklers

Consider the risk and discuss way forward with stakeholders (including SSC)





ORBITZ
ELEVATORS
YOUR LOCAL CUSTOMER SERVICE EXPERTS

Mihi nui ki a koutou
Thank you

