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Manager Compliance

Kainga Ora – Homes and Communities



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Equitable Egress A Social Housing Context

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Introduction

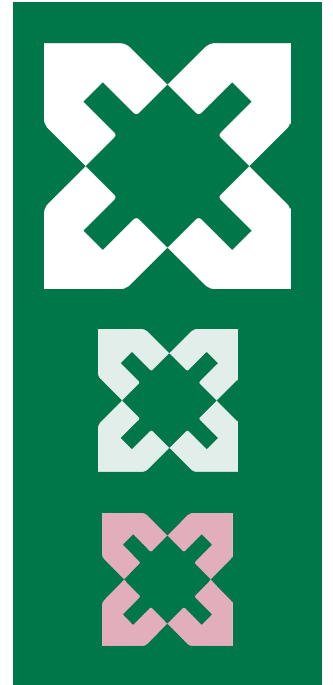
About me

- Manager Compliance Kāinga Ora
- Previously worked as a Building Compliance and Fire Protection Consultant and Fire Protection Contractor, in roles from on the tools and in the field to Senior Management
- Registered IQP – for a large cross section of active and passive systems
- Currently completing a NZDE Fire Engineering
- Authored fire reports and evacuation schemes for a large cross section of buildings during the 25 years in the building compliance and fire protection industry, including buildings with defend in place strategies
- Schemes I have personally developed include Paremeremo (Auckland Regional Prison), Parliament Buildings, Christchurch Justice and Emergency Services Precinct)
- I am passionate about fire safety and building compliance, and have a particular interest in the Equitable access topic. A topic that I believe has had limited industry exposure



Agenda - What we are covering today

- Context regarding fire statistics within the Kāinga Ora Portfolio
- The Kāinga Ora “Compliance Portfolio”
- MOU with FENZ
- The challenges of evacuation in a social housing Context
- Equitable Evacuation in a social housing context, implications of the changes the fire safety and Evacuation of Building Regulations
- Arlington Journey – 1st approved Lifts for evacuation in NZ
- Considerations regarding ongoing compliance requirements
- Questions



Kāinga Ora Portfolio

- Over 69,000 individual Properties
- 1723 Individual Buildings (apartment Complexes, Supportive Housing, Community Group housing (CGH))
- 691 Individual BWOFF
- 895 Community Group Housing Properties
- 66479 individual inspections
- 1098 Trial evacuations per annum

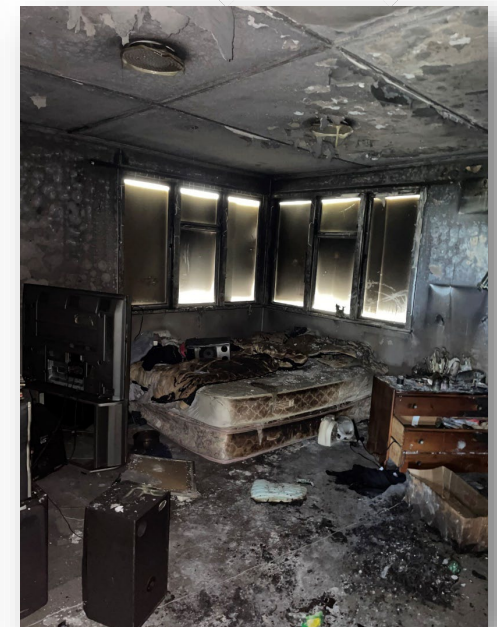
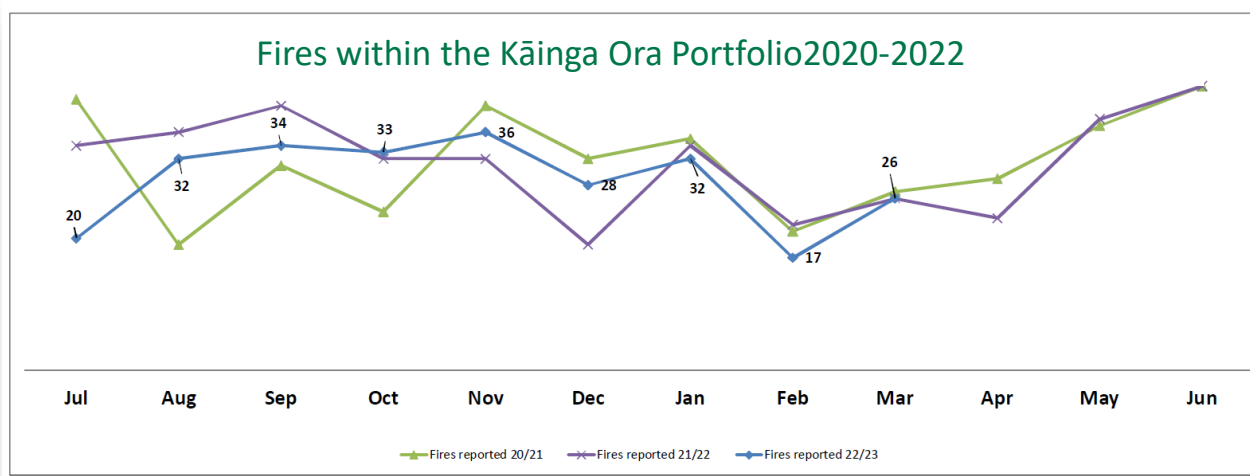
Kāinga Ora Compliance Team

- Dedicated team
- Contract Management
- Internal SME, IQP, Engineers,
- Advice to Internal Stakeholders
- Fire Safety, Building Compliance, Fire Protection, Fire evacuation
- Fire Safety Policy
- Leads For a number of initiatives and improvements relating to our area of influence



Fires within the Kāinga Ora Portfolio

- Fires do occur within the Kāinga Ora Portfolio.
- We average over 383 fires per year in our homes. [3 year average 2020-2022] with averages of 45 injuries and 2.2 deaths per annum.
- 12% of all residential structural fires nationally occur in the Kāinga Ora Portfolio [Data from FENZ and Kāinga Ora fire incident databases]
- Impacts to customers, displacement, available homes
- Primarily route cause - 48.5% unattended cooking



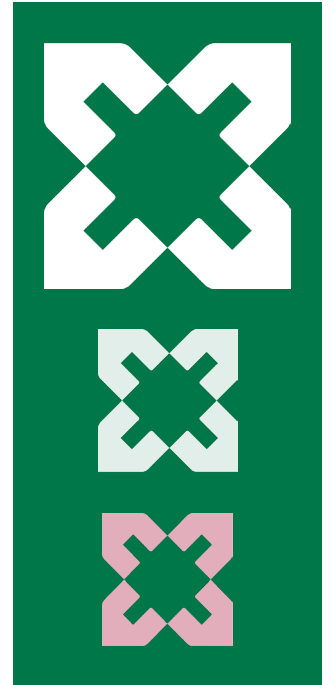
MOU – Fire and Emergency New Zealand

There is a Memorandum of Understanding in place between Kāinga Ora and FENZ

The key shared goals of the MOU are to:

1. Enhance safety and wellbeing of FENZ Personnel, Kāinga Ora Customers and the wider community.
2. More Effective service delivery
3. Improved technical co-operation

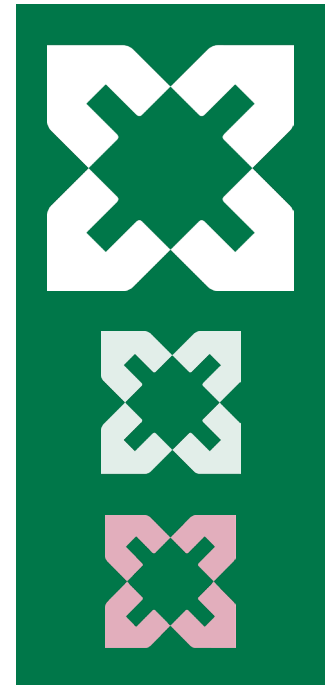
There are a number of initiatives where FENZ and Kāinga Ora are working in collaboration, including specified developments, community education, Residential Sprinkler system pilot and other specific projects, such as the Arlington project



Challenges of Evacuation in a social housing Context

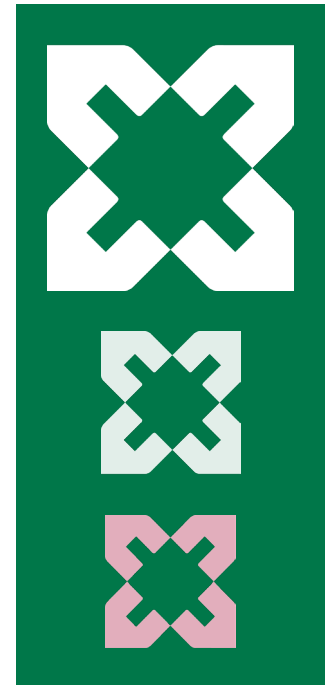
Evacuation needs and requirements in a social housing context do present a number of challenges

- Diverse portfolio with some unique complex needs and requirements
- CGH – Housing those with Complex needs, sometimes this means bespoke solutions to meet to the need to lock down a property to protect occupants safety to themselves and others. – access control and voluntary schemes in place with assembly areas inside the property boundary
- Education and behaviour management
- Training requirements
- FENZ encountering issues of social cohesion
- False alarms and tying up of FENZ resources, appropriate active system selection and specification



Equitable Evacuation in a social housing Context

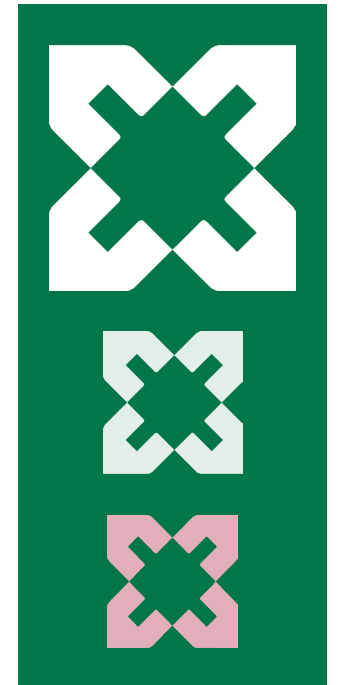
- Where Kāinga Ora houses “Persons that require particular assistance” this becomes a challenge in a social housing context in that meeting obligations, in terms of using purpose built evacuation equipment such as stair chairs, is not a feasible or workable option. Use of such equipment requires:
 - regular training of building occupants
 - the equipment would need to be in situ
 - other building occupants (customers) would be required to use the equipment provided to evacuate their fellow customers from the building
- The above approach can be demonstrated in private apartment blocks where dedicated and reliable fire wardens are trained, but in a social housing context this cannot be proved to be an effective or reliable approach
- Traditionally Kāinga Ora would house “persons requiring particular assistance” on the ground floor of what we deem a complex. This approach no longer applies for current designs where fully accessible or full universal designs are proposed
- As a policy position Kāinga Ora require evacuation schemes for all relevant buildings, even if a sprinkler exemption is permissible, noting that commercial or office space in a building would preclude the potential for a sprinkler exemption to be used



Equitable Evacuation in a social housing Context

- In 2020 Kāinga Ora's Accessibility policy came into place
- The policy sets a commitment to ensure a higher percentage of our homes were to meet the range of accessibility needs of customers
- Tenancy and placement are crucial considerations
- Approach of housing persons, requiring assistance, on the ground floor of high rises is not sustainable and not often appropriate

Standard	Full Universal Design (FUD)	Accessible
Homes that meet our 'typical' requirements and include some universal design features but – for a range of reasons – cannot meet FUD requirements	Homes considered to be more liveable for the entire population and are – or can be made to be – fit-for-purpose for most customers. These homes include all universal design features seen in 'standard' homes.	Include all features of universal design seen in FUD homes but go <i>above and beyond</i> those requirements to support customers living with a disability



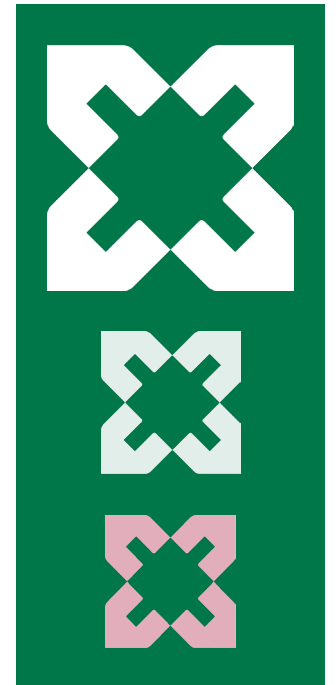
Arlington

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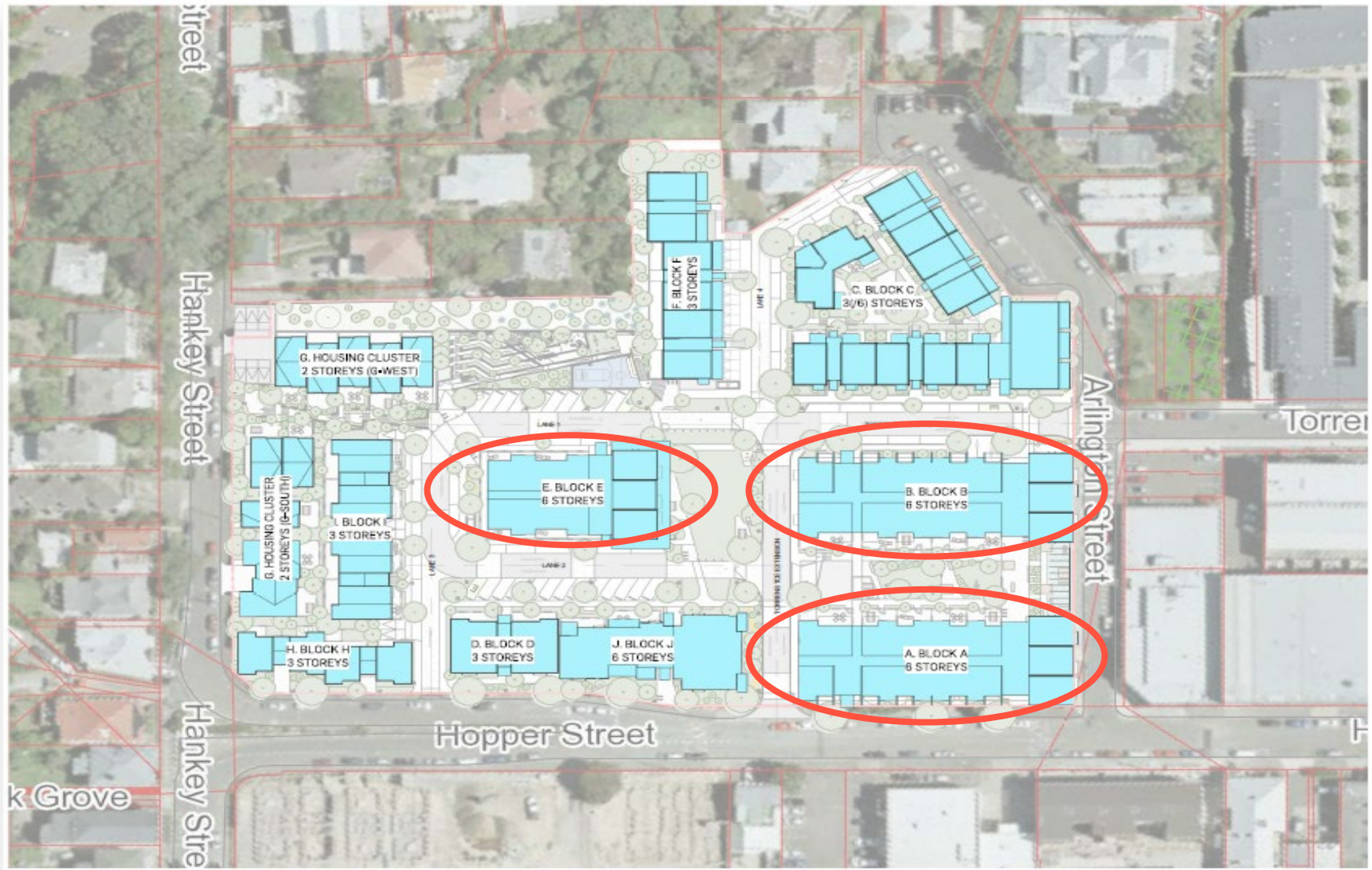
The approach used for this project is not “The Answer” for providing Equitable Evacuation it is a bespoke solution specific to this project, and the challenges of social housing and managing Kāinga Ora evacuation obligations and meeting Kāinga Ora obligations under regulations.

The Development

- Arlington is the redevelopment of an entire city block, formerly social housing which was part of WCC social housing portfolio
- Multiple building configurations involved in development of 3 story walk ups to apartment complexes
- 3 Building will have lifts for evacuation
- 6 Storey with a universal design aspect to provide customers with accessible needs.



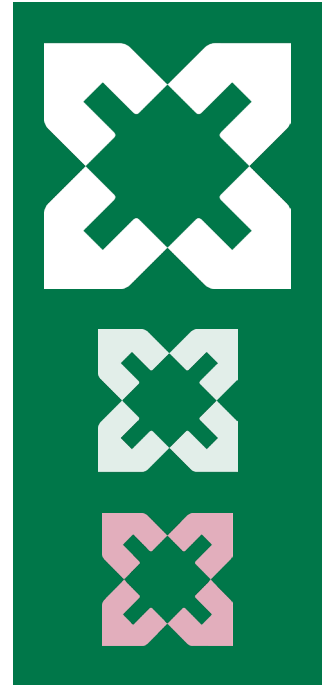




Arlington

The Process with Arlington

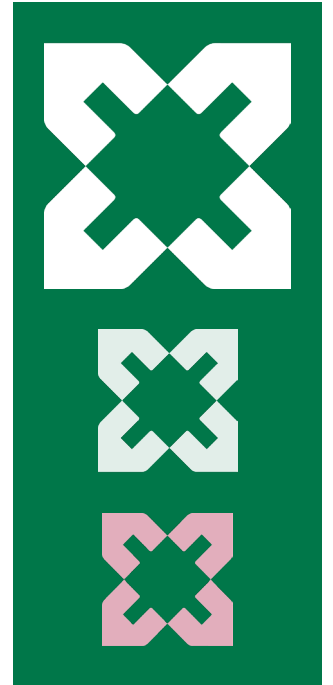
- The current Arlington project involved a collaborative approach, between the Kāinga Ora Compliance team, FENZ and the design team, to enable FENZ to be comfortable with the proposed approach for the use of lifts for evacuation; this was the first (and still is the only) project in which lifts for evacuation has been approved in New Zealand
- Essentially a FEB process outside the consent process
- To enable this approach to be accepted concerted consultation occurred between the fire engineers, FENZ (both fire safety and the Engineering team) and the Kāinga Ora compliance team. A final acceptable design was approved after a period of months in develop and several iterations
- The Buildings involved designs fully complied with C/AS2
- The Approach used was not about the Building code it was about going beyond the minimum and proving tenability with extensive modeling needed to provide FENZ with an appropriate level of comfort



Arlington

The Design and Considerations

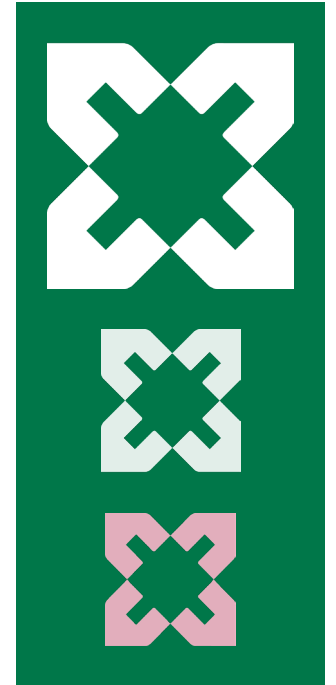
- Provide an apartment allocation management plan where occupants unable to evacuate via the stairs are prioritised to the ground floor apartments and general occupants and people with non-mobility disabilities are located on the floors above
- This is to be maintained for the life of the building
- Occupants requiring lift evacuation which are allocated to upper-level units shall be trained in the use of the evacuation lift
- Increase the fire rating around the lift shaft to achieve a 120-minute fire rating. The lift shaft is proposed to have a higher fire rating as it will need to serve all the floors during an evacuation
- Provide emergency lighting within the lift cars
- The lifts and emergency lighting are to have a secondary power supply (UPS, Generator) or have an independent power supply from the building mains or sub mains. All related cabling is to be fire rated
- Provide a Class B enhanced smoke detection system within the corridors as a form of early detection and to provide control signals to the fire alarm panel and/or lift



Arlington

The Design and Key Considerations

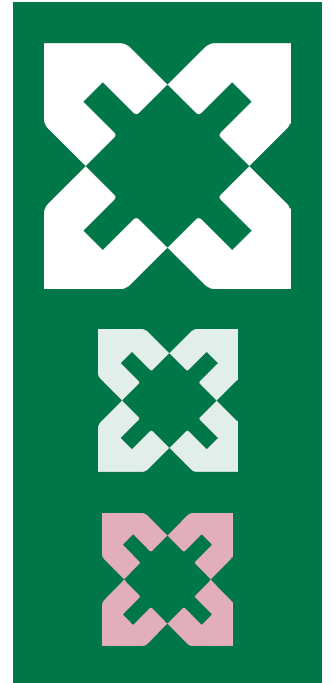
- The lift dimensions are to meet the minimum requirements as stated in NZ4121:2001
- Communication systems (intercoms) to communicate with occupants within the lift and fire service (main fire alarm panel)
- The alarm button or emergency telephone shall not be higher than 1,350 mm above finished floor level
- The unobstructed depth of floor in front of lift doors shall be not less than 1,800 mm
- Provide lift support handrails which are installed between 950 – 1050 mm above the finished floor level of the lift
- Lift doors shall provide a minimum clear opening of 900 mm
- ‘Lift coming’ or ‘call accepted’ indicator. These shall be provided at each landing
- All electrical devices on landings shall be designed to function correctly in an ambient temperature range of 0°C to 65°C
- Provide a lift sump pump within the lift shaft to discharge any firefighting water outside



Arlington

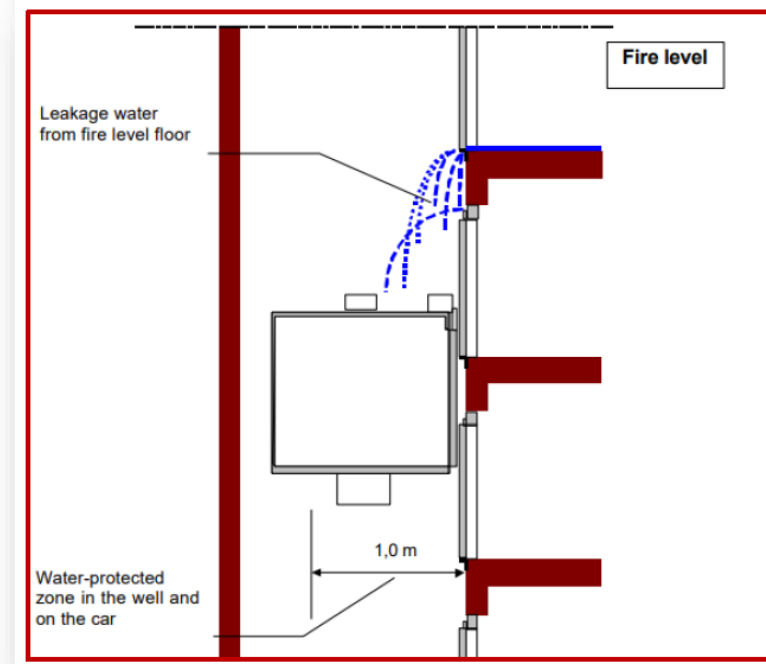
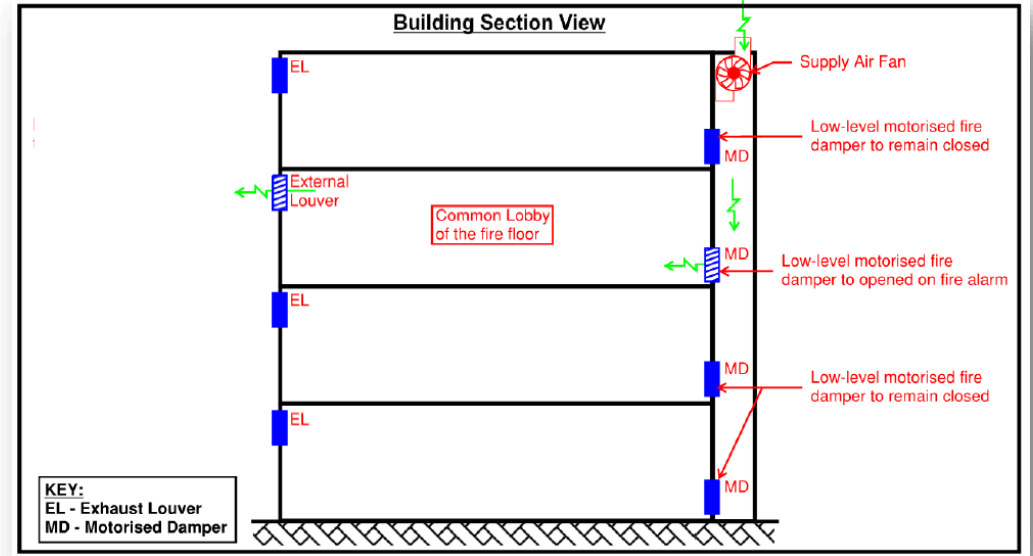
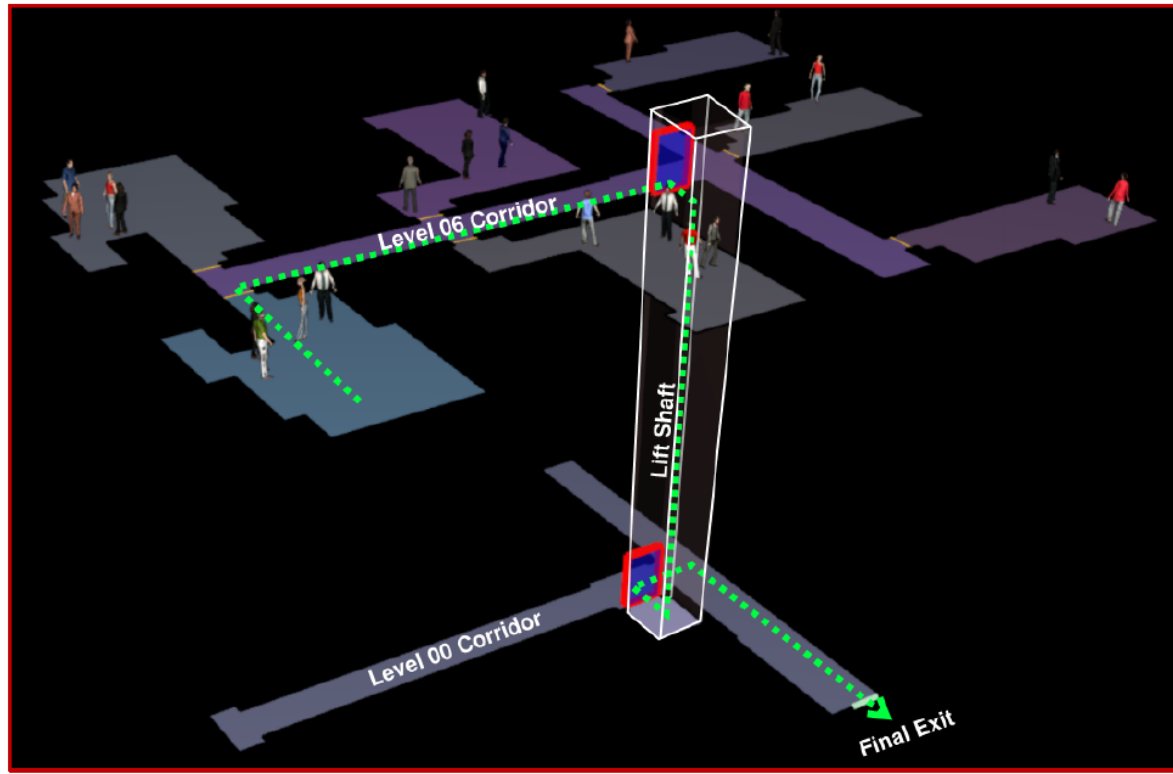
The Design and Considerations

- Specific lift controls in fire mode are required which shall:
 - bypass security systems;
 - Discontinue the use of the lift if it becomes compromised.
 - If the sprinkler within the lift shaft is activated, then the lift will return to the ground floor and the doors open.
 - bypass floors when the lift is at capacity;
 - Provide priority to the fire floor.
 - If a detector on a floor is activated, then it is proposed to prioritise the lift to this particular floor during evacuations.
 - Once the occupants on the fire floor have evacuated, then the remainder of the occupants in the building who need the lift can then use the lift.
- Provide lift lobby surfaces that slope away from the lift shaft to direct firefighting water away from the lift.
- A floor slope of 1:12 is proposed to ensure that wheelchair users can traverse into the lift easily while still directing water away from the lift



Arlington

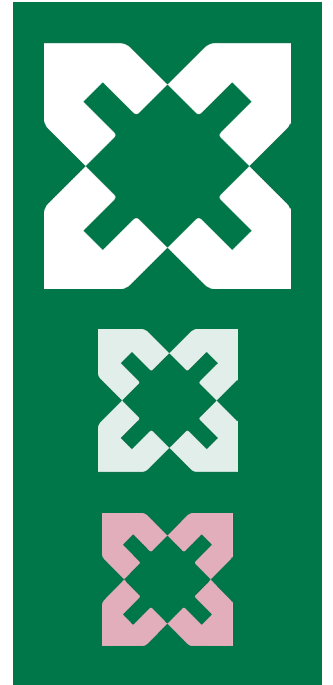
The Design and Considerations



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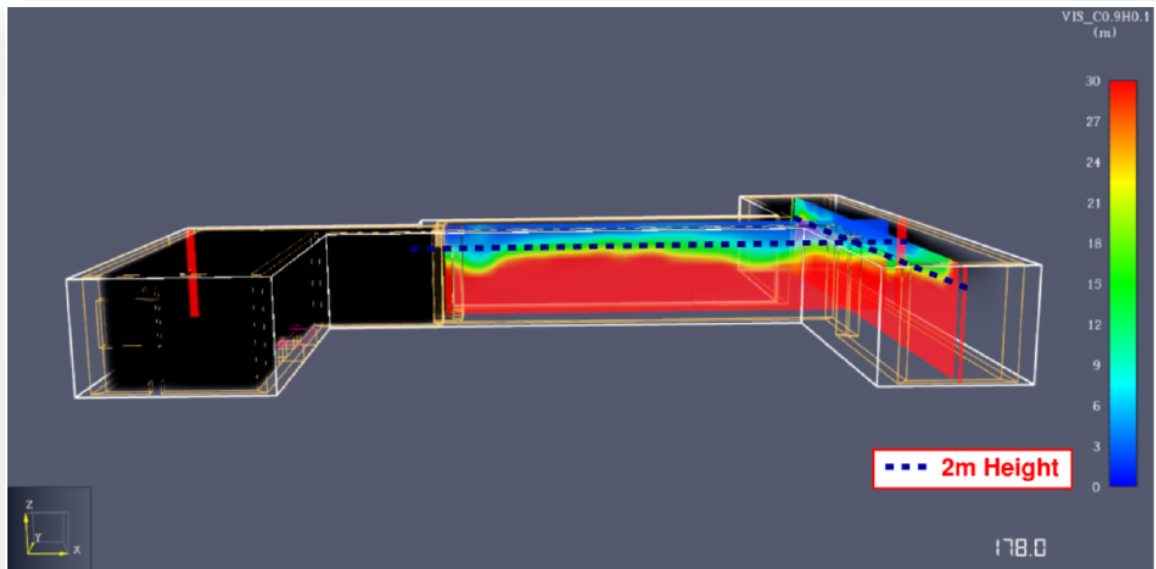
The Design and Considerations

- Provide an air purge system to the fire floor lobby which will have low-level air supplied to the common lobby and exhaust air out via louvres on the external facade
 - Motorised fire dampers are to be provided on each floor which will be connected to the fire alarm panel so that ventilation is only provided to the fire floor
 - In the event of a power failure, all fire dampers are to be closed to mitigate any smoke spread between fire cells
 - The air purge system is to operate on the activation of the smoke detectors and/or sprinklers within the main floor lobby or the activation of sprinklers within the apartment; and the air purge system simultaneously to simplify the FAP design
- For the Arlington Project FENZ requested a comparison between the proposed evacuation lift design and the requirements in BS EN 81-72:2020 (excluding some firefighting lift requirements)
- Extensive modelling in terms of assessing ASET, REST and tenability were also undertaken using a Challenging Fire Scenario, provision on extensive modelling was able to justify the approach used and provide a level of comfort to FENZ to enable the proposed approach to be approved

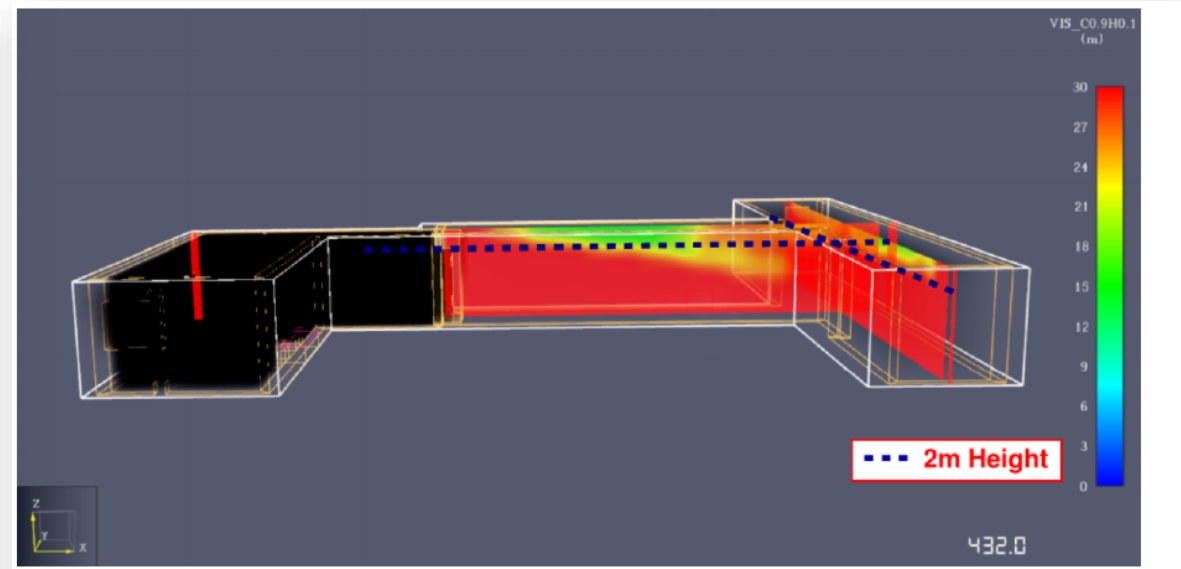


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The Design and Considerations



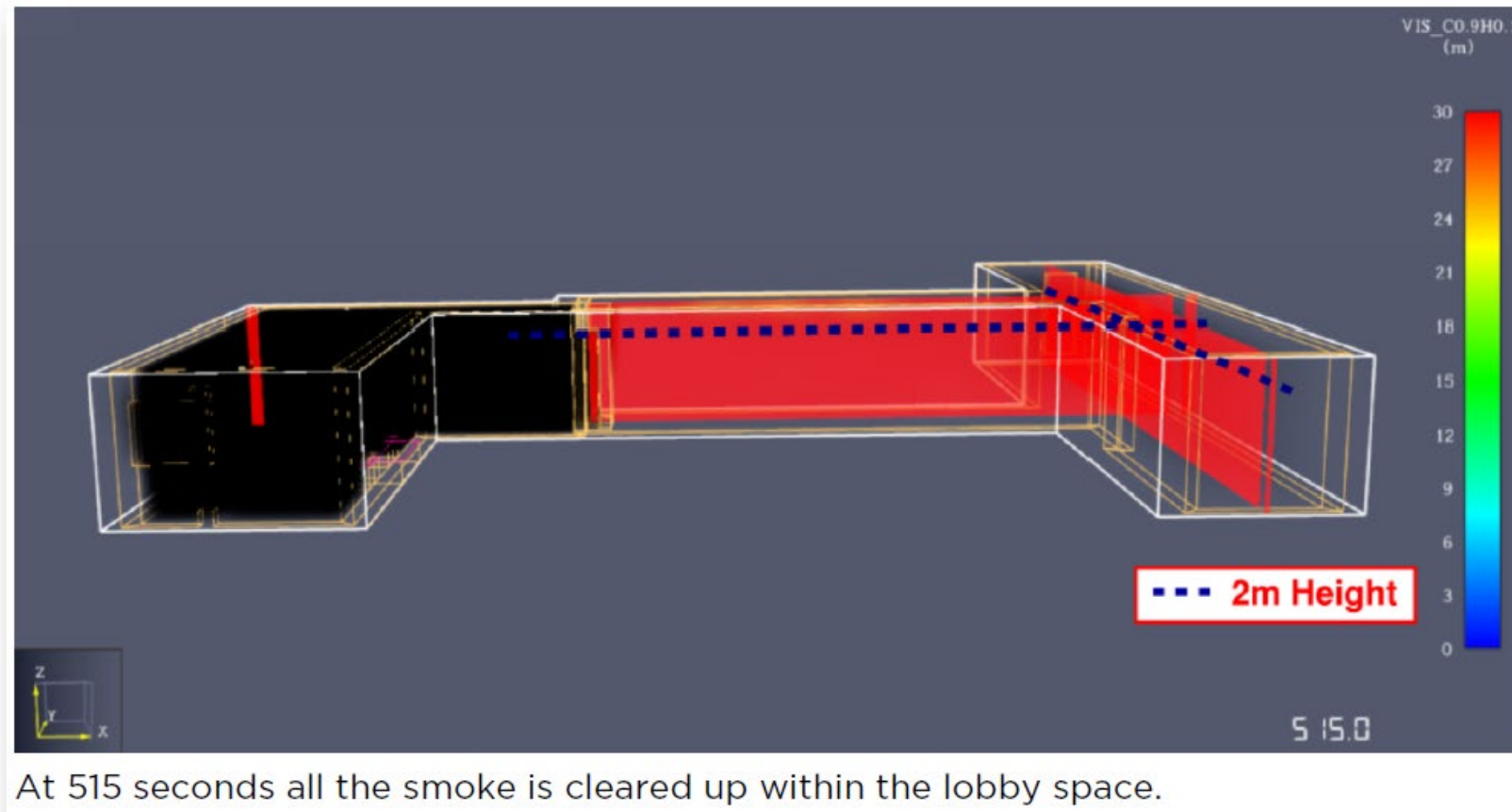
After the door is open for 15 seconds, the lobby is full of smoke. The supply air activates after the sprinkler activation + 30 sec (delay) + 30 sec (ramp-up time)



By the time the remote occupants enter the lobby most of the smoke is cleared up with some minor areas where the visibility is approximately 18m at 2m height.

Arlington

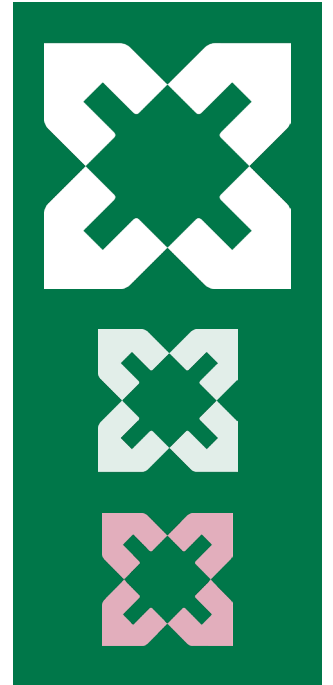
The Design and Considerations



Ongoing Compliance requirements and considerations

Adoption of approach - additional considerations and requirements to provide for persons requiring assistance:

- Training
- Tenancy Management
- On boarding and Management of the tenancy
- Inclusion as a compliance schedule item? Creation of a new sub category of specified system?
- On going inspection requirements
- Lift Outage – Does the build still comply with its evacuation scheme.. (Consequences)
- Passive Inspections
- Interfaces
- End to end testing





Questions?

Equitable Evacuation

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