

An aerial view of a city skyline at dusk or dawn. The sky is a mix of blue and orange, with several hot air balloons floating in the air. The city is filled with tall buildings, some of which are illuminated. A river or canal flows through the city, and a bridge is visible in the foreground. The overall scene is a dense urban landscape.

# Tactical Decision Making: High Rise Firefighting.

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Leading Firefighter Gerard Mann

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# Gerard Mann



Leading Firefighter in  
Melbourne, Victoria,  
Australia



15 years in the  
emergency services



Large regional cities,  
outer suburbs, and city  
of Melbourne



4 years as an instructor  
– CFBT, Fire Dynamics,  
Appliances, Teaching  
Nationally and  
Internationally



A wide-angle photograph of the Melbourne skyline in 2000, viewed from across the water. The sky is overcast with grey clouds. The buildings are mostly low-rise and mid-rise structures. The water in the foreground is calm and greyish-brown.

Melbourne skyline in 2000

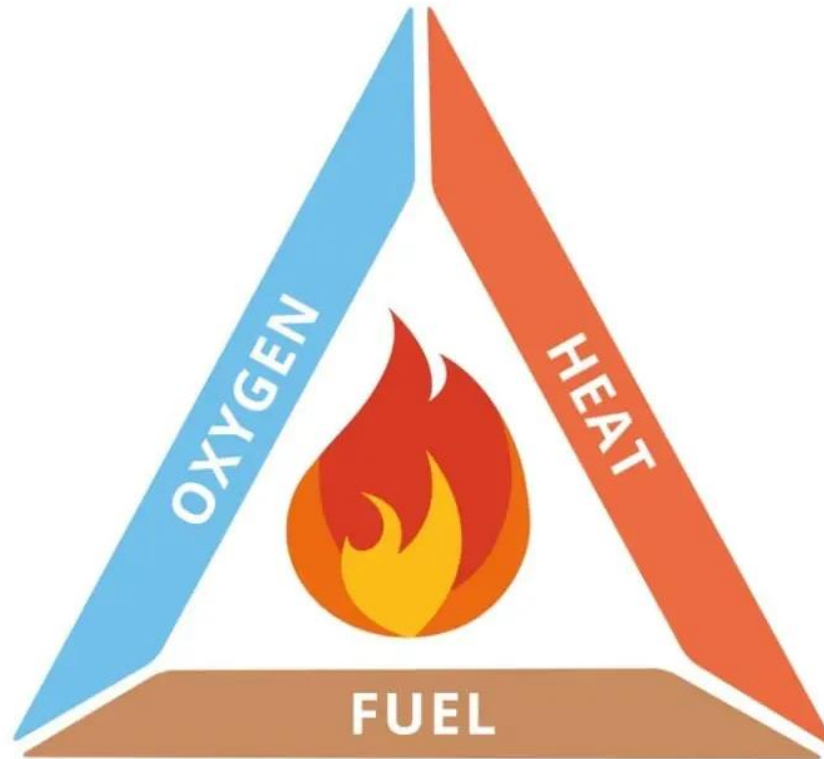
A wide-angle photograph of the Melbourne skyline in 2020, viewed from across the water. The sky is overcast with grey clouds. The skyline is significantly denser and taller than in 2000, with many more skyscrapers. The water in the foreground is filled with numerous boats and yachts.

Melbourne skyline in 2020

# Melbourne, Australia

- Coastal city
- 5,235,000 People
- Exponential and consistent development
- Some of the largest buildings in the southern hemisphere

# The basics



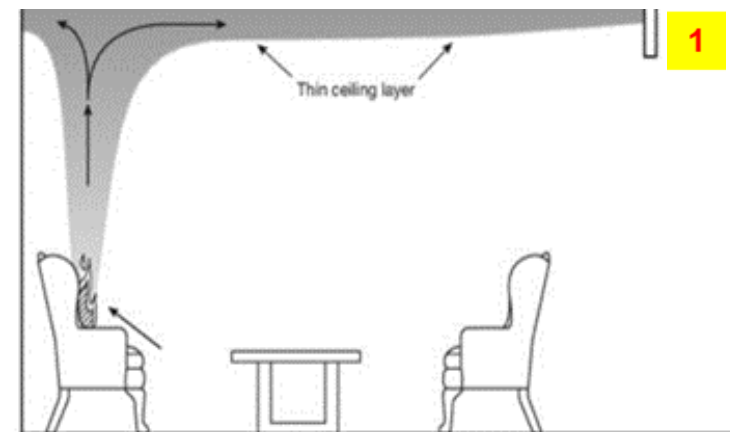


FIGURE 6.4.2.1.1.4 Early Compartment Fire Development.

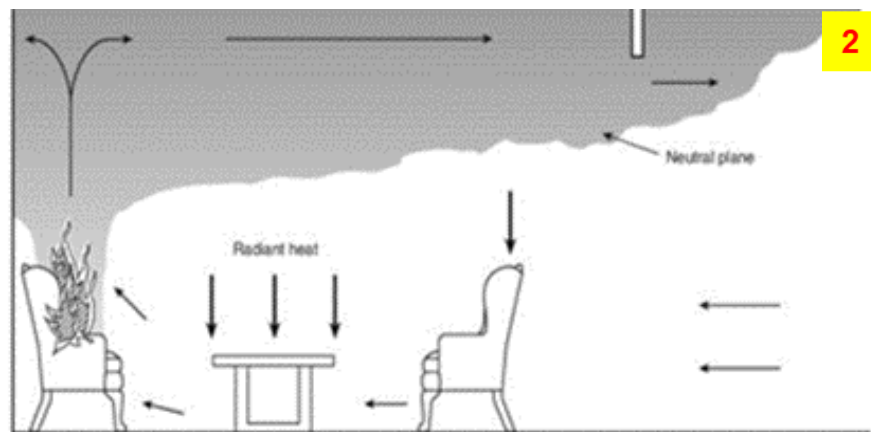


FIGURE 6.4.2.1.1.6(c) Neutral Plane — Upper Layer Development and Airflow.

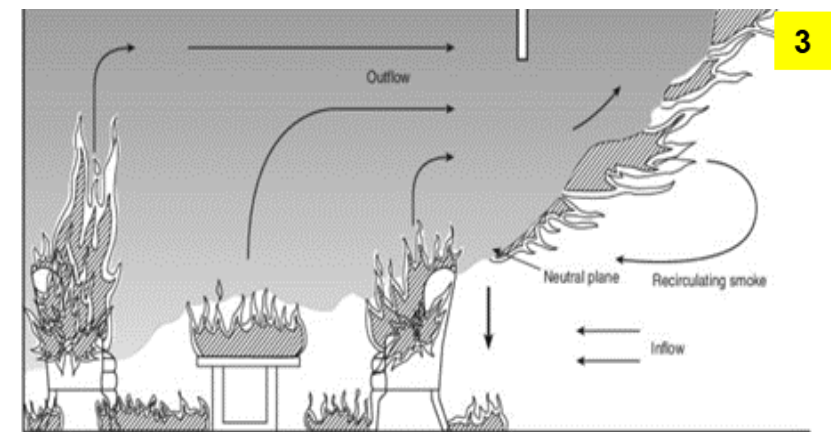
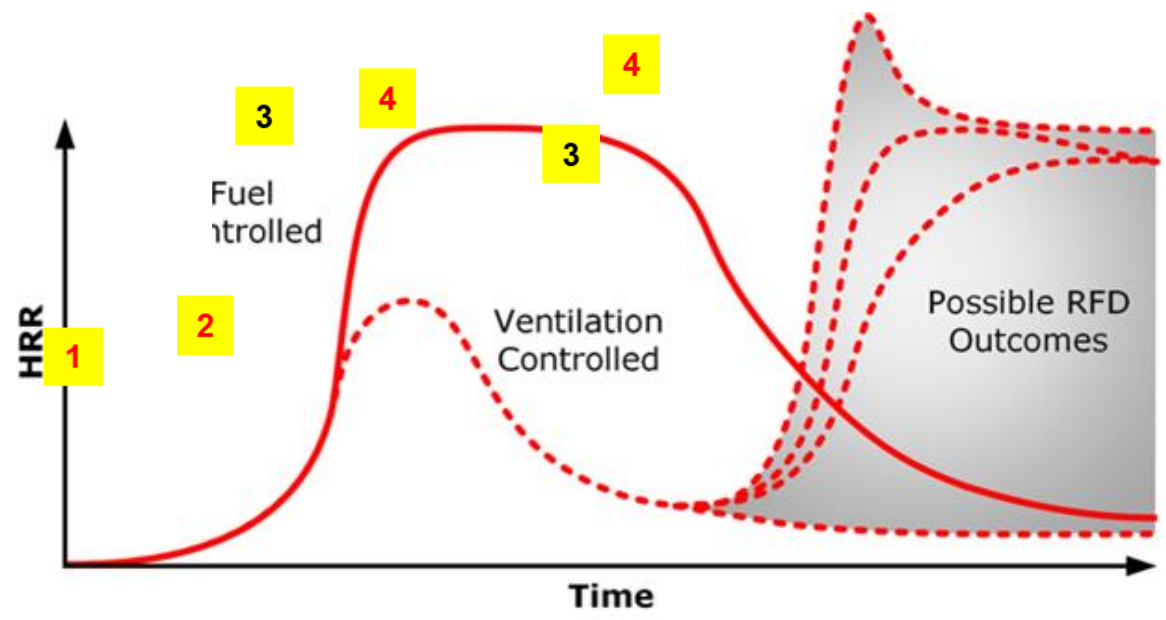


FIGURE 6.4.2.1.2 Flashover Conditions in Compartment Fire.



# What We Know: Our Base Teachings

\*Pictures: From Knowledge to Practice.

# What we need to include in high rise firefighting:



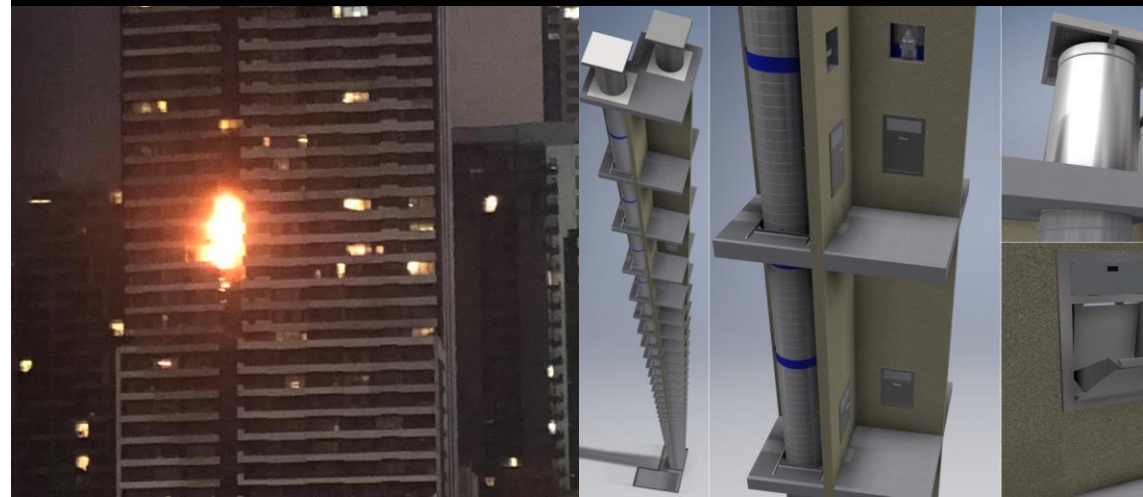
Traveling / Progressive Fires



External fire spread



The influence of the building ; specifically: cavities , voids, smoke control/ smoke management systems and lift shafts



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Tall and Complex buildings can lead to complex problems – the need for strategic and tactical guidance is paramount to guide responding firefighters and officers.





# Tall and Complex Environment

- Early high rise
- Legacy
- Building codes – AHJ & DTS
- High Rise Modernization
- Safety systems and Fire engineering





## Tall building Fire Safety Active and Passive Systems:

- Detection and warning systems, emergency warning and intercom systems (EWIS)
- Smoke and air handling
- Building Management systems
- **Isolation, compartmentation**
- **Stairs**
- Suppression and hydrant systems
- Elevators

\*Modern and legacy high/mid rise.



James Braidwood

***'What the open door of the ash-pit is to the furnace of a steam-boiler the open street door is to the house on fire. In both cases the door gives vital air to the flames.'***

# Tactical Decision Making

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- Objective: Goal of incident
- Strategy: Plan of action to achieve an Overall Aim
- Tactics: Steps executed to achieve the strategy.



Incident  
Objectives:  
R.I.C.E

- Rescue
- Intervention
- Containment
- Evacuation



# Evacuations

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- **Primary** – units/spaces on the fire floor
- **Secondary** – 2 up, 1 down, repeat



# Initial Actions



Head to FCP/Building Representative

Locate/lowest detection and range.

Send a crew to establish bridgehead – gather intel

A.K.A. Forward control Point

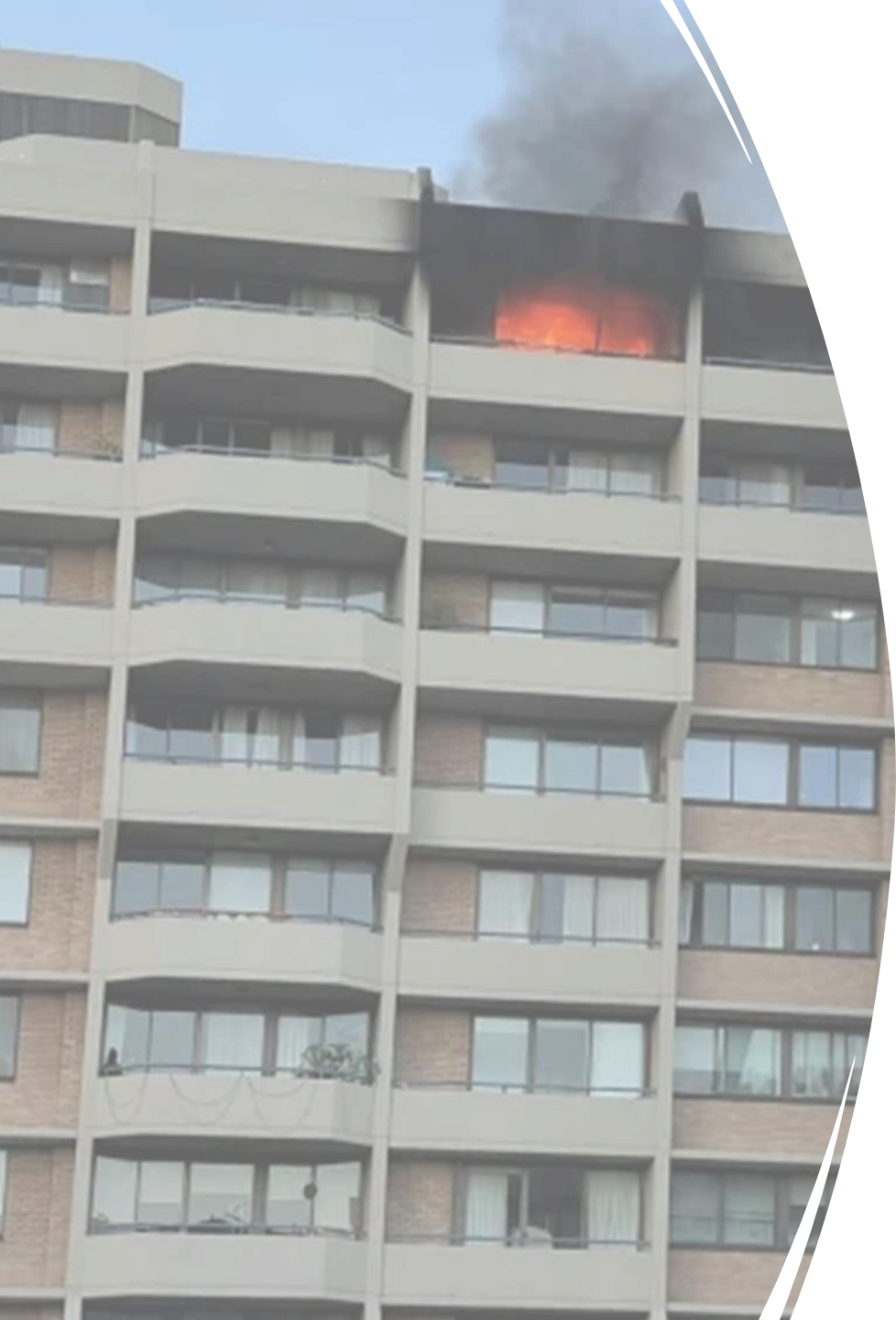
Appoint an external observer

# Bridgehead

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- Floor Layout
- Fire Location
- Refuge





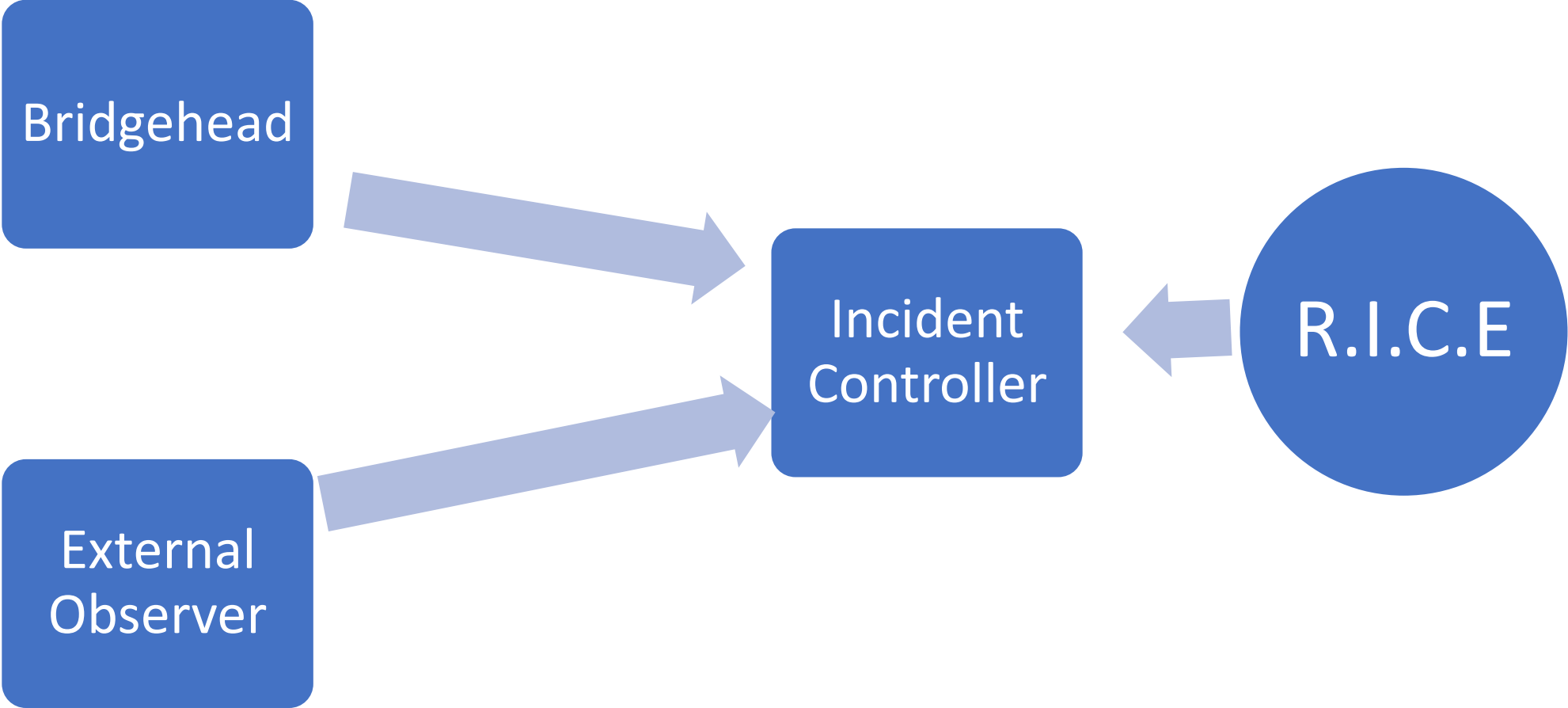
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- **External Observer**

- Fire
- Smoke
- Flowpath
- Auto exposure
- Confirm location



# The Decision Making Process



# Three Likely Scenarios encountered by the Bridgehead

Stairs and Corridor Clear of Smoke –  
Fire isolated to a compartment

Stairs Clear of Smoke, Hallway  
Contaminated – Fire has breached  
apartment

Stairs Contaminated with Smoke,  
Hallway Contaminated With Smoke

# High Rise Scenario 1

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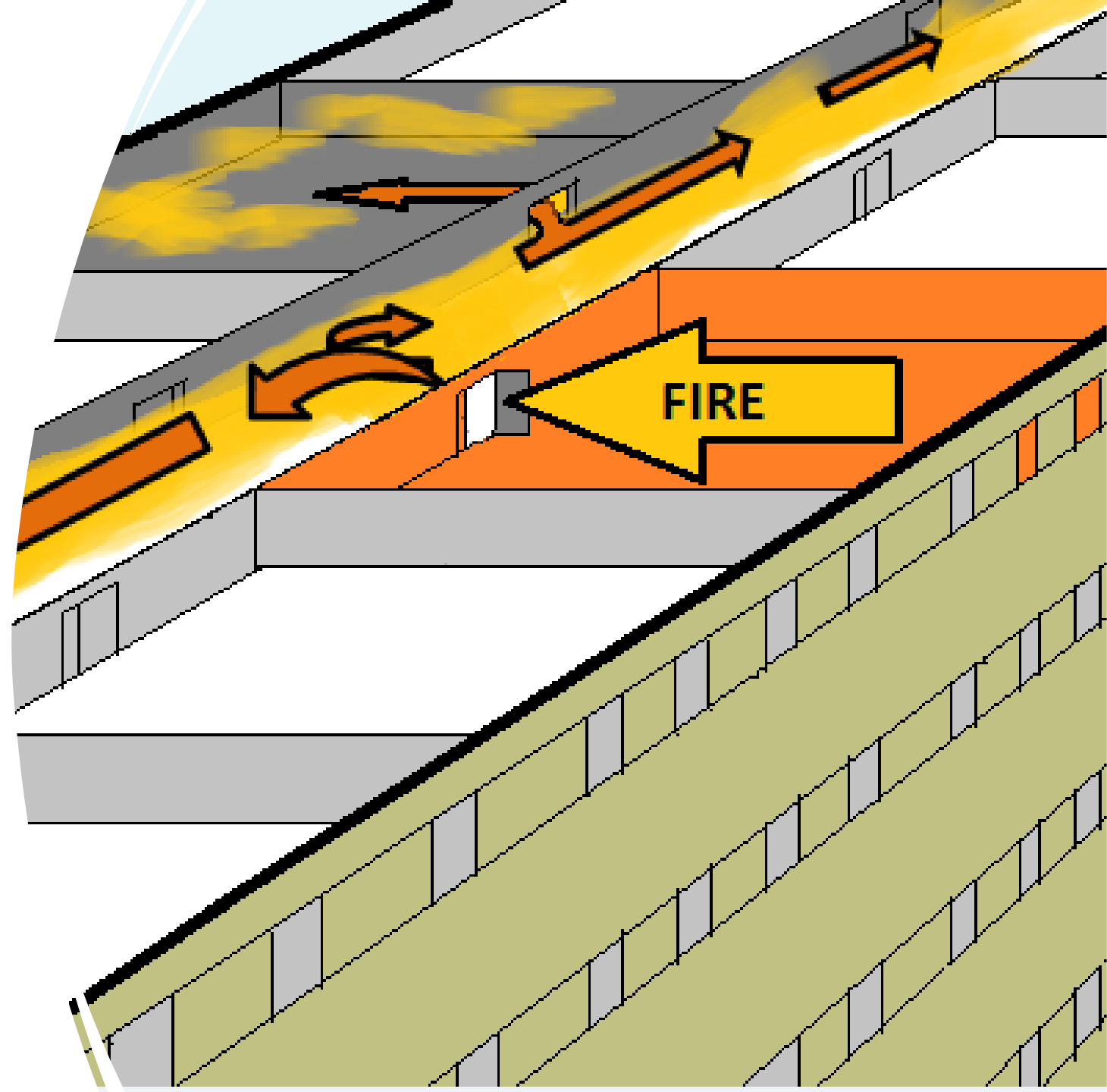
- Fire Conditions
  - Visible 1 floor
  - Stairwell clear of smoke
  - Hallway clear of smoke
- RICE –
  - Rescue – As required
  - Intervene – Exterior control
  - Contain – 2 smoke curtains on apartment door
  - Evacuate – primary
  - Safety – compartment windward side



# Scenario 2

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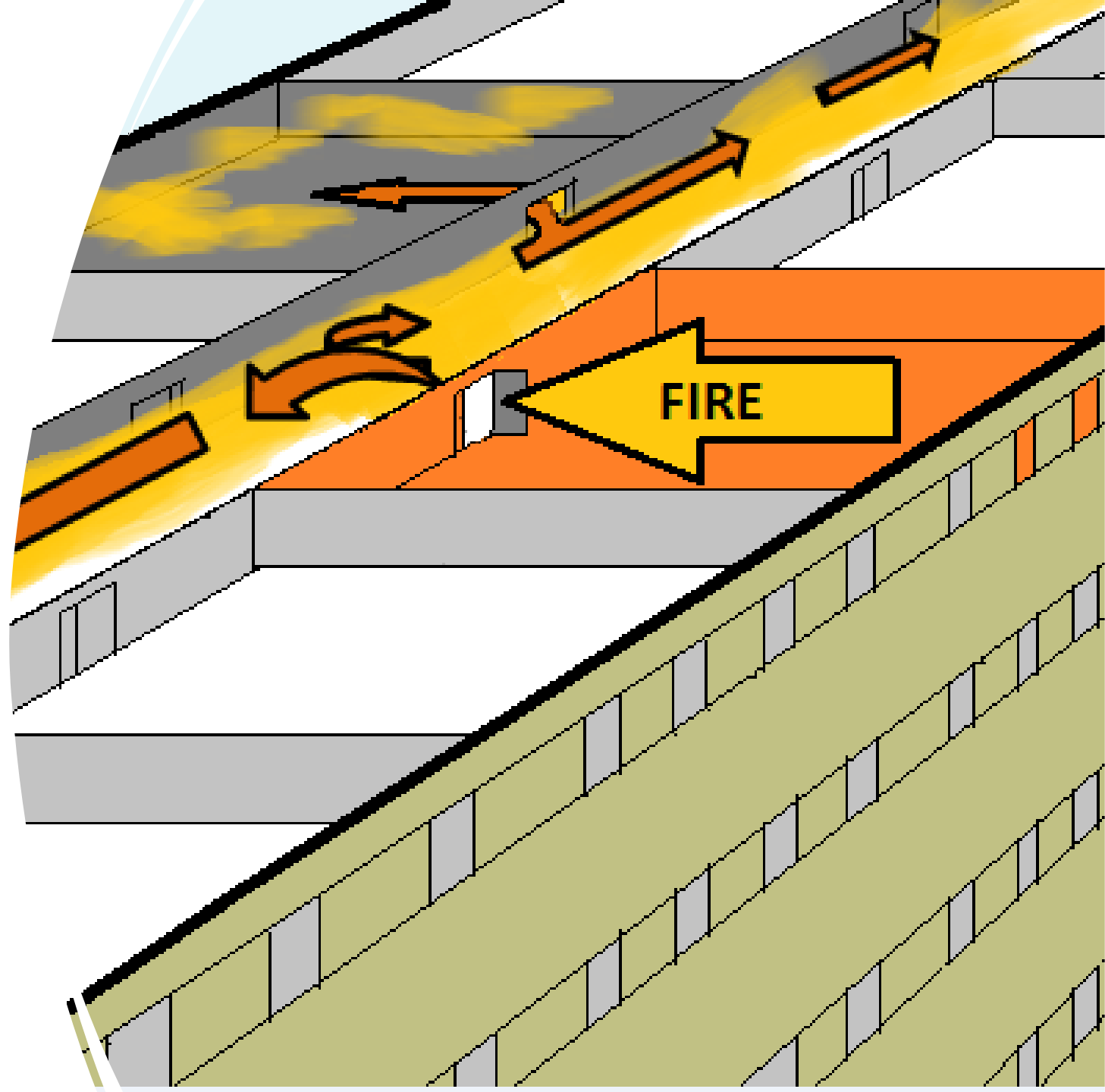
- Fire Conditions
  - Visible 1 floor
  - Stairwell clear of smoke
  - Hallway contaminated
- RICE –
  - Rescue – As required
  - Intervene – Exterior control
  - Contain – 2 smoke curtains on fire floor door
  - Evacuate – Secondary
  - Safety – Do not enter until we get fire control/Secondary evac completed



# Scenario 2-continued

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- Once we gain fire control/Secondary Evacuations
  - Enter fire floor with appropriate line
  - Gain apartment door control – curtains
  - Allow smoke to vent
    - Evac primary with smoke hoods or when tenable
  - Create firefighter refuge
  - Intervene on fire with interior control/door control/direct attack



# Scenario 3

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- Fire Conditions
  - Visible contained to one floor
  - Stairwell clear of smoke
  - Hallway contaminated
- RICE –
  - Rescue – As required
  - Intervene – Exterior control
  - Contain – 2 smoke curtains on fire floor door
  - Evacuate – Secondary
  - Safety – Do not enter until we get fire control



# Scenario 3 – Continued

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- Once we gain fire control
  - Enter fire floor with appropriate line
  - Gain apartment door control – curtains
  - Allow smoke to vent
    - Evac primary with smoke hoods or when able
  - Create firefighter refuge
  - Intervene on fire with interior control/door control/interior attack



# Scenario 4

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- Fire Conditions
  - Nothing Showing, windy forecast
  - Stairwell clear of smoke
  - Hallway clear of smoke
  - Occupant reports fire in their apartment
- RICE -
  - Rescue – As required
  - Intervene – prepare for exterior control, set up interior lines
  - Contain – 2 smoke curtains on fire door
  - Evacuate – Primary
  - Safety – Firefighter Refuge





# If in doubt

01

Life Safety,  
Stairwells

02

Observation,  
Location,  
communication

03

Control the  
internal  
environment

04

Take refuge on  
the windward  
side

05

Note the stack  
effect on the  
way in

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