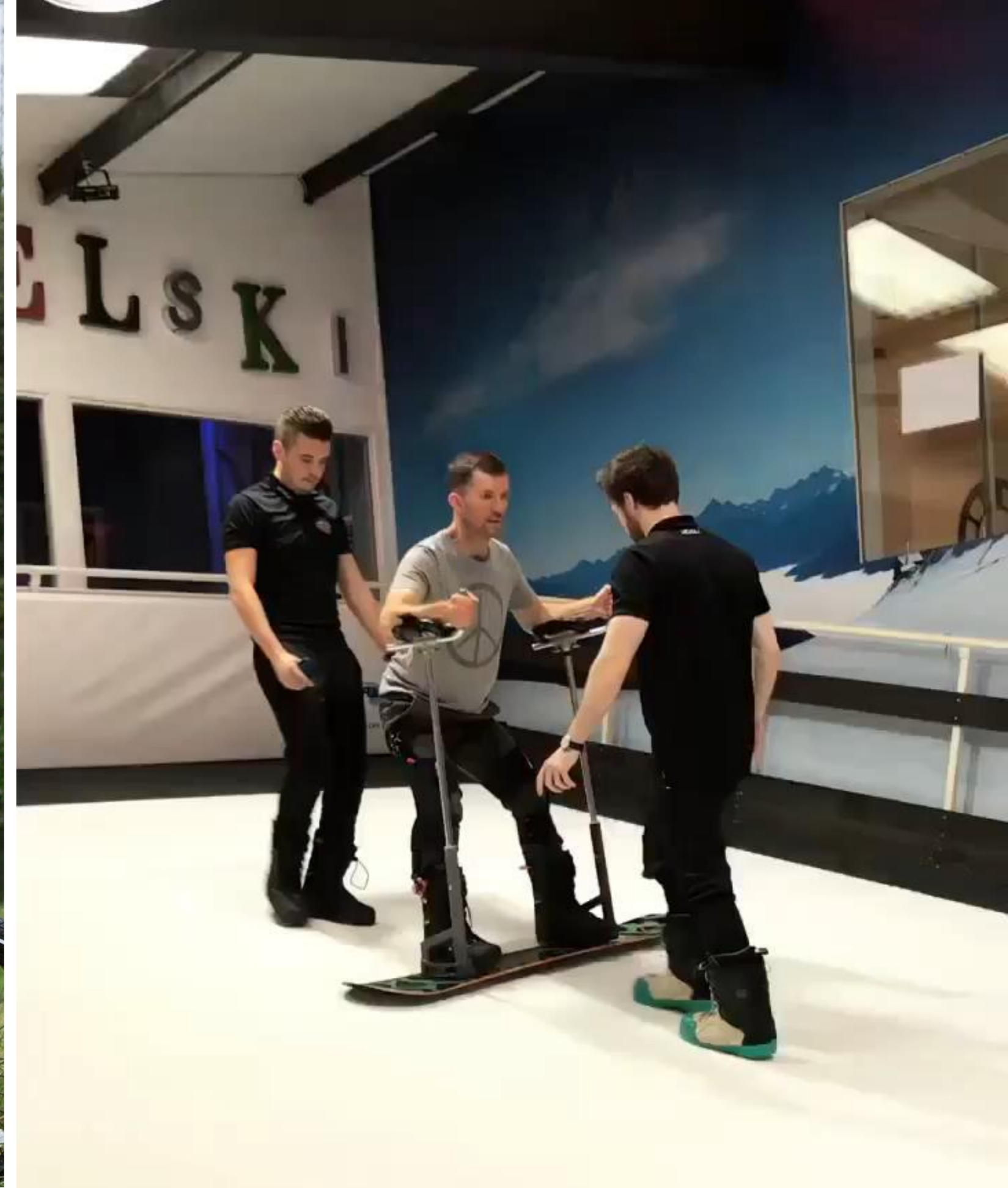


Plumis

Lambeth sheltered housing retrofit case study

October 2020





DESIGN
MUSEUM
DESIGNS OF
THE YEAR



Not a one size fits all solution

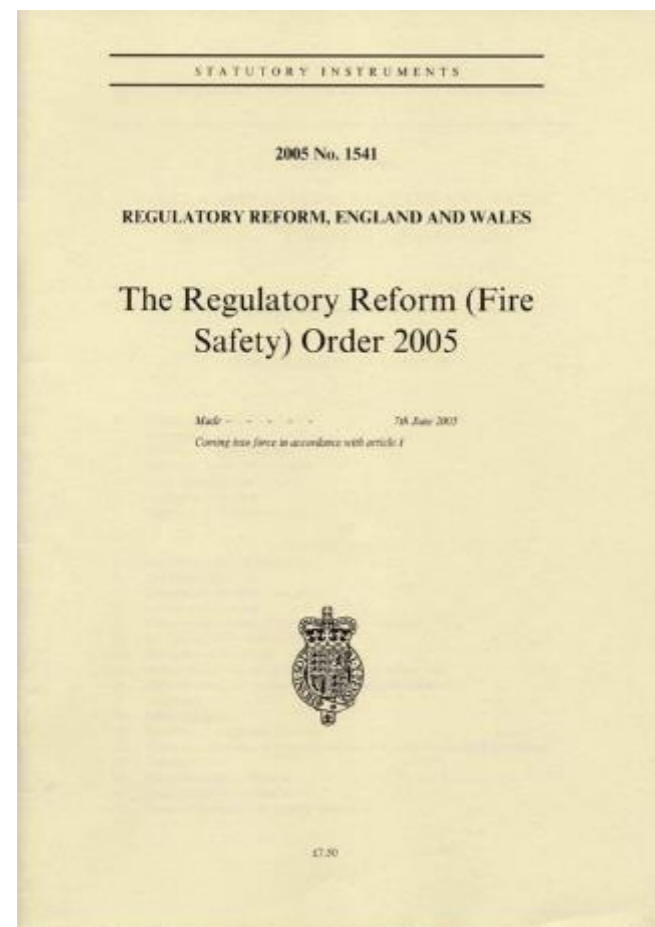
'Prescriptive regulation and guidance are not helpful in designing and building complex buildings, especially in an environment where **building technology and practices continue to evolve...**'

'An outcomes-based framework requires people who are **part of the system to be competent, to think for themselves rather than blindly following guidance**, and to understand their responsibilities to deliver and maintain safety and integrity throughout the life cycle of a building.'



Elective fire safety upgrade

Enhancement to a building with an otherwise code compliant fire safety design



Places the responsibility on **individuals** within an organisation to carry out risk assessments to **identify, manage and reduce the risk**

Article 33 - Person charged to prove that s/he took all reasonable precautions and **exercised all due diligence** to avoid the commission of such an offence.

Elective fire safety upgrade? Consider?



Housing stock type & characteristics



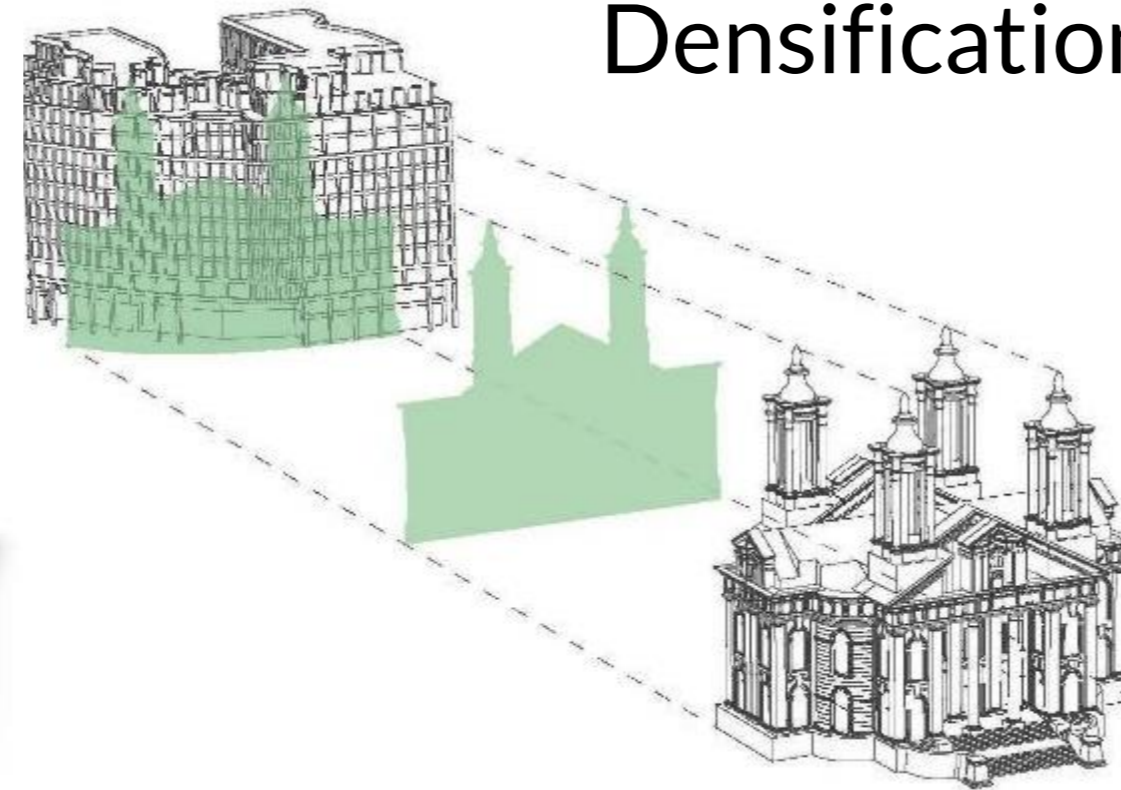
Type of occupants

The evolution of the fire problem

Modern Methods of Construction



Housing
Densification



Ageing population



1990



↓ Smoking



↓ Chip pans



↑ Electrical



↑ White goods

Today

Designing for fire retardant just the standard

Additional sprinklers



British standard fires



Smoke



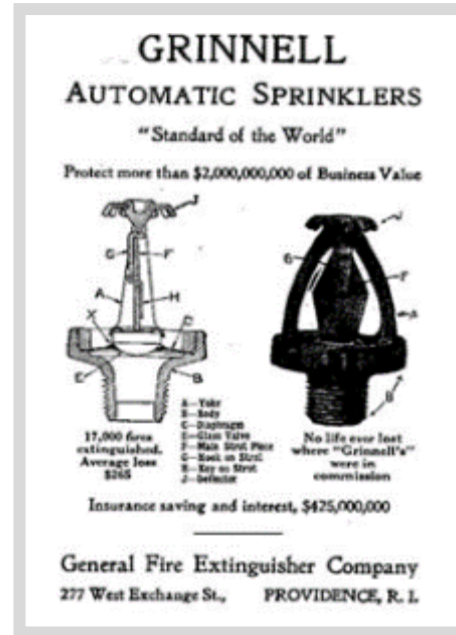
White goods



Electrical fires

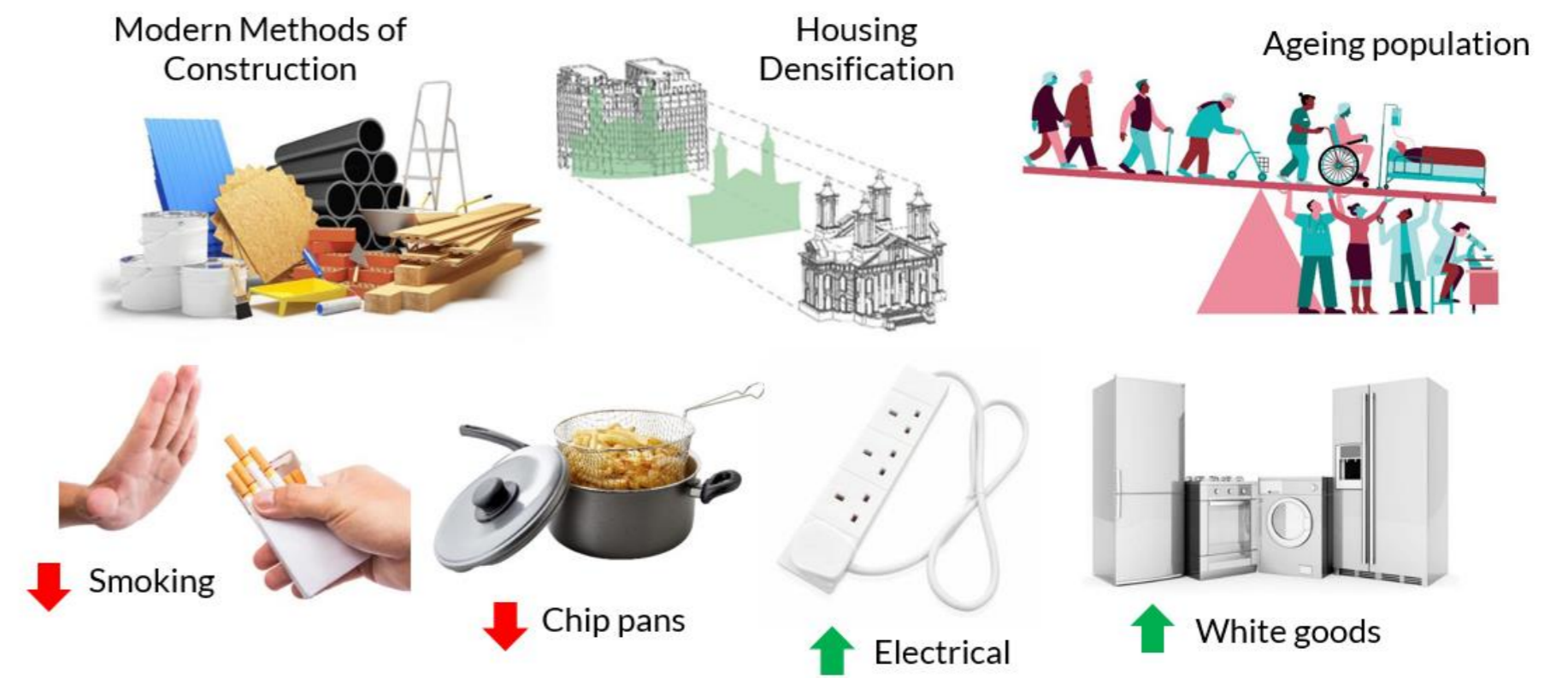
Different fire types that cause fatalities and injuries

The evolution of the fire sprinkler



Today

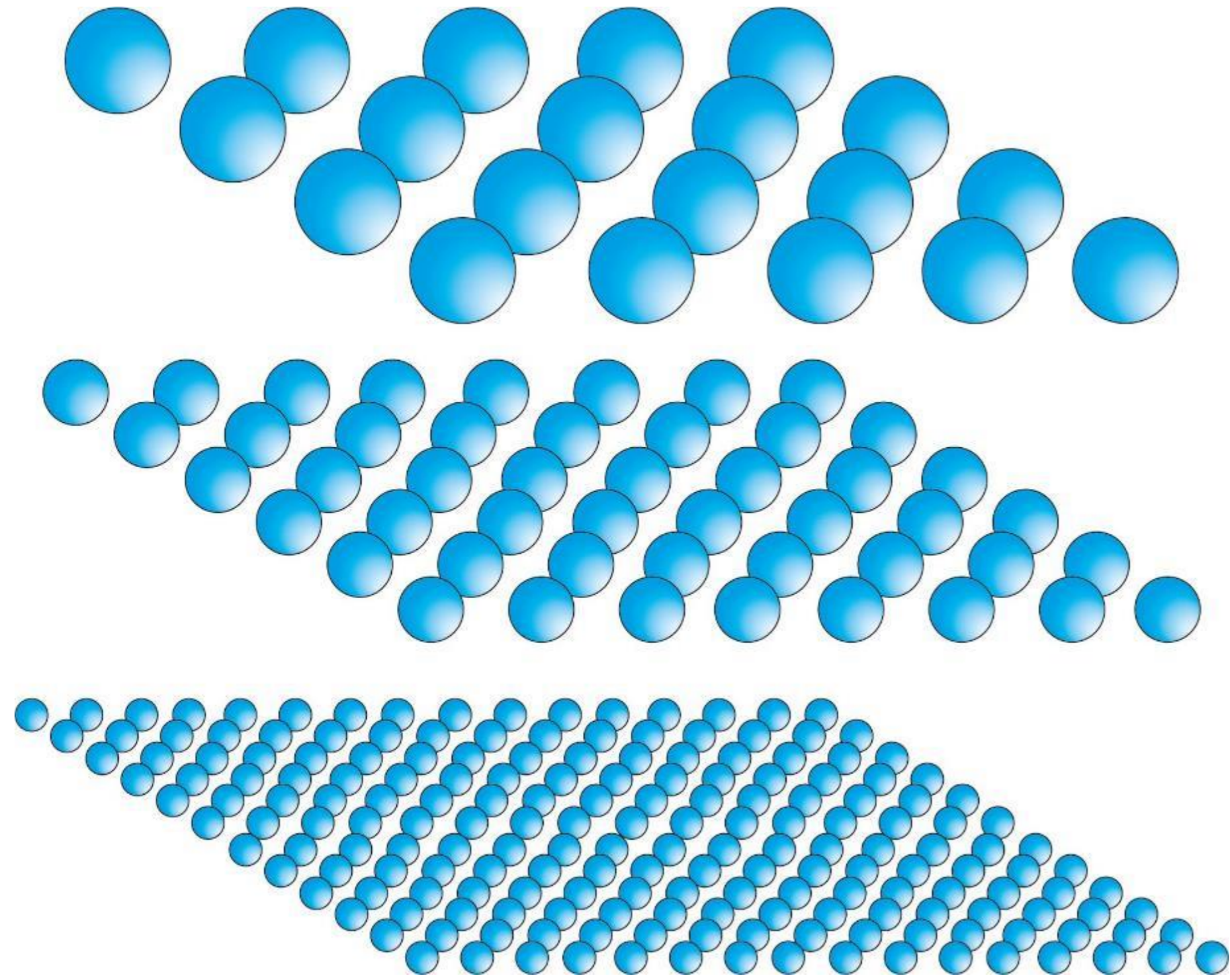
1882



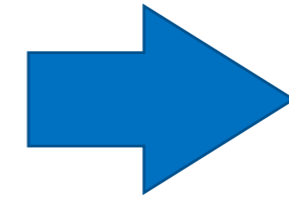
1990







Today

Watermist

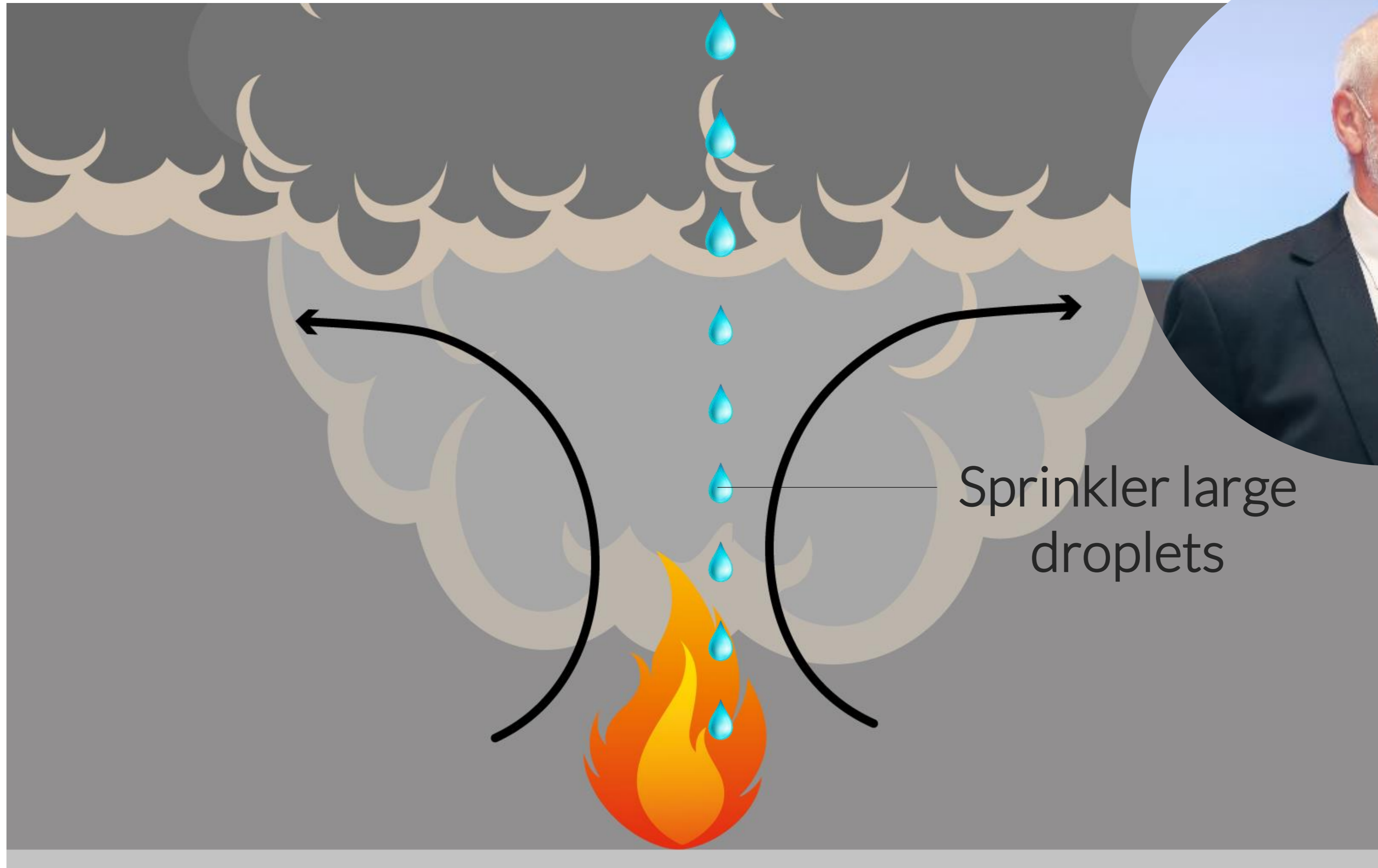


Large surface area



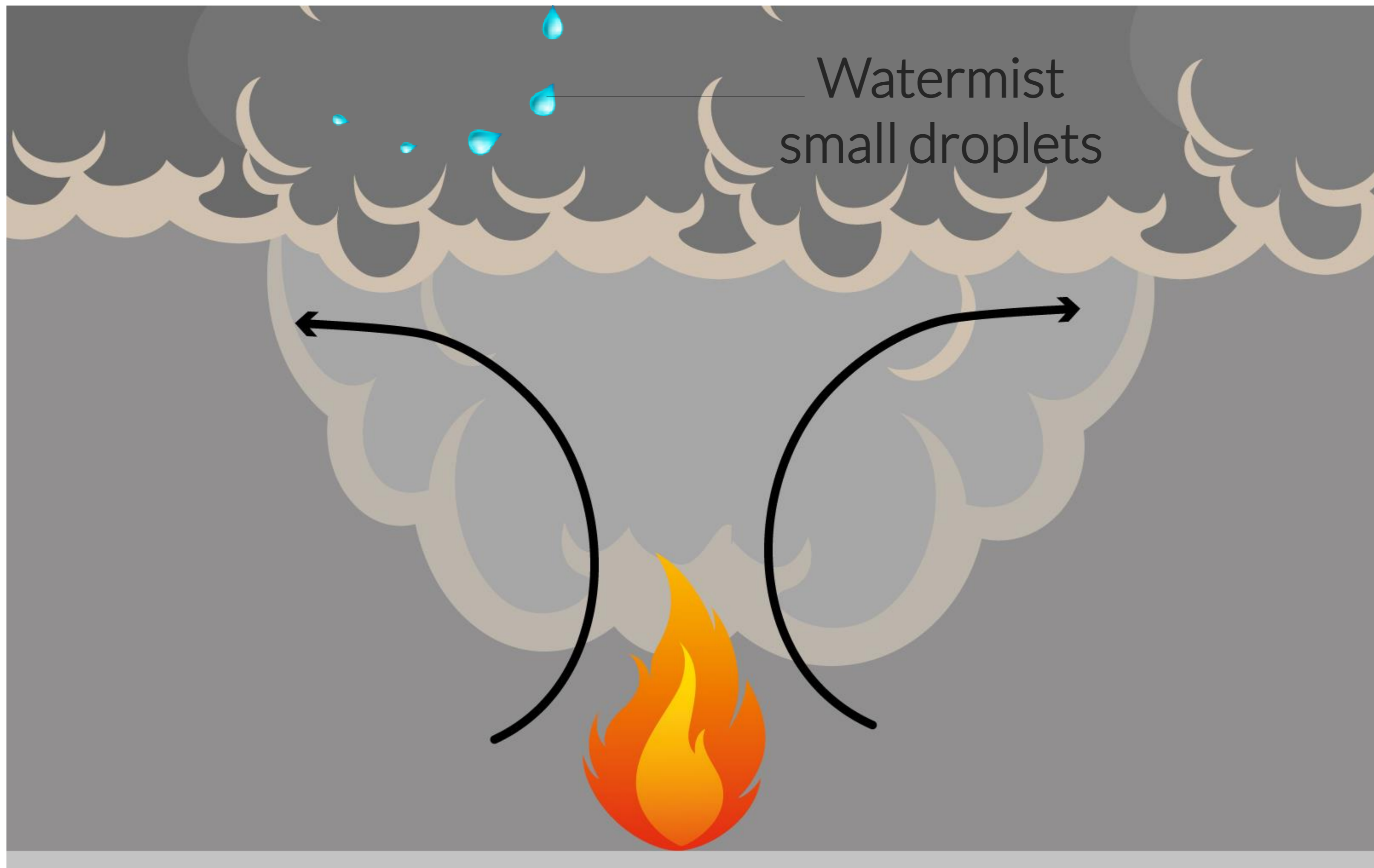
Which extinguisher for which fire?							
		Wood, paper, textiles and other carbonaceous materials.	Flammable Liquids, petrols & spirits	Flammable Gases (Propane, butane)	Fires involving burning metals	Fires caused by an electrical fault where electric current may be present.	Cooking oils and fats. For example olive oil, or lard
Water Mist		✓	✓	✓	✗	✓	✓
Water	Red	✓	✗	✗	✗	✗	✗
Foam	Yellow	✓	✓	✗	✗	✗	✗
Powder	Blue	✓	✓	✓	✗	✓	✗
M28/L2	Blue	✗	✗	✗	✓	✗	✗
CO2	Black	✗	✓	✗	✗	✓	✗
Wet Chemical	Yellow	✓	✗	✗	✗	✗	✓

Archimedes in practice

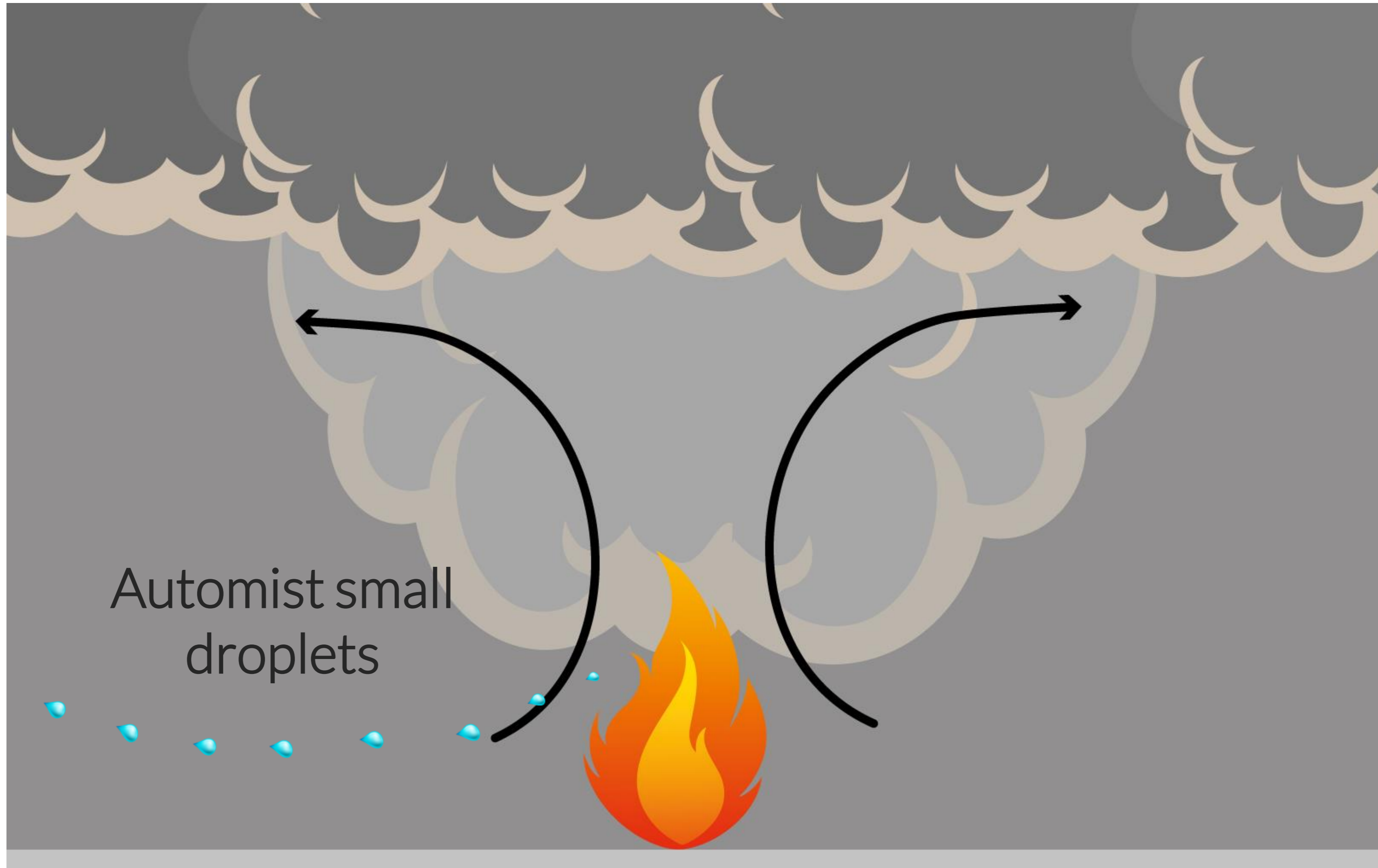


Sprinkler large droplets

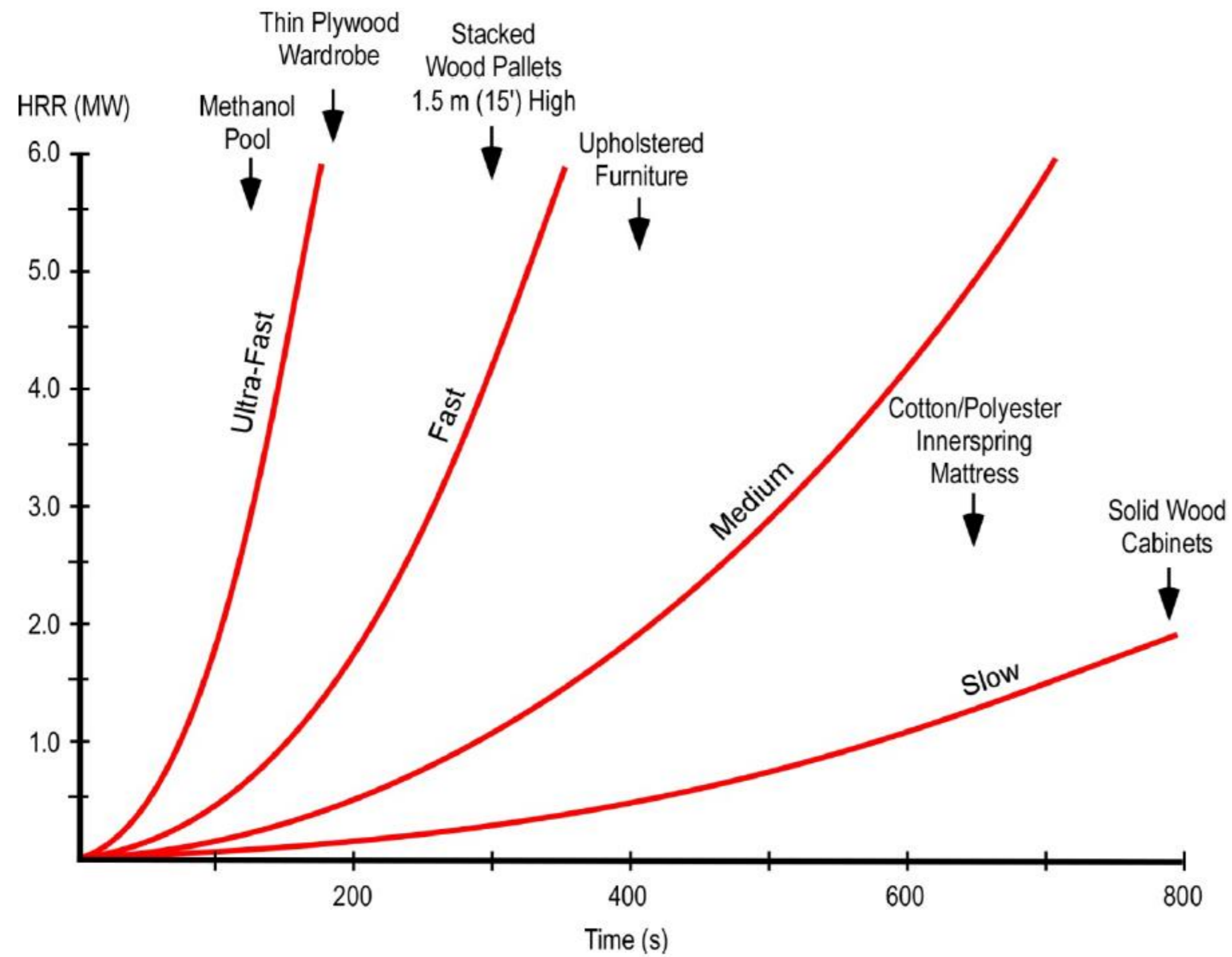
Archimedes in practice



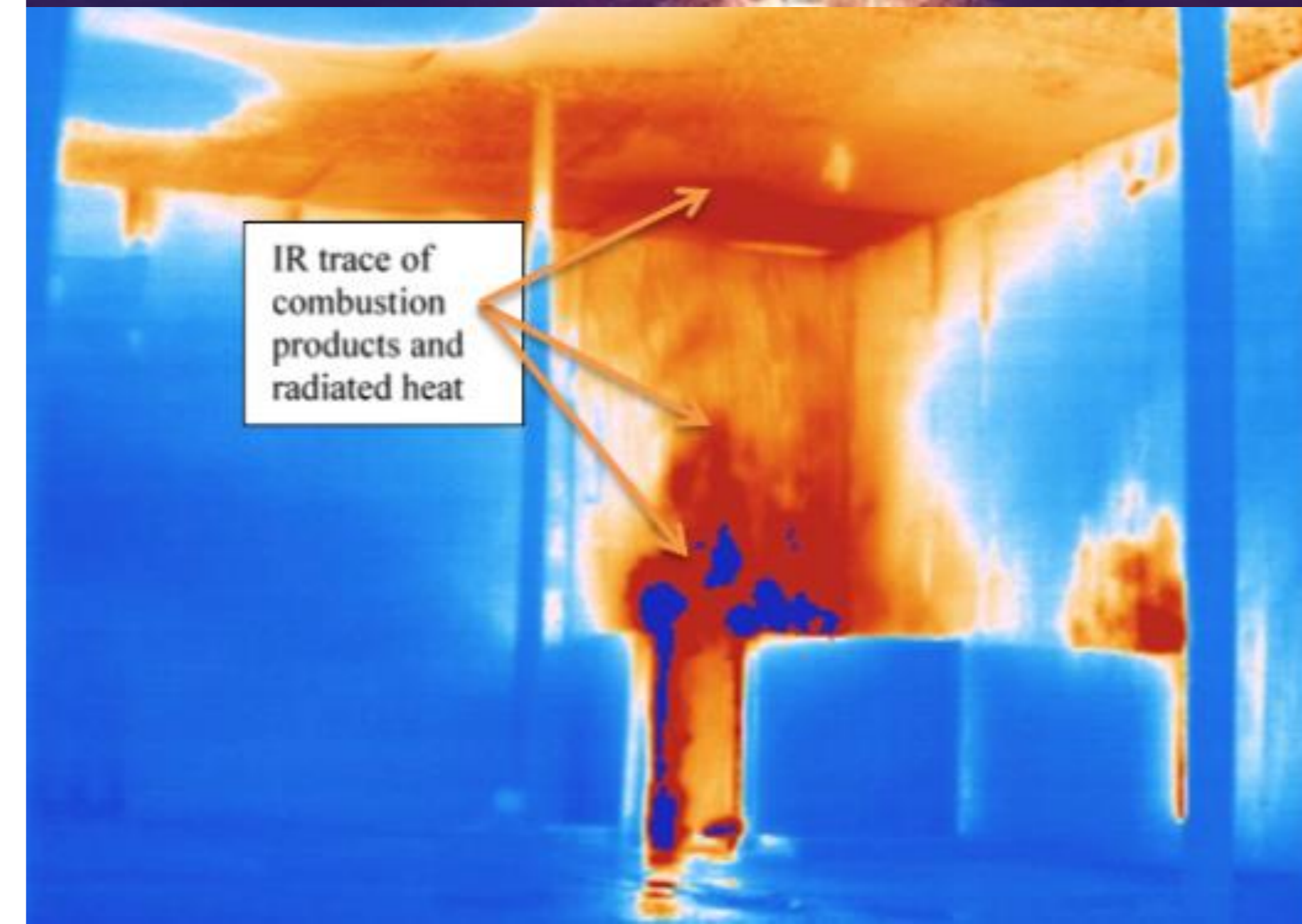
Archimedes in practice



Double knock activation



t^2 fire growth curves



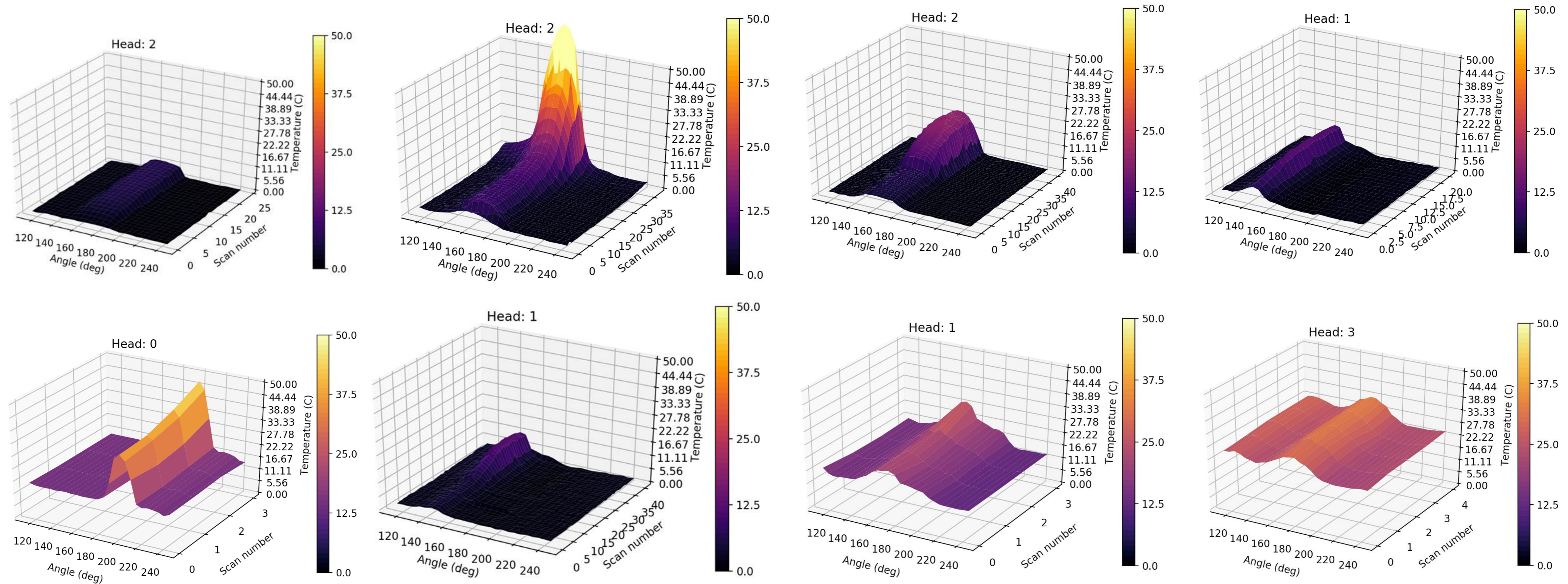
Automist Smartscan Hydra



Sidewall Sprinkler



Intelligent detection



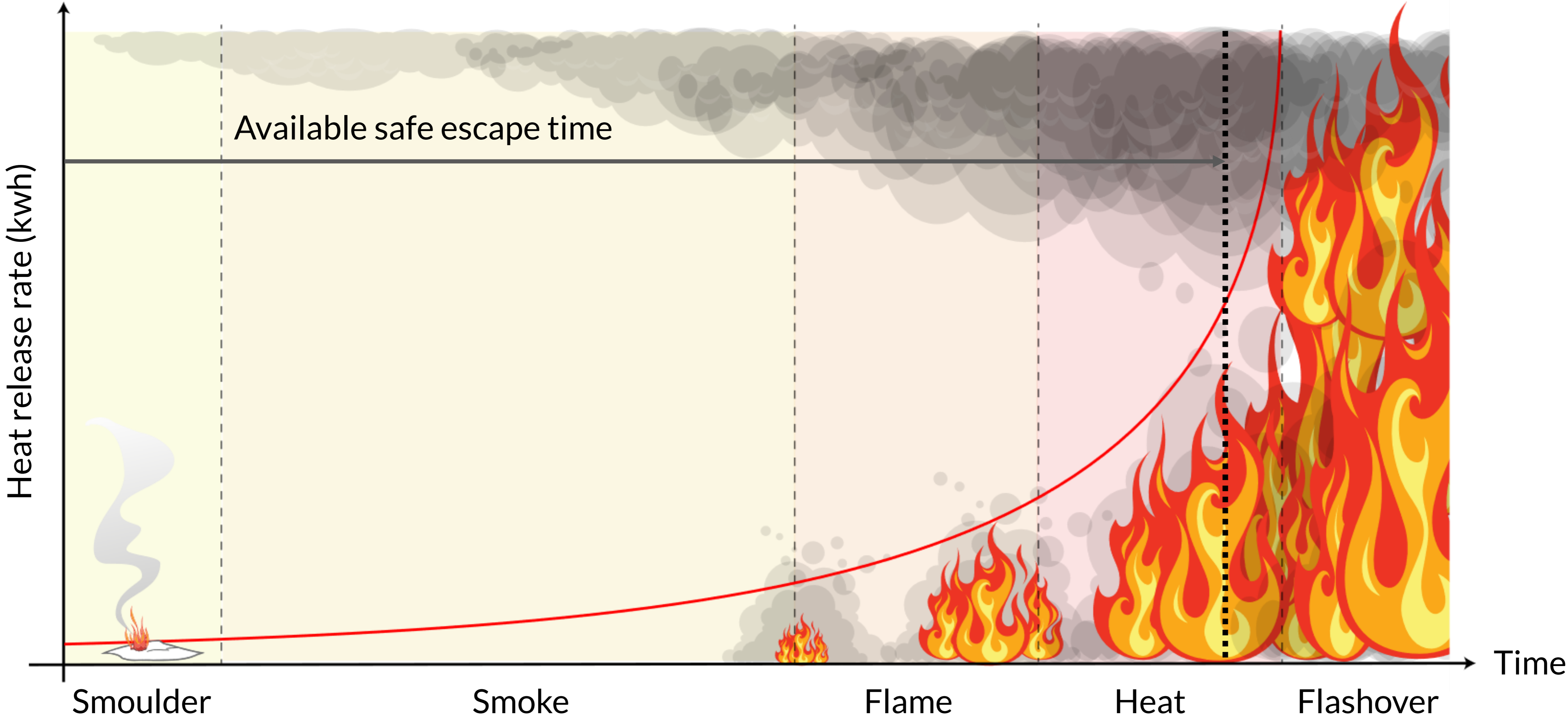
Algorithm validated against a library of real life fire tests

Problems with a traditional approach

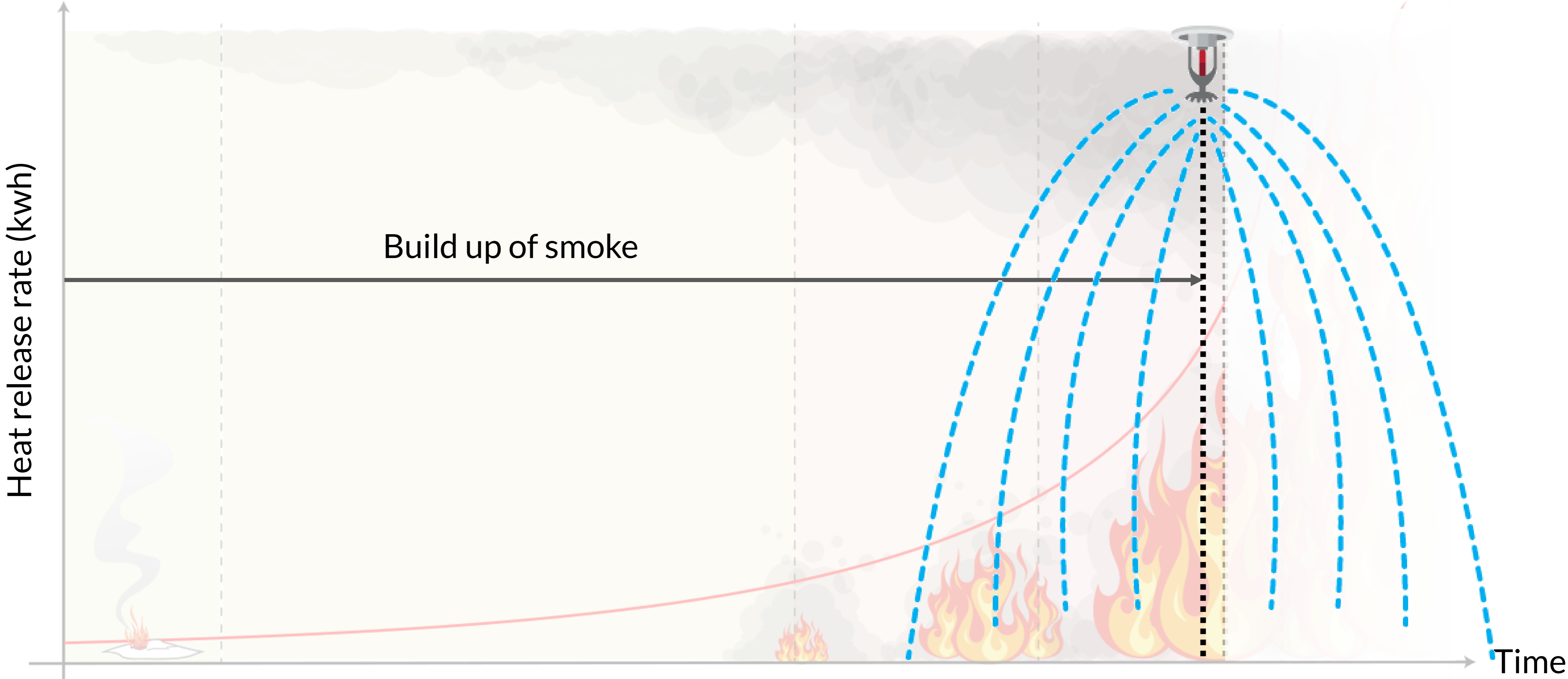


Smoke

Smoke

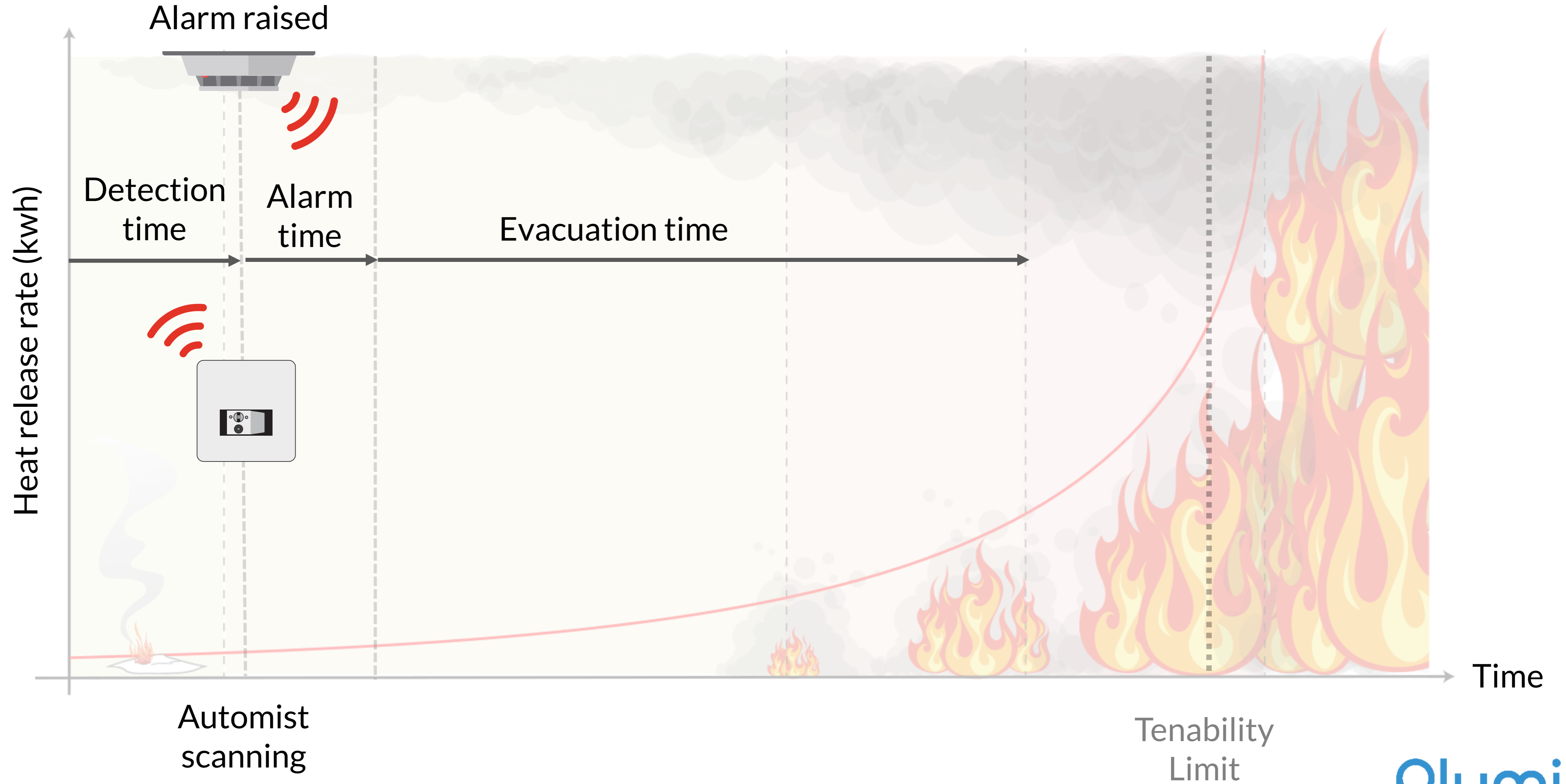


Smoke

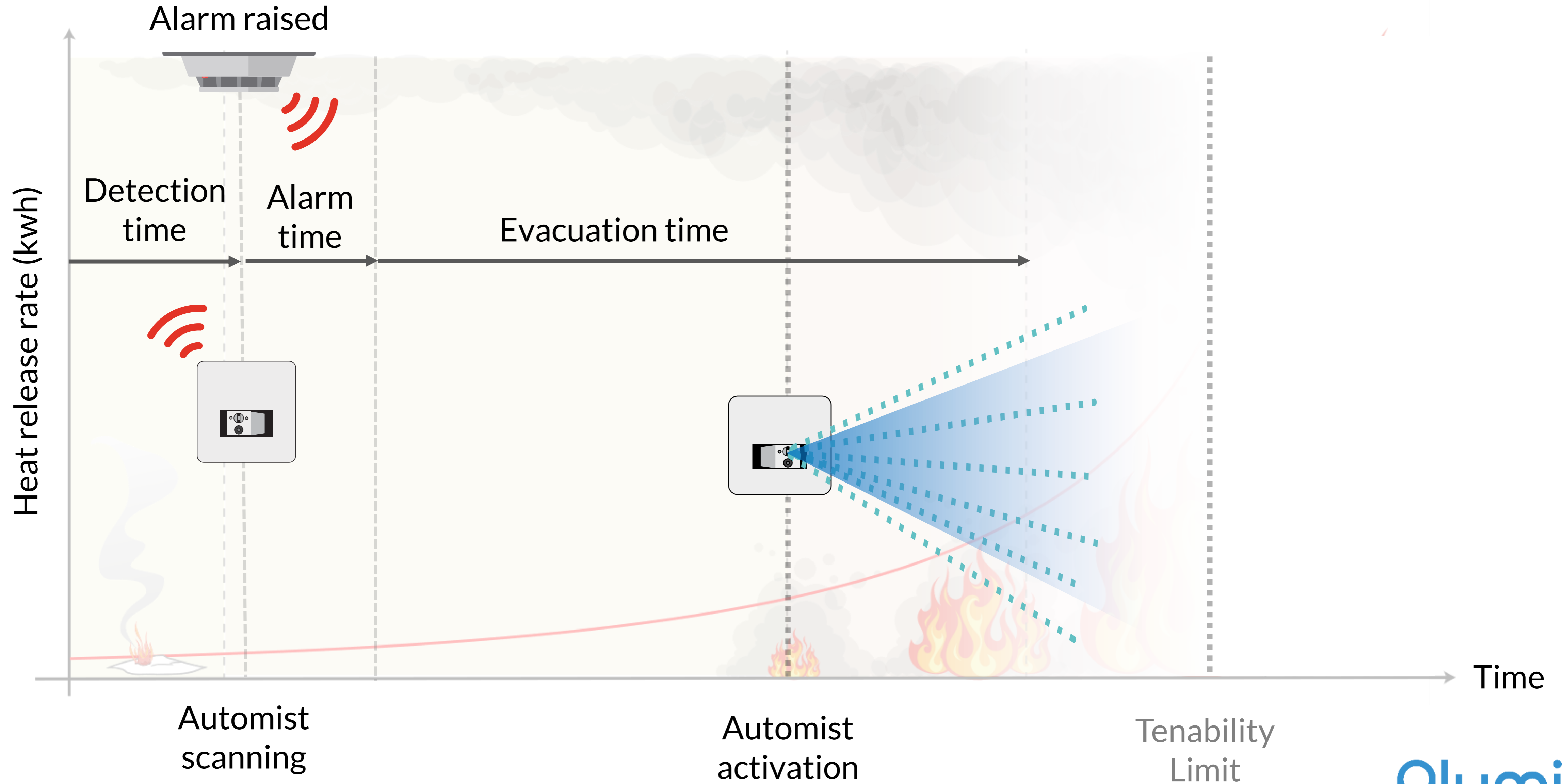


Sprinkler
activation

Smoke kills



Smoke kills



Problems with a traditional approach



Smoke



Installation

Installation



Problems with a traditional approach



Smoke



Installation

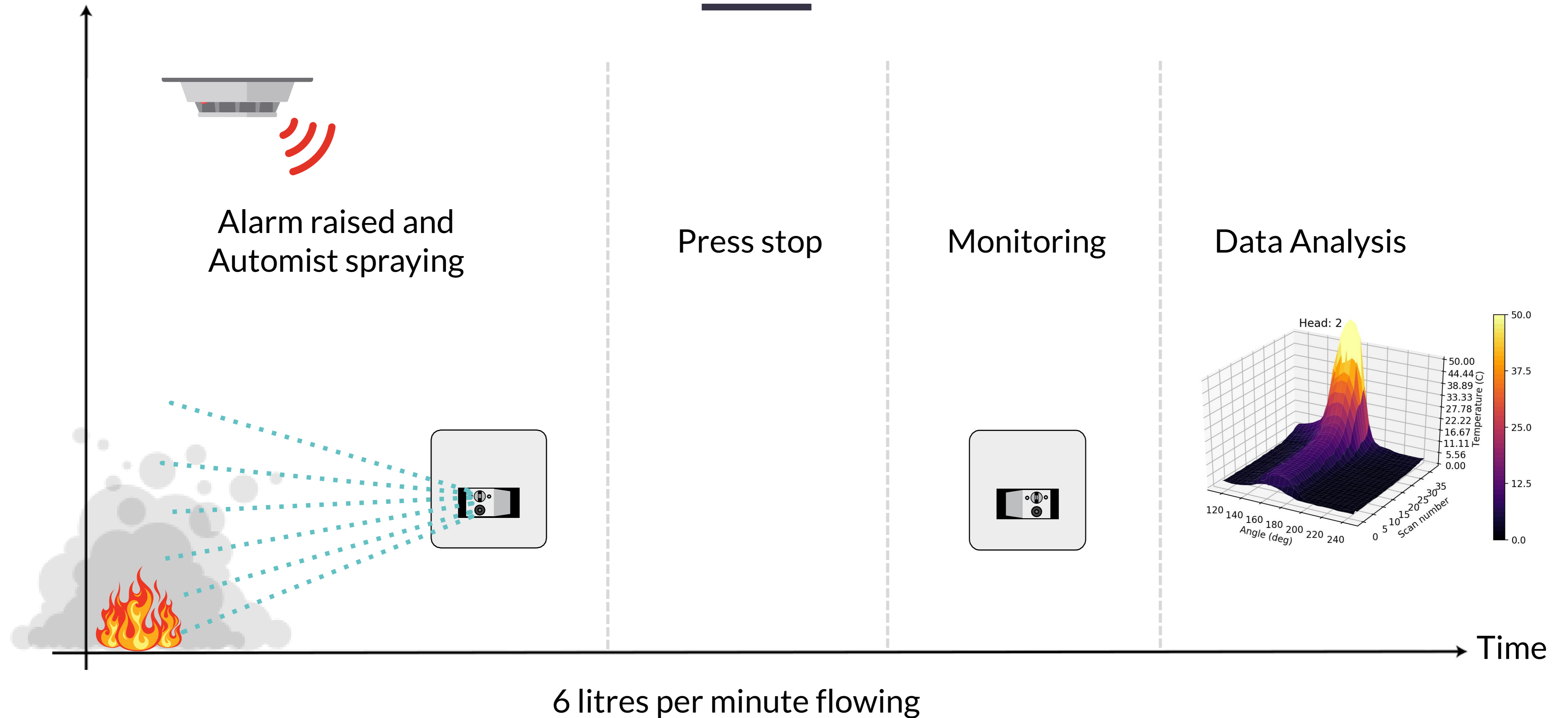


Water damage

Water escape



Water escape



Problems with a traditional approach



Smoke



Installation



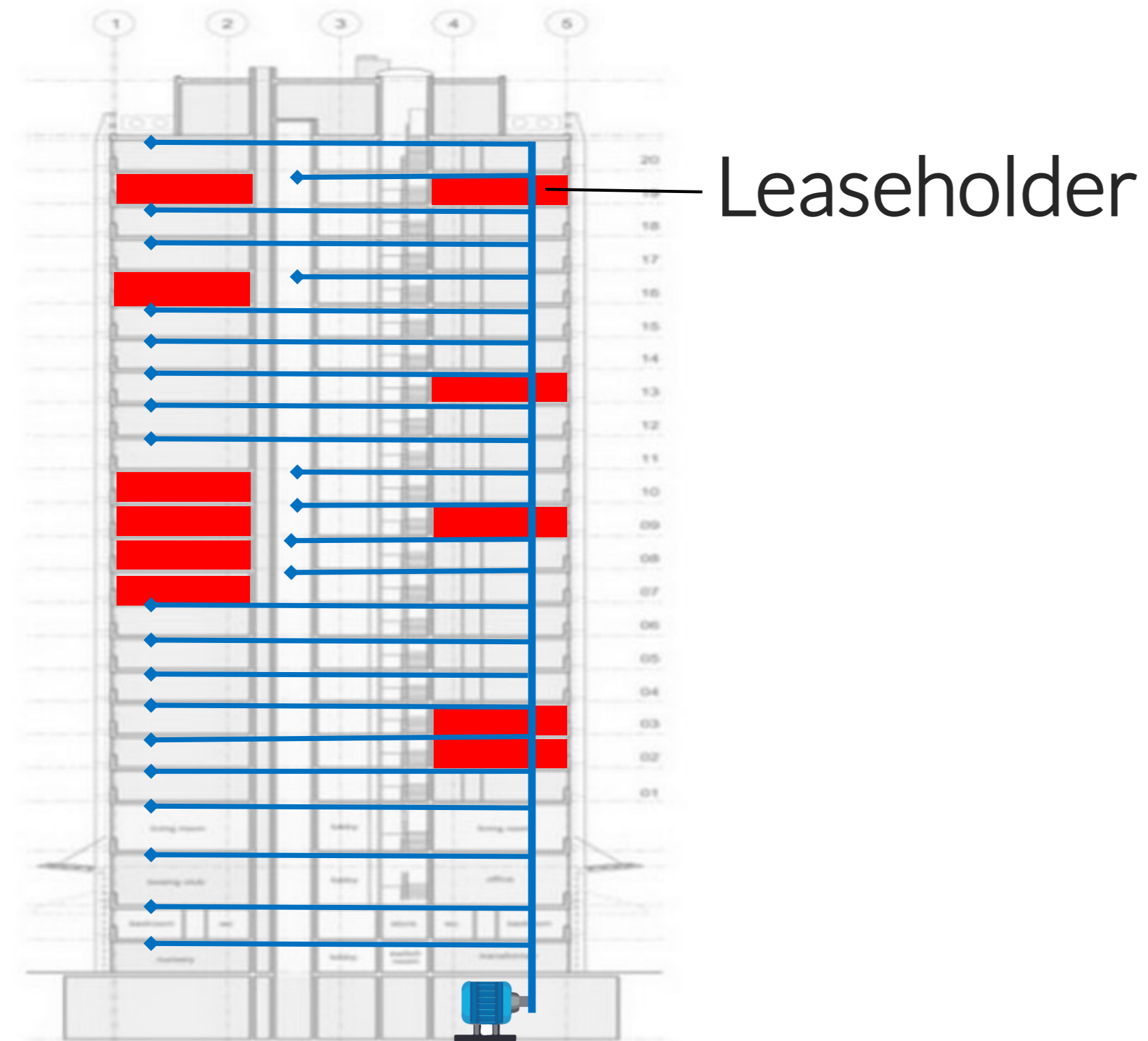
Water damage



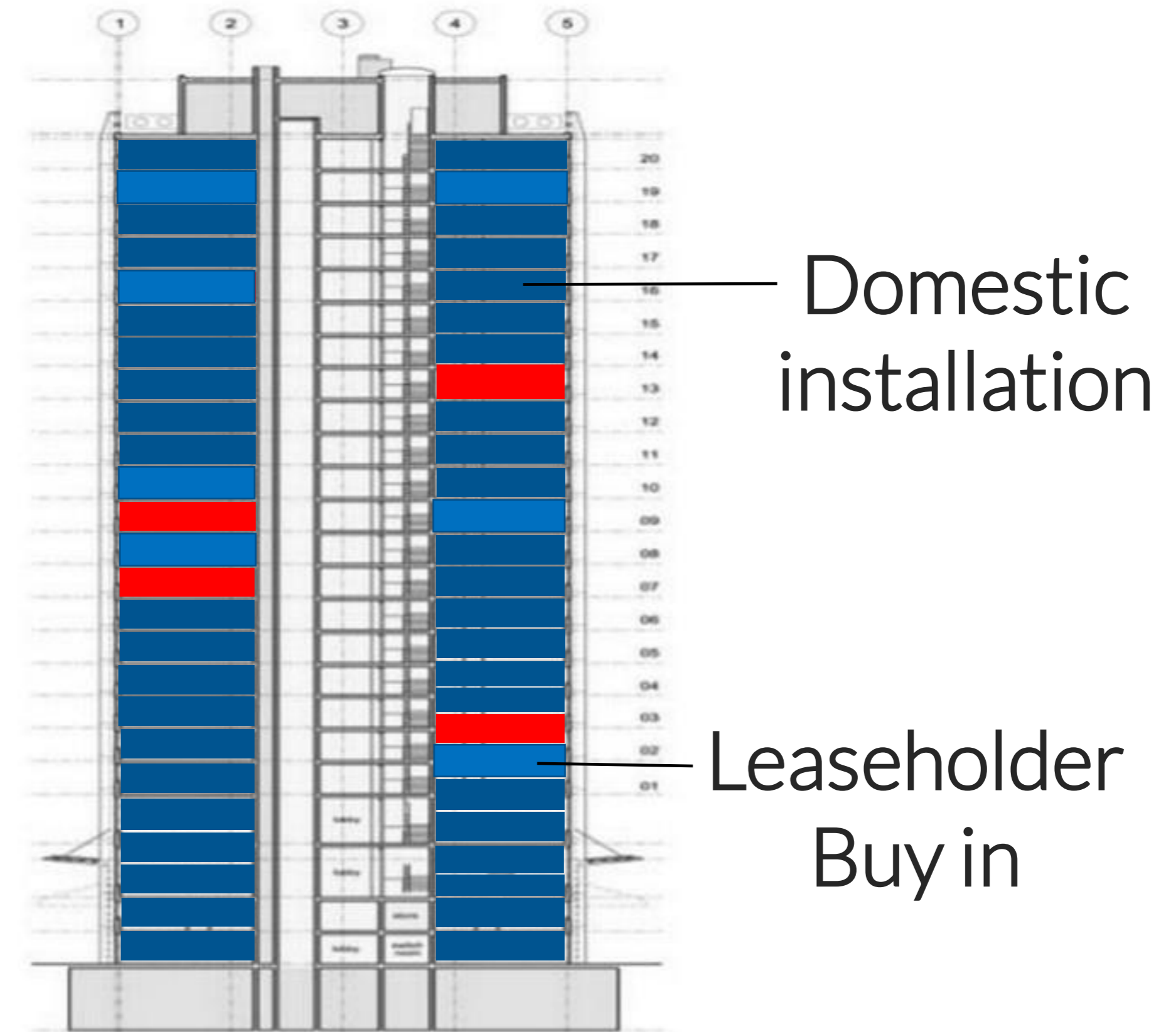
Buy in



Mixed tenure blocks

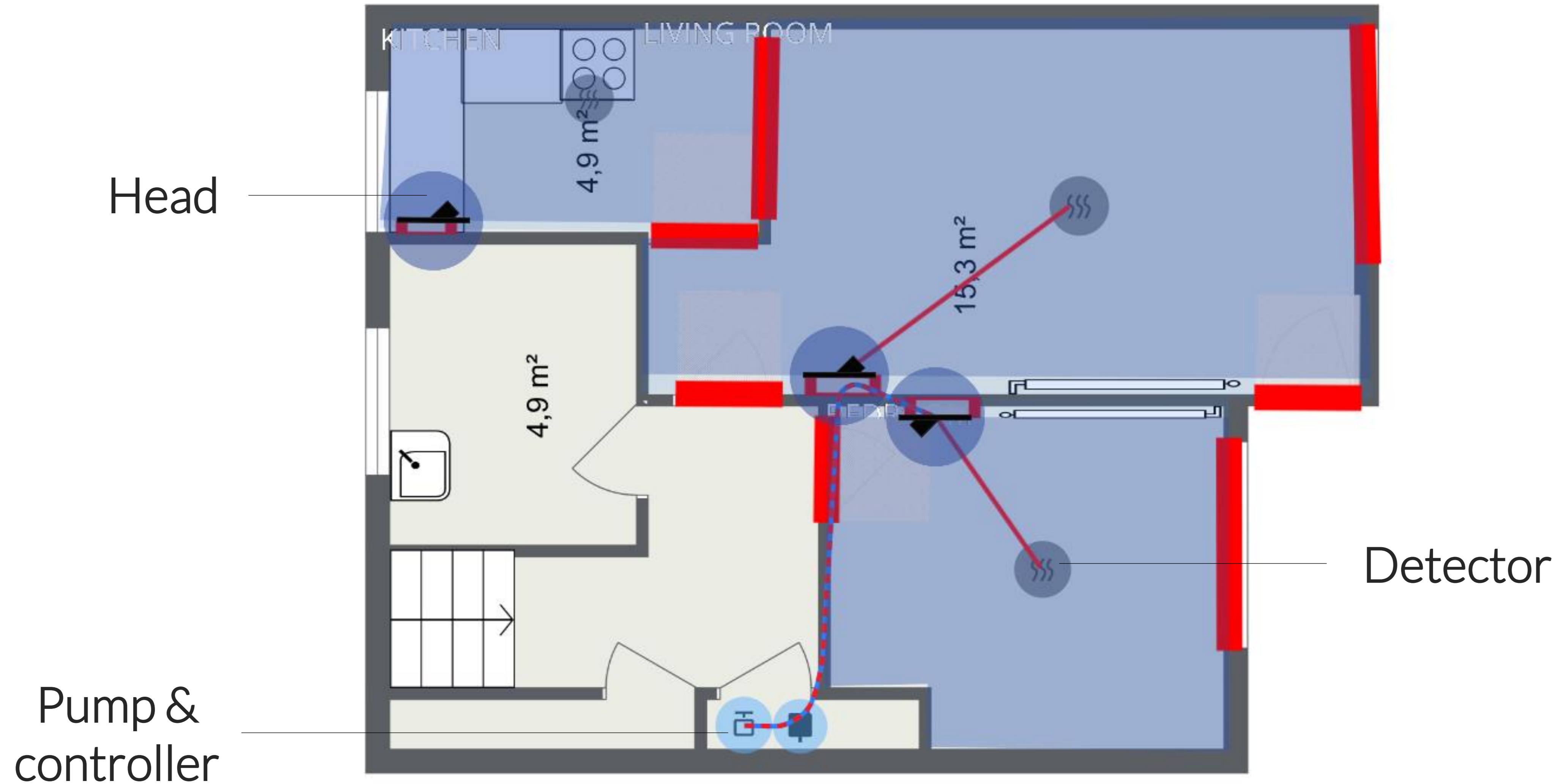


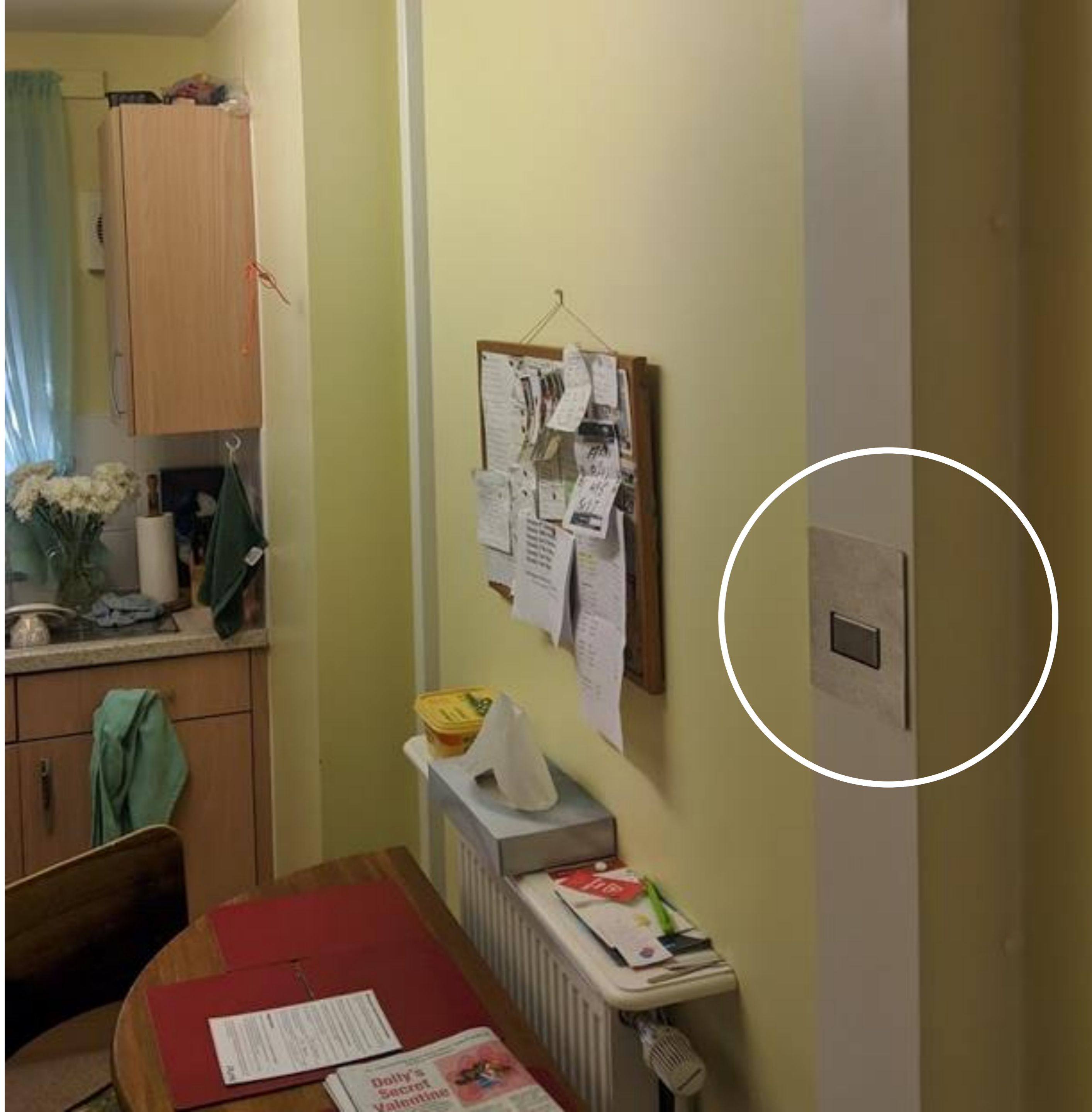
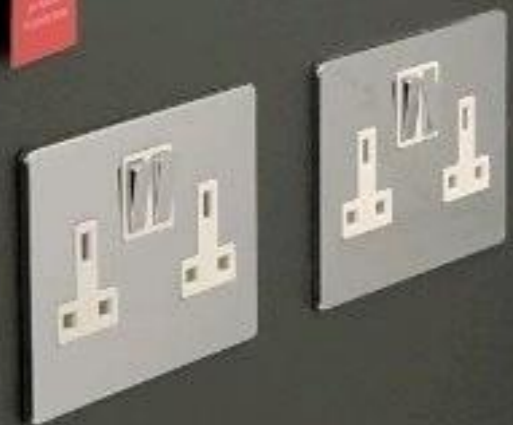
Sprinkler



Automist

Sheltered housing retrofit

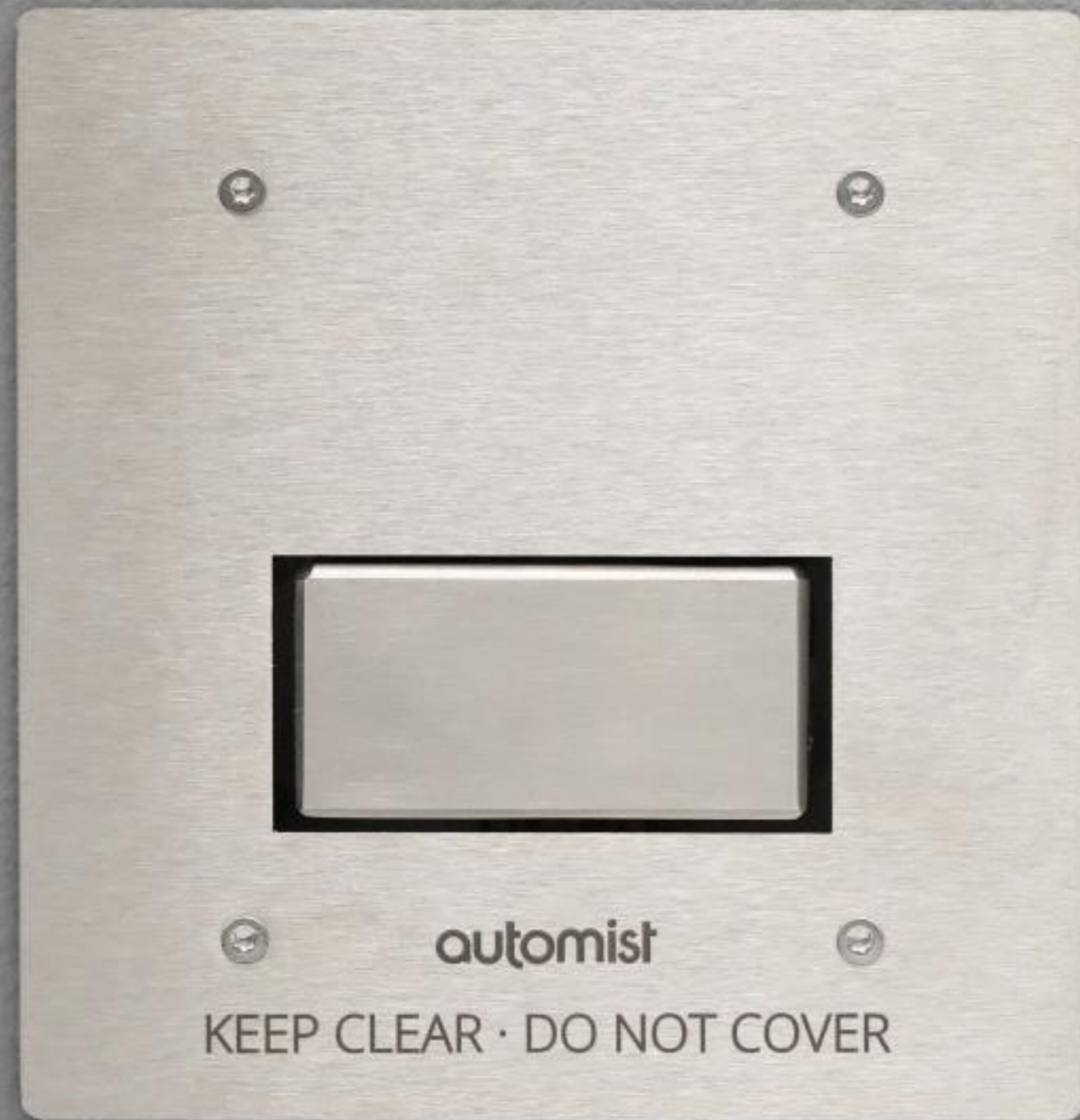






Virtually stored





Thank you for listening

For FAQs:

<https://support.plumis.com>