



Retrofitting Water Mist: Products & Case Studies

UK Water Mist Seminar 2018

*Yusuf Muhammad
Co-founder &
Design Director*

The Plumis logo consists of a blue circle containing the word 'Plumis' in white, lowercase, sans-serif font.

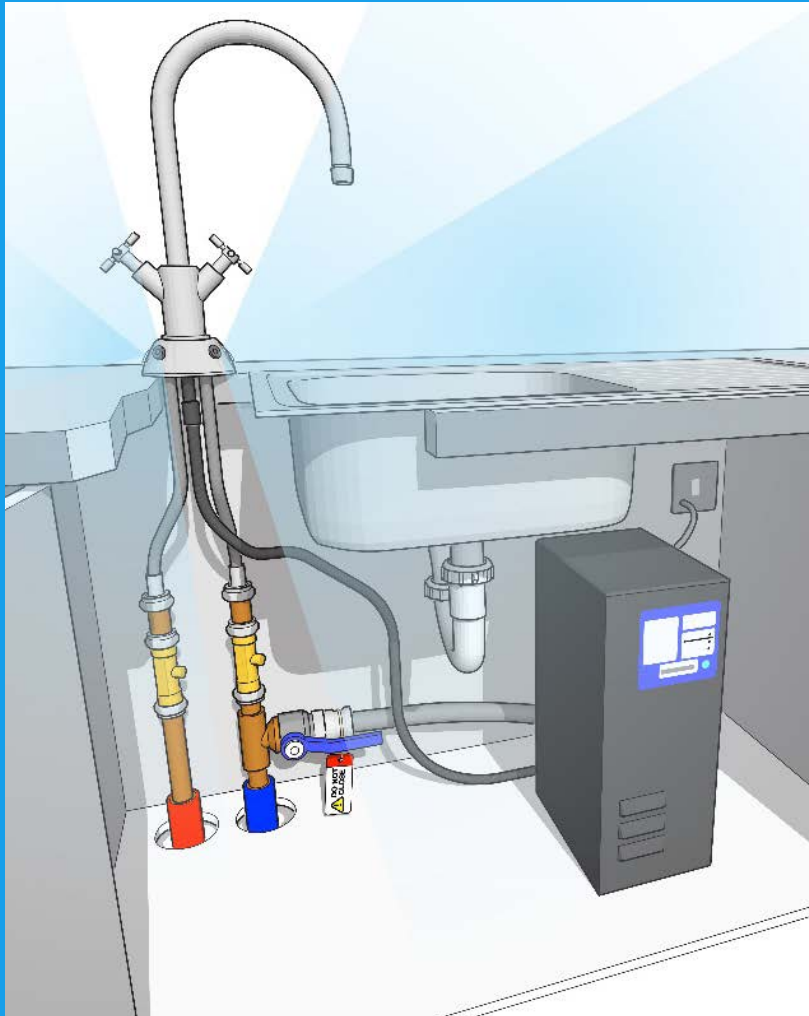
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IWMA First Conference in the UK 2007



My background



Appearance Model



My background

theguardian

The innovators: mist system offers a safer way to control fires

The creators of Automist explain how a fine mist can cool and suppress fires more effectively than sprinkler systems, especially when caused by chip pans



Designer director, Yusuf Muhammad (left) and managing director, William Makant, of Plumis show their Automist system in action. Photograph: Christian Sinibaldi

Tt was during a brainstorming session with members of the white watch shift

The Telegraph

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Sir James Dyson backs kitchen taps to save lives and launches 2010 competition

Royal College of Art graduates create fire extinguishing system using water mist sprayed from kitchen taps and plan to launch the product by the end of the year thanks to a £10,000 award from Sir James Dyson

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In Your Business



Yusuf Muhammad and Paul Thomas, inventors of the Automist with their fire extinguishing device which is fitted to a tap Photo: JANE MINGAY

By Richard Tyler
4:40PM BST 17 May 2010

Telegraph 1000: Britain's Brightest Businesses

CHALLENGES FACING RESIDENTIAL FIRE SPRINKLERS

HISTORY

- Fundamentally unchanged since the invention of the first practical automatic fire sprinkler by Frederick Grinnell 1882.
- Fewer than 3% of council tower blocks are fitted with sprinklers
- Difficulties remain unchanged:
 - Is there adequate water supply?
 - How disruptive will this installation be to building tenants?
 - Will the existing fire-alarm panel handle the new flow alarms, valve-tamper switches, and other electrical devices that need to be added?

GRINNELL
AUTOMATIC SPRINKLERS
"Standard of the World"

Protect more than \$2,000,000,000 of Business Value

17,900 fires extinguished.
Average loss \$265

No life ever lost where "Grinnell's" were in commission.

Insurance saving and interest, \$425,000,000

General Fire Extinguisher Company
277 West Exchange St., PROVIDENCE, R. I.

The advertisement features two technical diagrams of a Grinnell automatic sprinkler. The left diagram is a side view showing the internal components, including the glass bulb (A), the glass vial (B), the glass vial cap (C), the glass vial base (D), the glass vial neck (E), the glass vial body (F), the glass vial top (G), the glass vial bottom (H), the glass vial side (I), the glass vial end (J), and the glass vial joint (K). The right diagram is a top-down view showing the glass bulb (A), the glass vial (B), the glass vial cap (C), the glass vial base (D), the glass vial neck (E), the glass vial body (F), the glass vial top (G), the glass vial bottom (H), the glass vial side (I), the glass vial end (J), and the glass vial joint (K). A legend below the diagrams identifies the parts: A—Yoke, B—Body, C—Diaphragm, D—Glass Vial, E—Glass Vial Cap, F—Glass Vial Base, G—Glass Vial Neck, H—Glass Vial Body, I—Glass Vial Top, J—Glass Vial Bottom, K—Glass Vial Side.

Today

- Legislation has focused on new build where the cost can be diluted. Only buildings constructed since 2007 and which are taller than 30m are required to have sprinklers fitted.
- This requirement wasn't applied retroactively (Grenfell Tower, was built in 1974).
- Sir Ken Knight, the author of a report on the Lakanal House fire, said that while there was significant evidence of the effectiveness of systems such as sprinklers controlling fire spread in buildings, it was not considered "practical or economically viable" to enforce the retrospective fitting of fire suppression systems to all current high-rise residential buildings.
- After the Shirley Towers fire in 2010, it cost the council £1m to install sprinklers in three tower blocks.

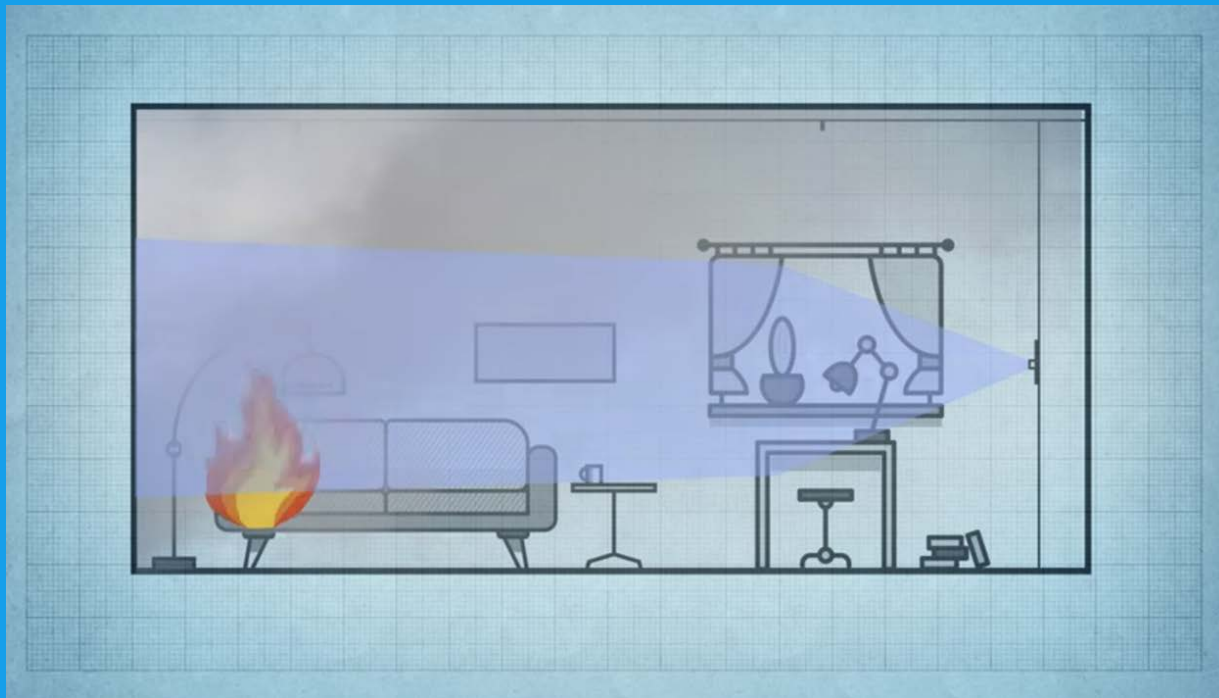
AUTOMIST METHODOLOGY

R&D Boundary Conditions

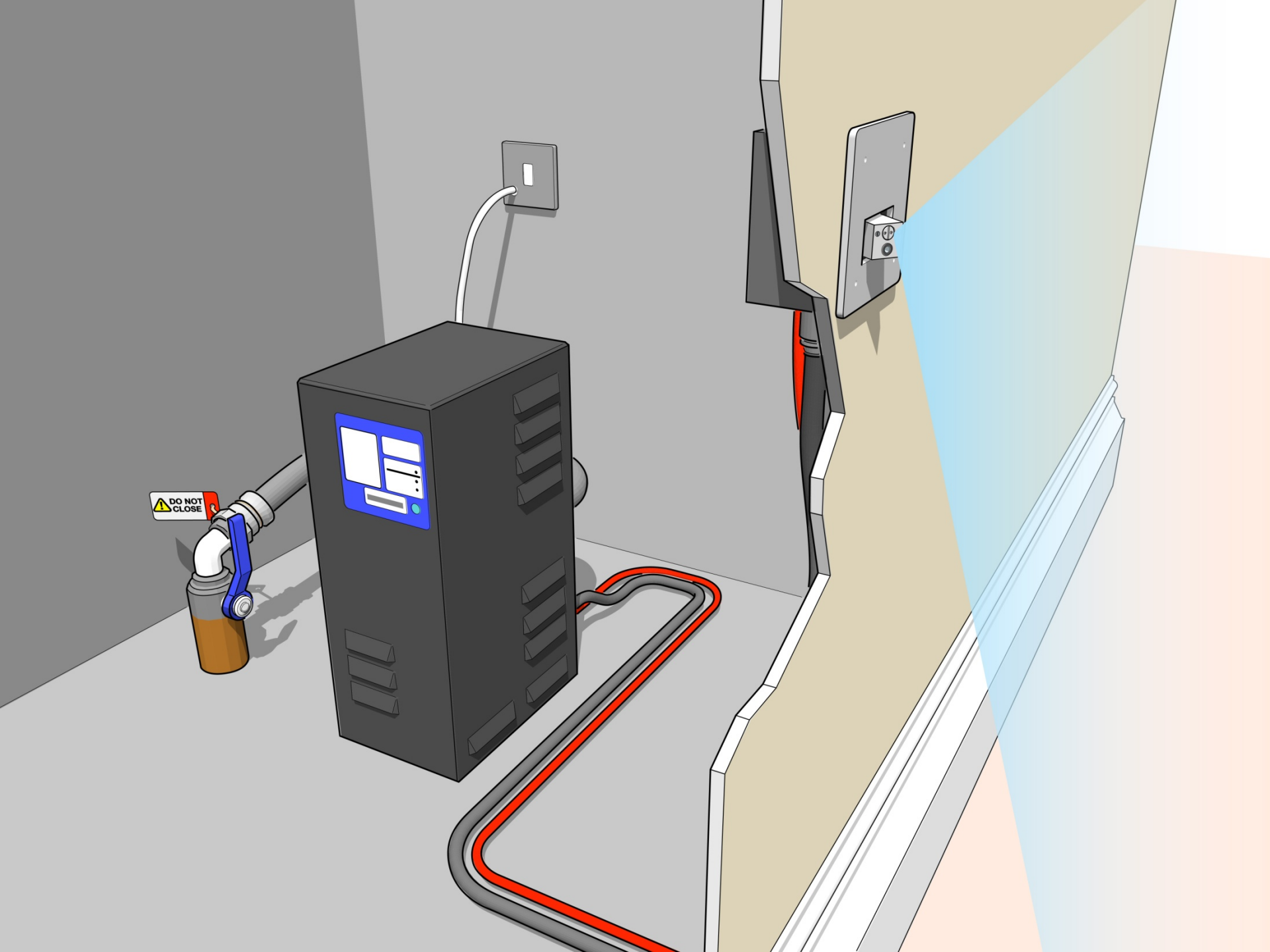
- Low flow: <6lpm
 - Keep ease of retrofit & water damage stigma
- BS 8458:2015, BS 9252:2011 & UL2167
 - Robust sprinkler fire performance

R&D Boundary Conditions

- Mid-wall mounted head: 1.5m approx.
 - Efficient use of mist (Eureka prize by Prof. Ragnar Wigus)



AUTOMIST SMARTSCAN



- Infrared heat signature is not only from flames



Figure 1: Partially shielded fire visible light spectrum capture

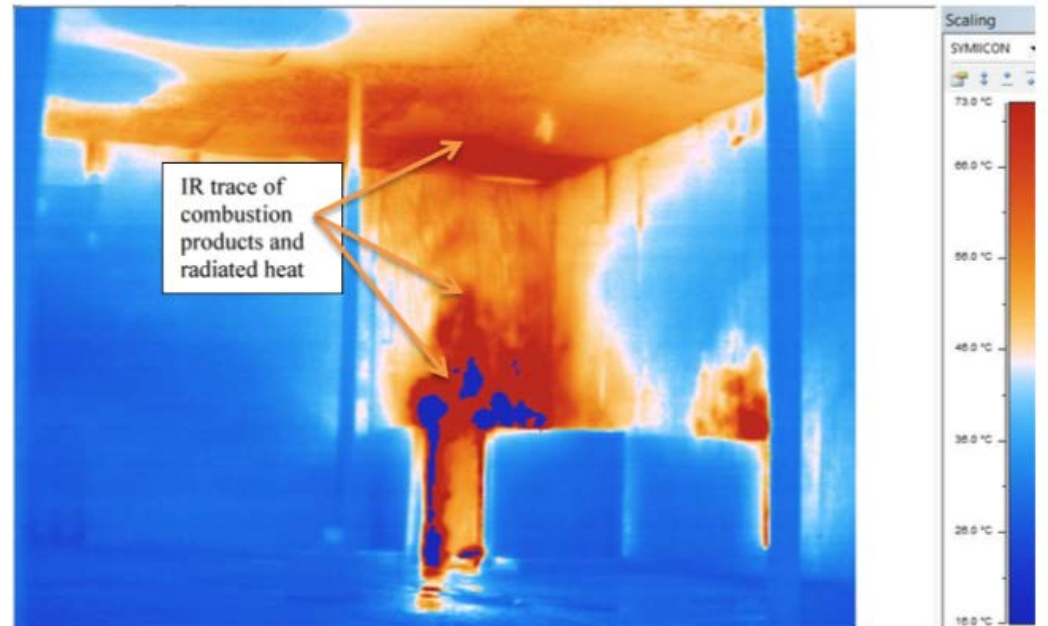
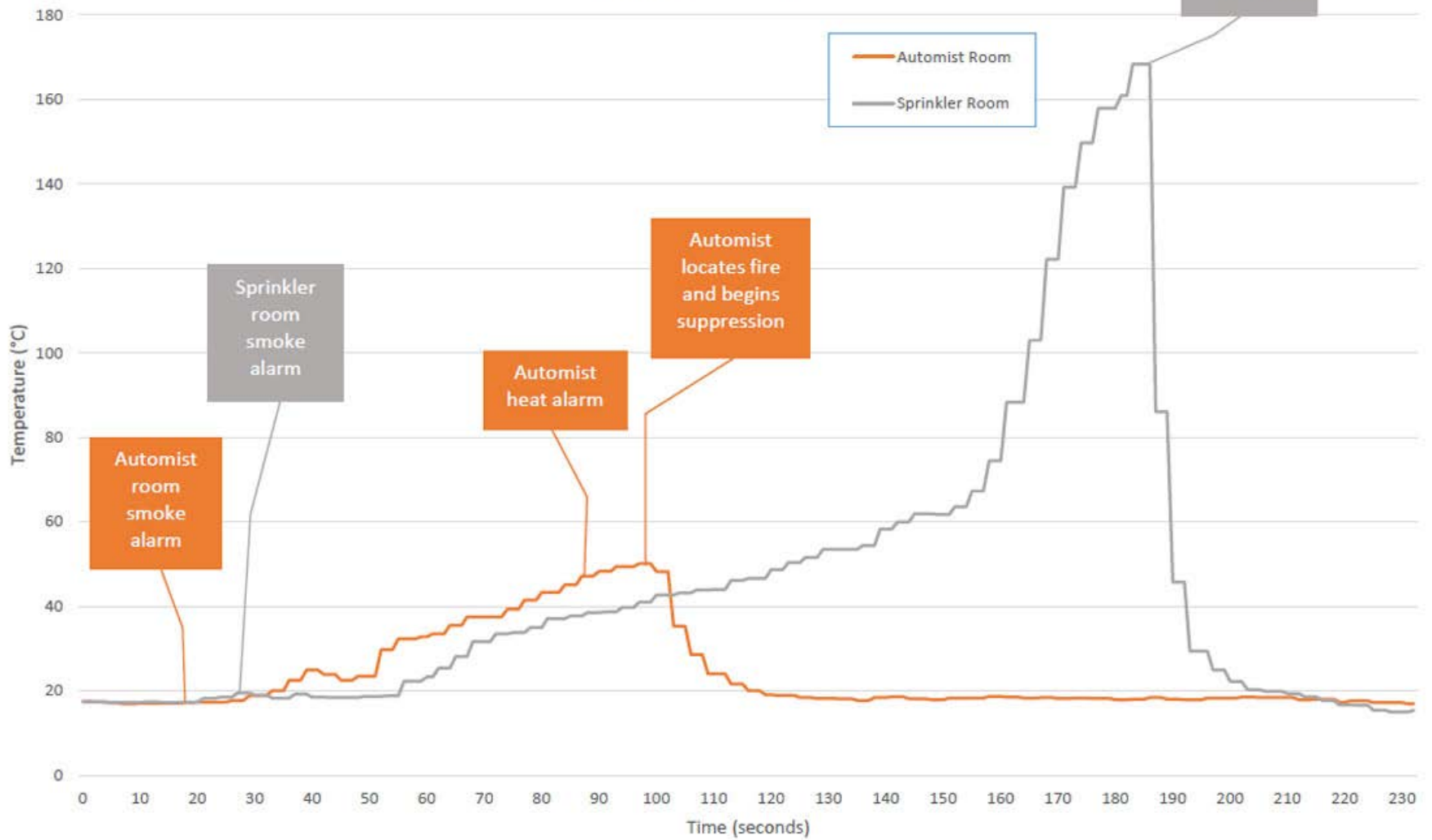


Figure 14: Partially shielded fire IR spectrum capture

Comparative Temperature vs Time



PRODUCT CASE STUDIES

Retrofitting Surrey Towers

- The authority adopted the policy in 2014 following consultation with Surrey Fire and Rescue Service after reviewing its fire risk assessment in light of the coroner's ruling following the Shirley Towers blaze.

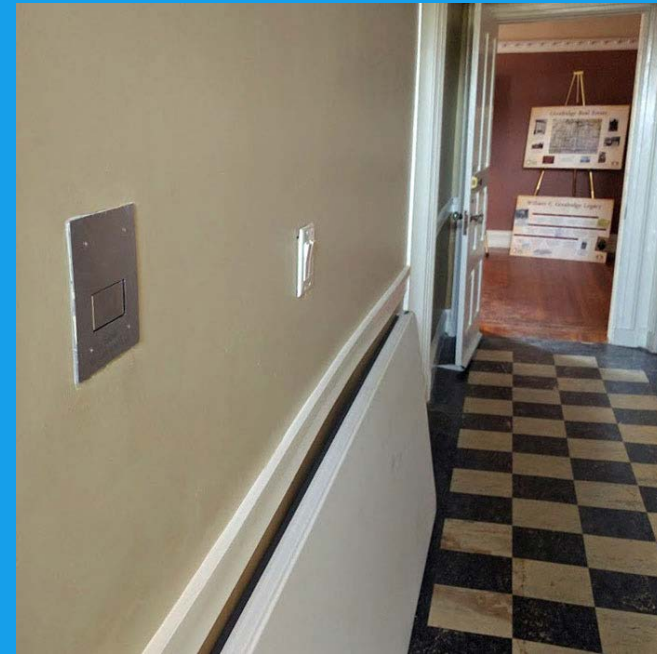


Retrofitting Surrey Towers

- Automist was selected because it is easier to retrofit than other active fire suppression systems. Its wall mounted spray head also meant it was easy to avoid asbestos which is sometimes prevalent in older buildings.
- Runneymede Council has fitted more than 30 of the 95 flats so far (circa Jan 2018).

Protecting Goodridge House

- The Goodridge House is an existing IIB building with mixed use Group A-3/B. The main floor serves as a museum displaying period specific items that belonged to the house, with office space above.



45m Rule: throughout



Automist reduces arson damage Exeter City Council

- Automist installed in response to repeated arson attempts, 3 times by social housing tenant
- Coverage provided for living area
- Arsonist set fire and attacked Automist when activated.



Conclusions

- A retrofitable, partial coverage, non-intrusive active fire suppression solution
- Installed by accredited Automist partners
- Used for open layout regulatory compliance
 - Automist: Loft conversions – passive alternative
 - Automist Smartscan – sprinkler alternative

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Questions?