



Insulation fire in Evere

Karel Lambert

IFIW 2017 – Hong Kong

Karel Lambert



© Pascal Vigneron



Karel Lambert





Niet alleen wat en hoe, maar waarom!

CFBT-BE



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ARTICLES

On our website you can find a number of articles that were published in a variety of firefighting magazines. Most of the articles were originally written in Dutch. The Dutch version of the articles are indicated with name_NL. Several articles have been translated into English. Those are marked name_ENG.

DE BRANDWEERMAN (THE FIREFIGHTER)

"De brandweerman" is a Flemish magazine that appears 5 times per year. It is distributed to most Dutch speaking firefighters in Belgium. Karel Lambert writes an article about (interior) firefighting for every issue of the magazine.

			 				
1. Evolution in the knowledge about interior firefighting	01_NL	01_FR	01_EN	01_TR	01_ES		
2. A fire suffering from a lack of air	02_NL	02_FR	02_EN	02_TR	02_ES		
3. Wind Driven Fires	03_NL	03_FR	03_EN	03_TR	03_ES		
4. Backdraft	04_NL	04_FR	04_EN	04_TR	04_ES		
5. Responding to a Chimney fire - Case Study	05_NL	05_FR	05_EN	05_TR	05_ES		
6. The most familiar form of Rapid Fire Progress: Flashover	06_NL	06_FR	06_EN	06_TR	06_ES		
7. New insights into ventilation	07_NL	07_FR	07_EN	07_TR	07_ES		
8. Posts inside a network: new tactics ?	08_NL	08_FR	08_EN	08_TR	08_ES		
9. Fire Gas Ignition	09_NL	09_FR	09_EN	09_TR	09_ES		
10. Insights concerning the door entry procedure	10_NL	10_FR	10_EN	10_TR	10_ES		
11. Firefighting: Command & tactics	11_NL	11_FR	11_EN	11_TR	11_ES		

Belgium



Belgium: inventor of the “French” fries





Brussels



Brussels



Brussels, capital of Europe





Brussels Fire Department

- 167 km²
- 1.2 million people
- 7185/km²
- 1.000 career firefighters
- 1 brigade
- 8 stations
- 150 FF on duty 24/24

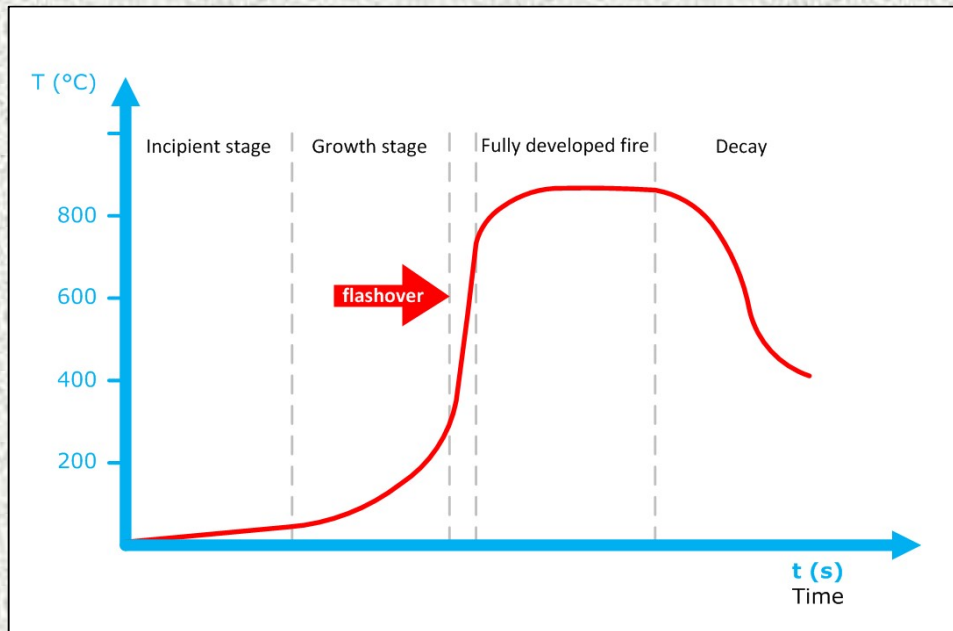




Past years: 2 types of fires

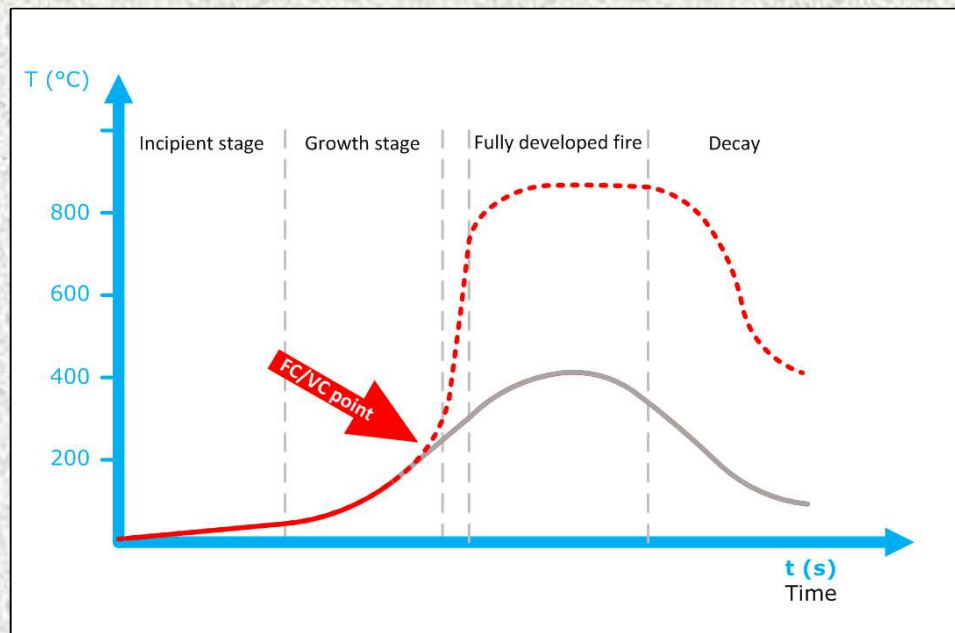
- Ventilated fires
- Under ventilated fires

Ventilated fires



© Picture: Nico Speleers

Under ventilated fires



© Picture: Zbigniew Wozniak



2 → 3 types of fires

- Ventilated fires
- Under ventilated fires
- Construction fires











Basic Fire crew

2 Engines



Driver, 2 NCO's, 3 FF
Flow: 2.000 lpm
Water Tank: 2.500 litres
(660 gpm)

2 Ladders



Ladder crew:
2 specialists



Basic Fire crew

Command Car



Battalion Chief
Driver

Ambulance



2 paramedics



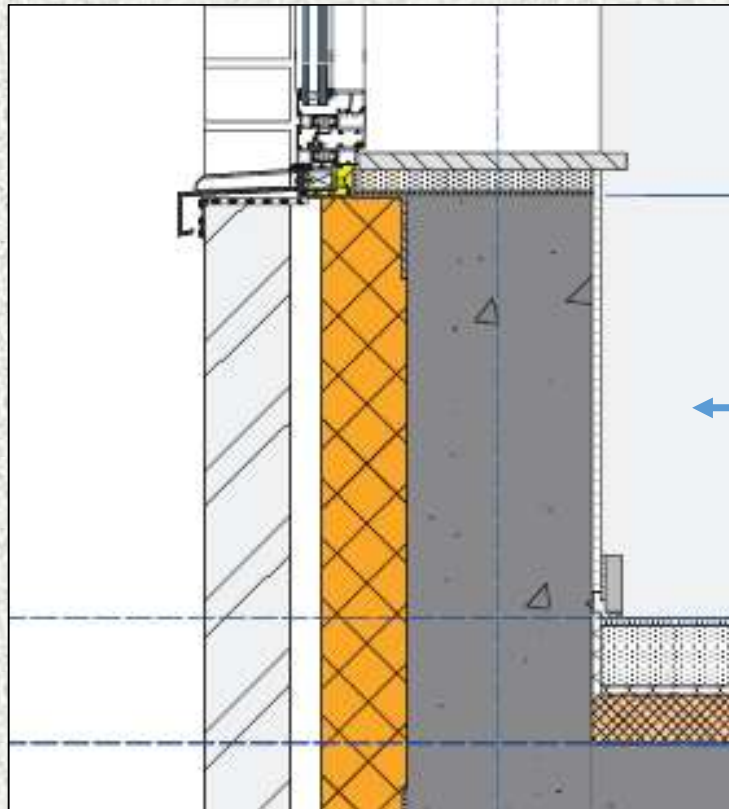
Introduction

- Date: November 3rd 2015
- Adress: Cicero avenue 17, Evere
- Fire by roofing workers



© drawing: A2RC

Two ways of constructing a facade



© drawing: A2RC

Rough coat

Masonry



Picture: Pieter Maes



Situation on arrival

- Schaarbeek on scene
- Roofing works on a flat roof on the 2nd loor.
- Workers use powder extinguishers
- Situation seems under control
- HP booster line on ladder.
- CAN report by capt Schaarbeek
- Decision to have fognails on scene.

Fognails

- New to BFD
- Only in ladder trucks of HQ
- One set in heavy rescue + heavy drill
- No drills in ladder trucks

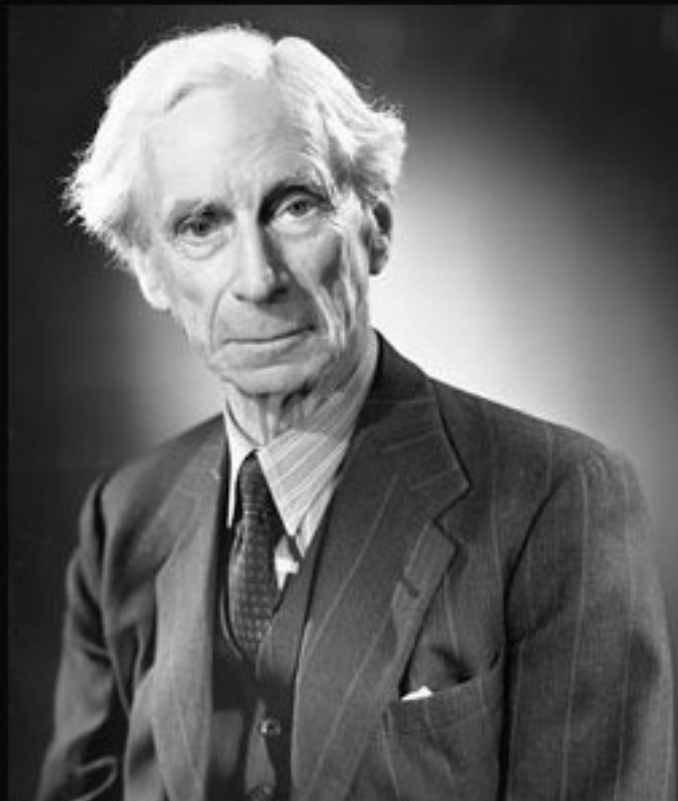


Size up

- Fire seems extinguished
- Remaining heat in facade?
- Facade looks perfectly normal with the naked eye.



Picture: Karel Lambert



The trouble with the world is that the stupid
are cocksure and the intelligent are full of
doubt.

(Bertrand Russell)

Size-up later during the call



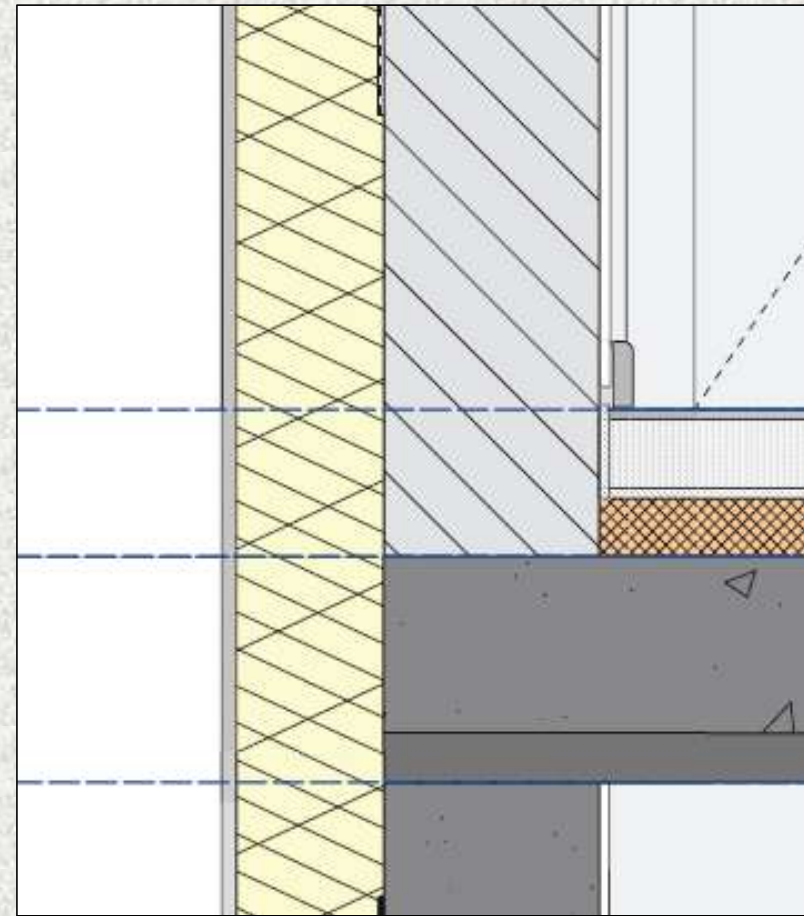
The overhang doesn't have the structure it was thought to have.

Possible fire spread

Picture: Pieter Maes

Situation

- Insulation fire in facade
- Insulation fire in overhang
- Fognails are used at brick wall.
- Remove insulation around drainpipe.



Further actions



- Two FF are sent in to inform occupants and perform CO-measurements.
- After opening up around the water drain, the fire seems to have progressed further.

Picture: Pieter Maes

Further actions

- Opening up 5 m Further
- Fire smell and soot deposit inside on 3rd floor.
- Ask to make a horizontal cut on the terrace of the 3rd floor.



Picture: Pieter Maes

Fire has passed the cut already



Pictures: Pieter Maes

Situation

- Fire in masonry on 2nd floor (vertical)
- Fire in insulation under overhang (horizontal)
- Soot deposit on 3rd floor (possible vertical fire spread)
- Fire in overhang has crossed the angle of the building (horizontal fire spread)

Picture: Robert Dekock



Fire spread

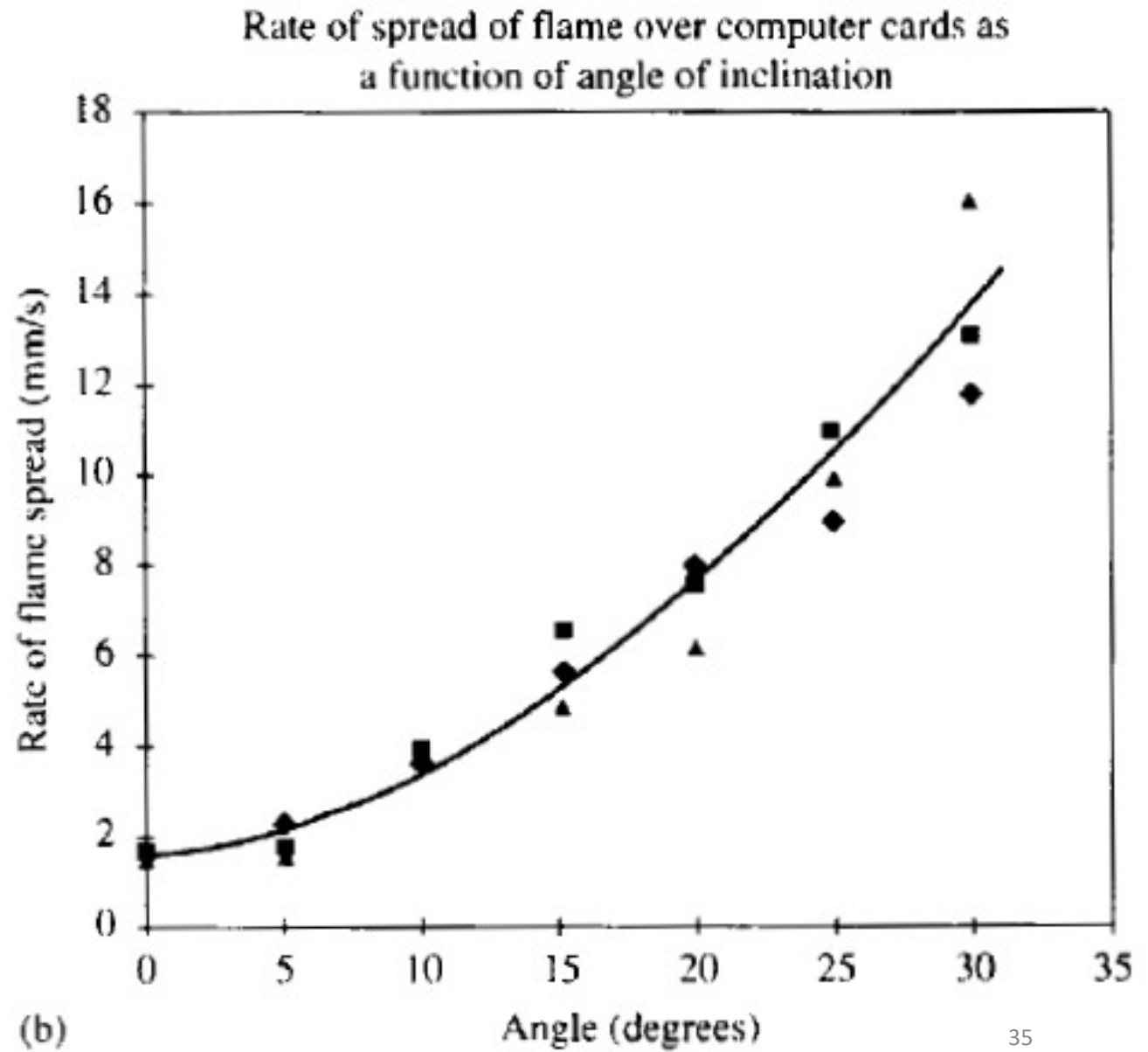
- Horizontal fire spread
- Vertical fire spread

Picture: Robert Dekock

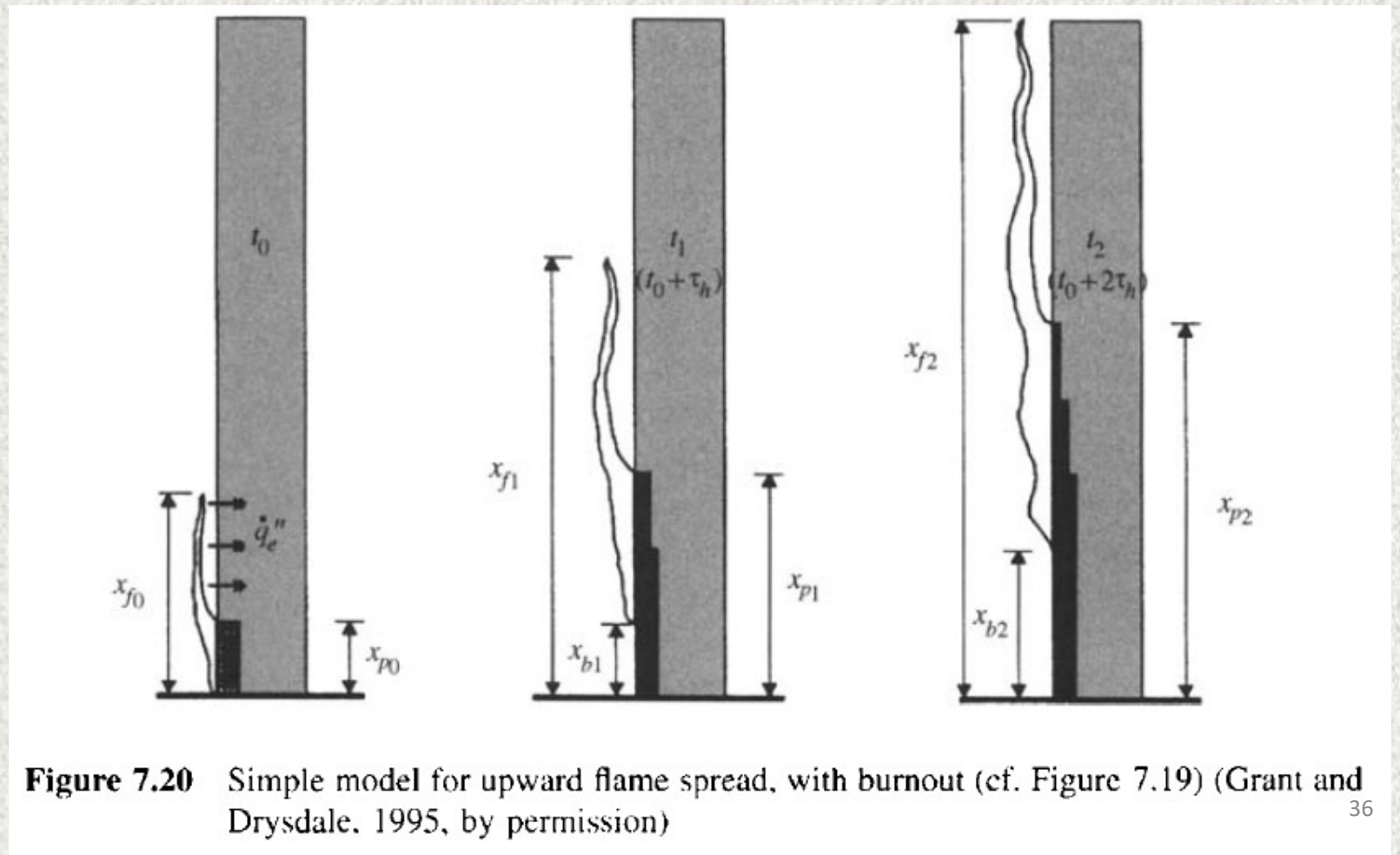


Fire spread

© Drysdale D (1998) introduction to fire dynamics, 2nd edition



Fire spread



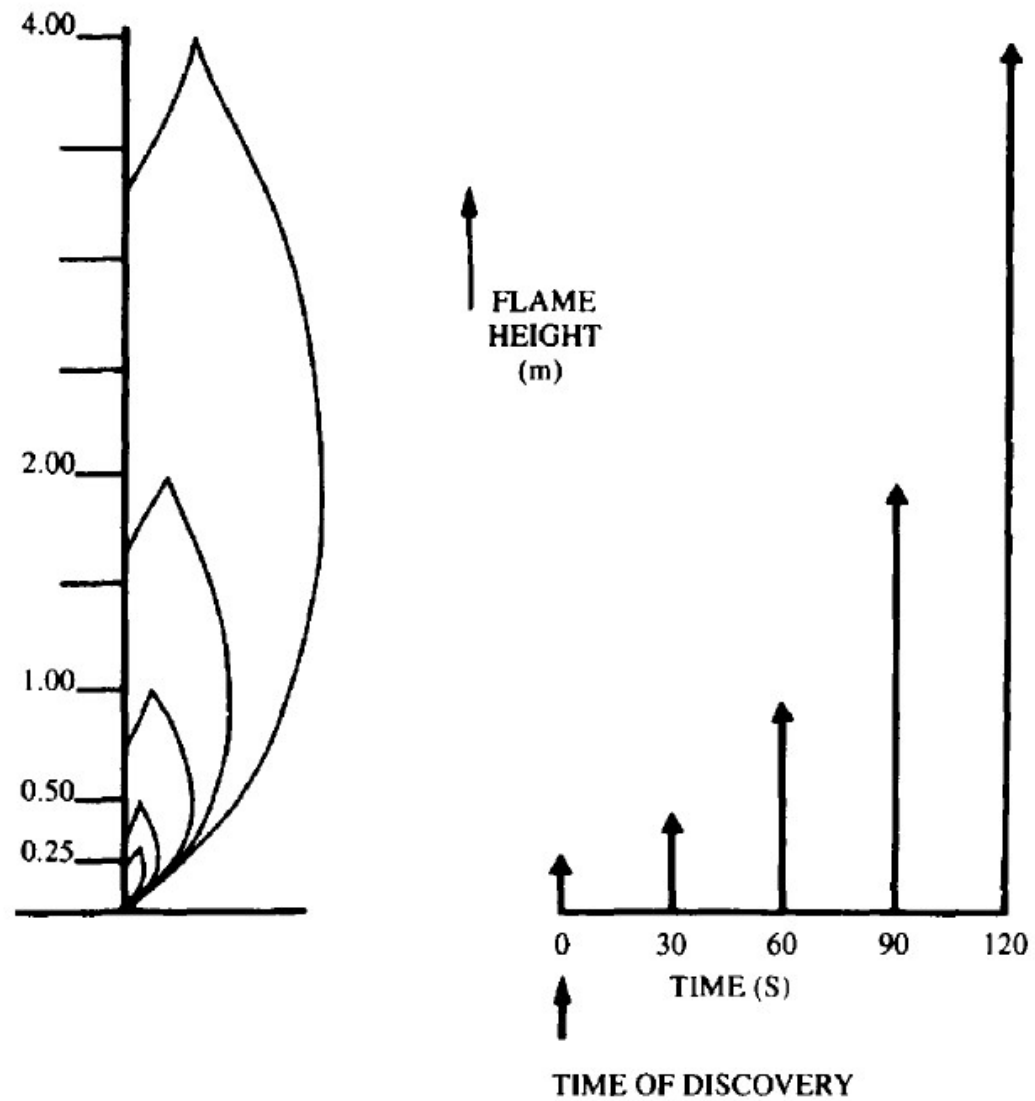


Figure 7.21 Illustration of the exponential growth in flame height for vertical spread. Doubling time 30 s (after Alpert and Ward, 1984, with permission)





Approach

- Deliberation with assistant-chief
- Extra fognails (incl. neighbouring region)
- 3rd ladder to work faster

Parts in rough coat

- Make “trench cuts” to circumscribe the fire
- Remove damaged insulation

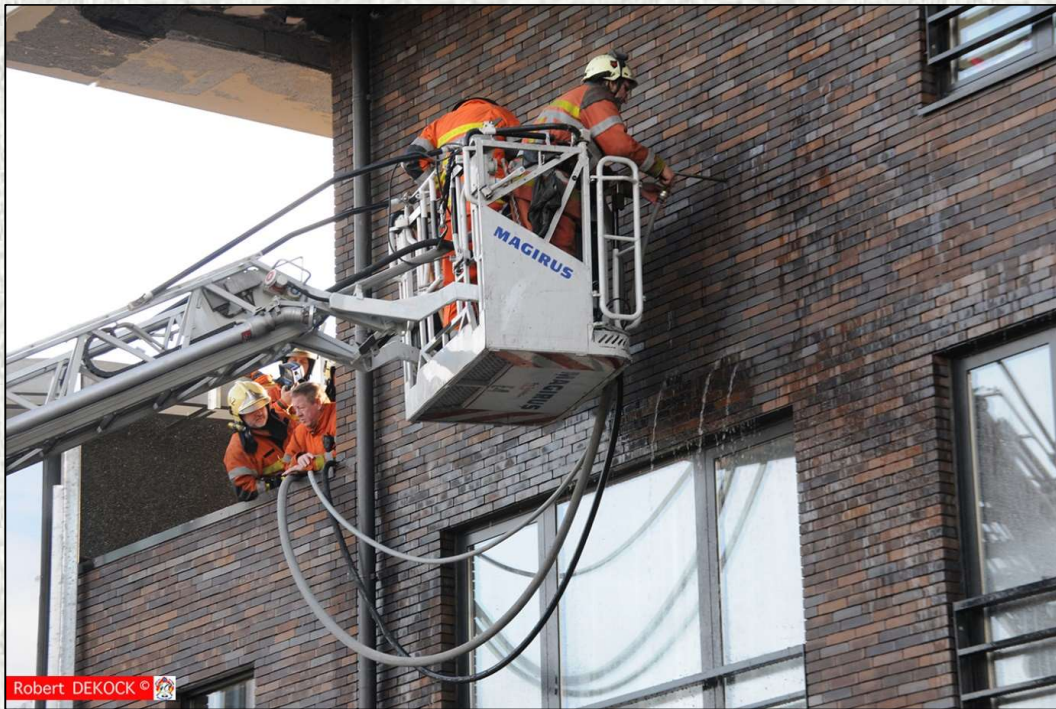
Parts in masonry

- Drill holes
- Use fognails





Deployment fognails



- Very good work by the heavy rescue guys
- Recommendation: more heavy drills needed

Picture: Robert Dekock

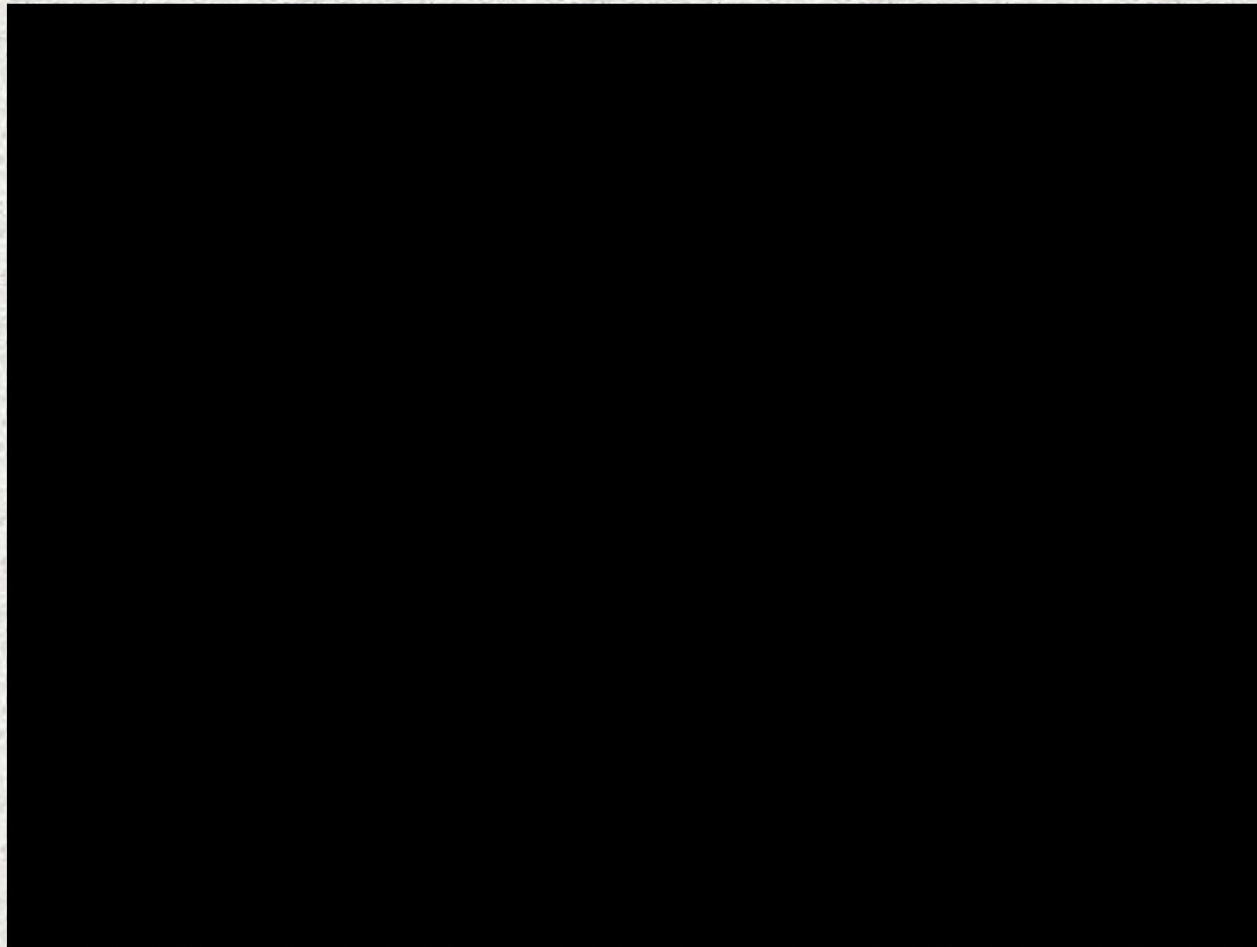
Damage

- Fire spread through connection of facade and overhang.
- Soot deposit shows until where the fire has spread.
- Fire has spread up to 20-30 cm of the vertical plane!

Picture: Pieter Maes



Alternative scenario



Combustible facades are getting more common

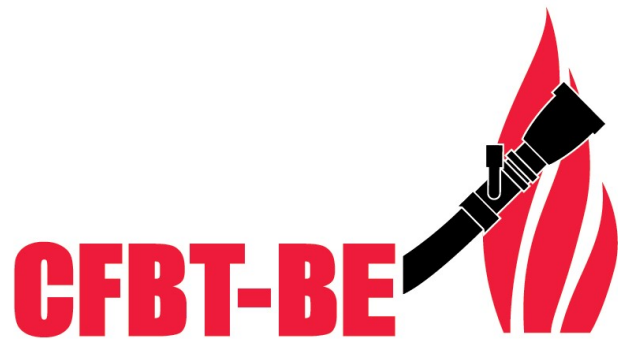


Picture: Elena Fitkulina, AFP/Getty Images



Picture: www.publika.uz

Questions?



Niet alleen wat en hoe, maar waarom! ®

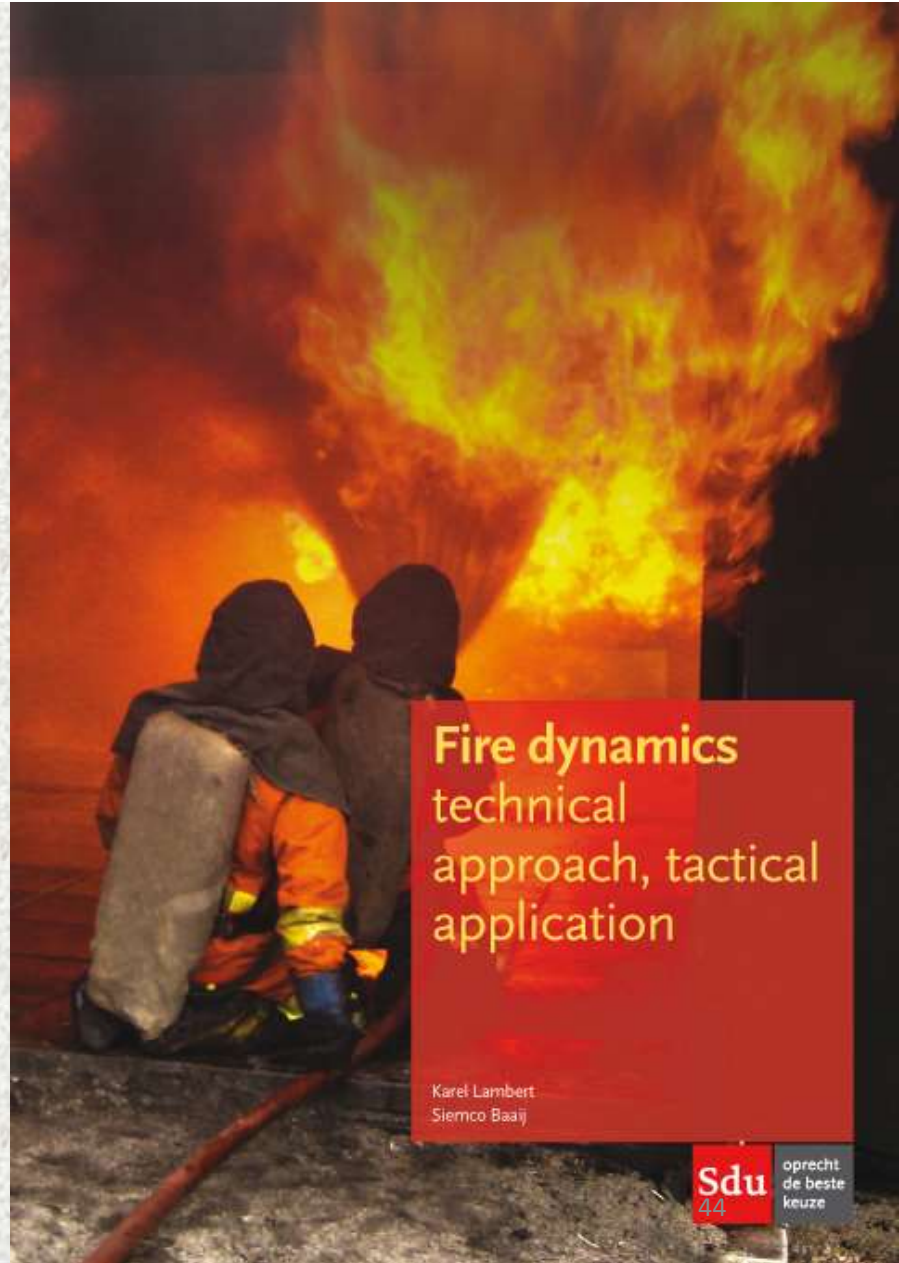
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Fire dynamics
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Karel Lambert
Siemco Baaij

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