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# Murphy visits Anderlecht!

Karel Lambert

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## Karel Lambert

- Volunteer Sergeant: 22 years
- Major in Brussels FD: 20 years



## Karel Lambert



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## Karel Lambert

- Instructor
- Author
- Teamleader of CFBT-BE



[www.cfbt-be.com/en](http://www.cfbt-be.com/en)

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Niet alleen wat en hoe, maar waarom! **CFBT-BE**

**HOOFDMENU**

- > Welcome
- > Publications
  - > Articles
  - > papers
  - > Books
- > Fire Behaviour & Fire Fighting
- > Ventilation
- > Colleagues and suggested literature
- > IFIW
- > learning from incidents
- > Incident Command System (ICS)
- > Leadership
- > What's new?
- > Contact

**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.

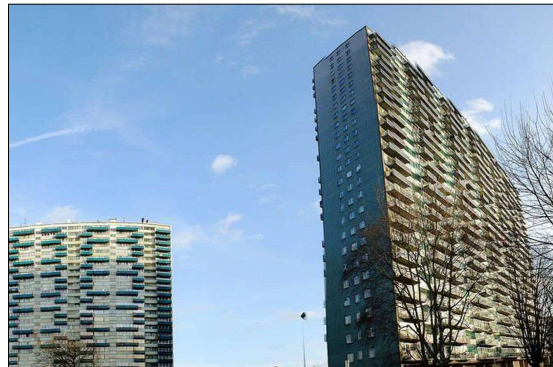
**DE BRANDWEERMAN (THE FIREFIGHTER)**

"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	NL	FR	EN	TR	ES	IT	DE	CH		KO	GR
2. A fire suffering from a lack of air	NL	FR	EN	TR	ES	IT	DE	CH		KO	GR
3. Wind Driven Fires	NL	FR	EN	TR	ES	IT	DE	CH	PT	KO	GR
4. Backdraft	NL	FR	EN	TR	ES	IT	DE	CH		KO	GR
5. Responding to a Chimney fire	NL	FR	EN	TR	ES	IT	DE	CH		KO	GR

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## Brussels and its 1000+ high-rise buildings



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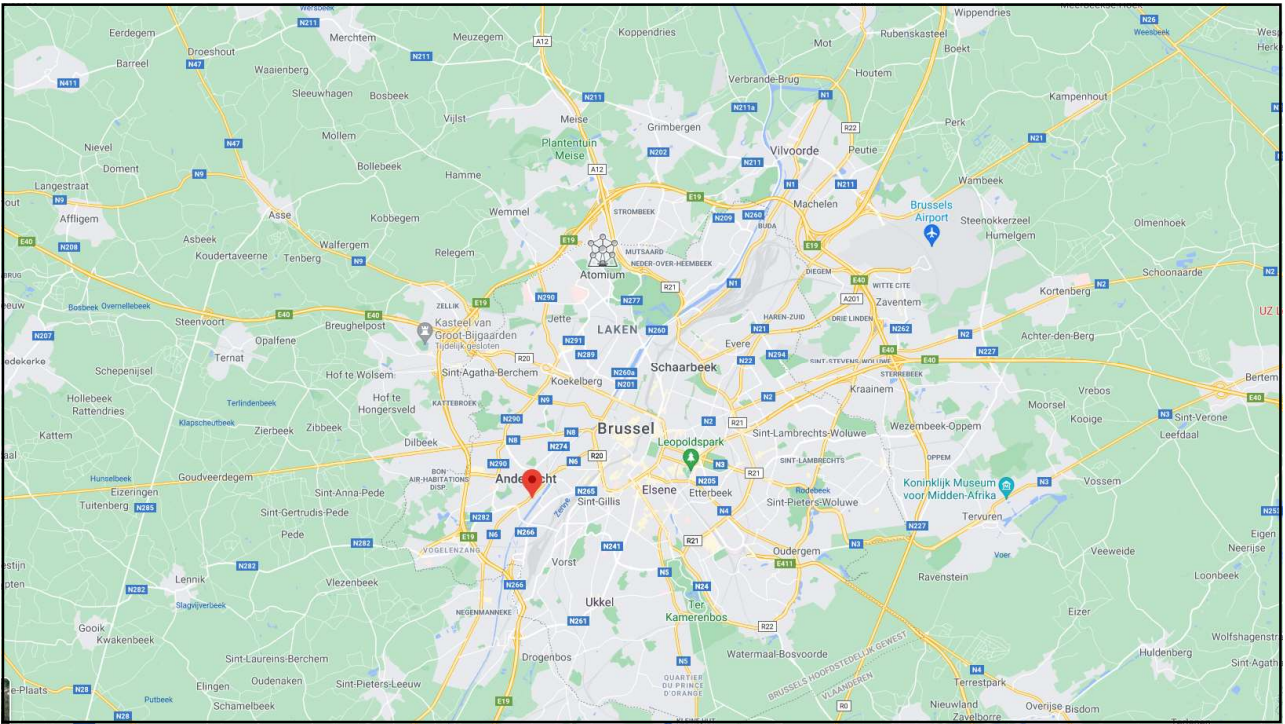
# Contents

- Location, Building & Attendance
- Tactics
- Problems
- Lessons learned

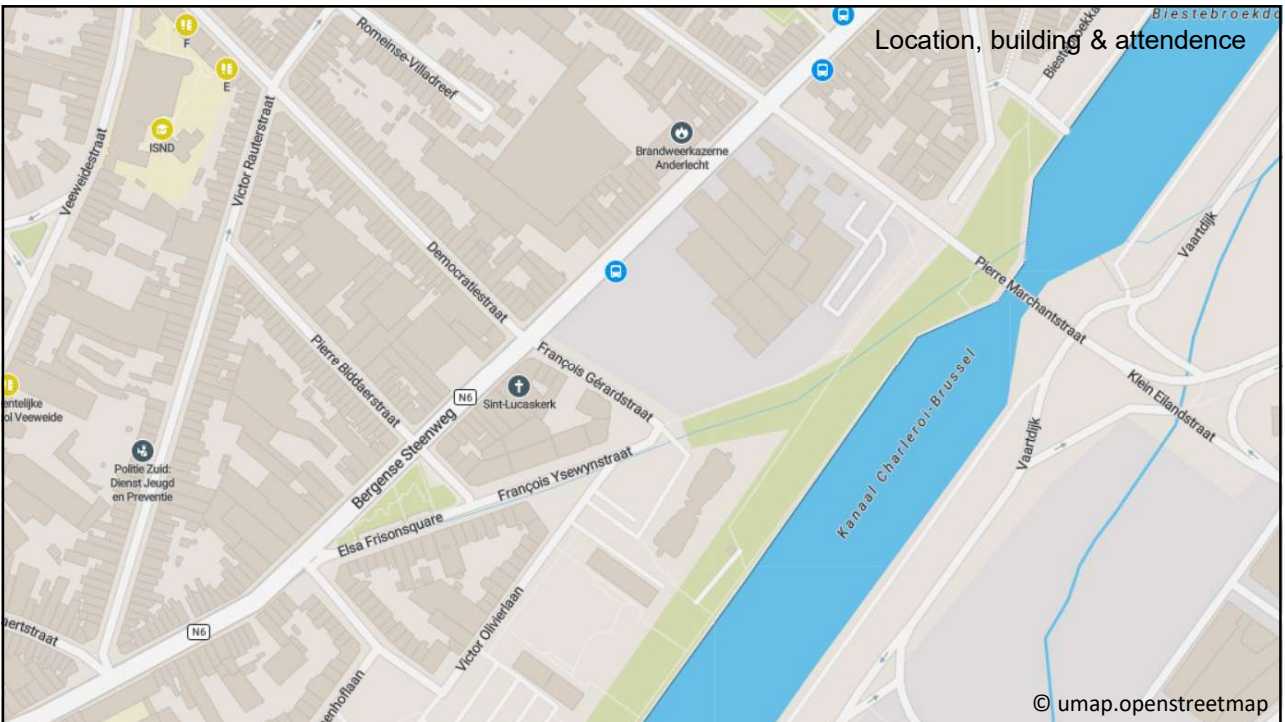


# Location, Building & Attendance

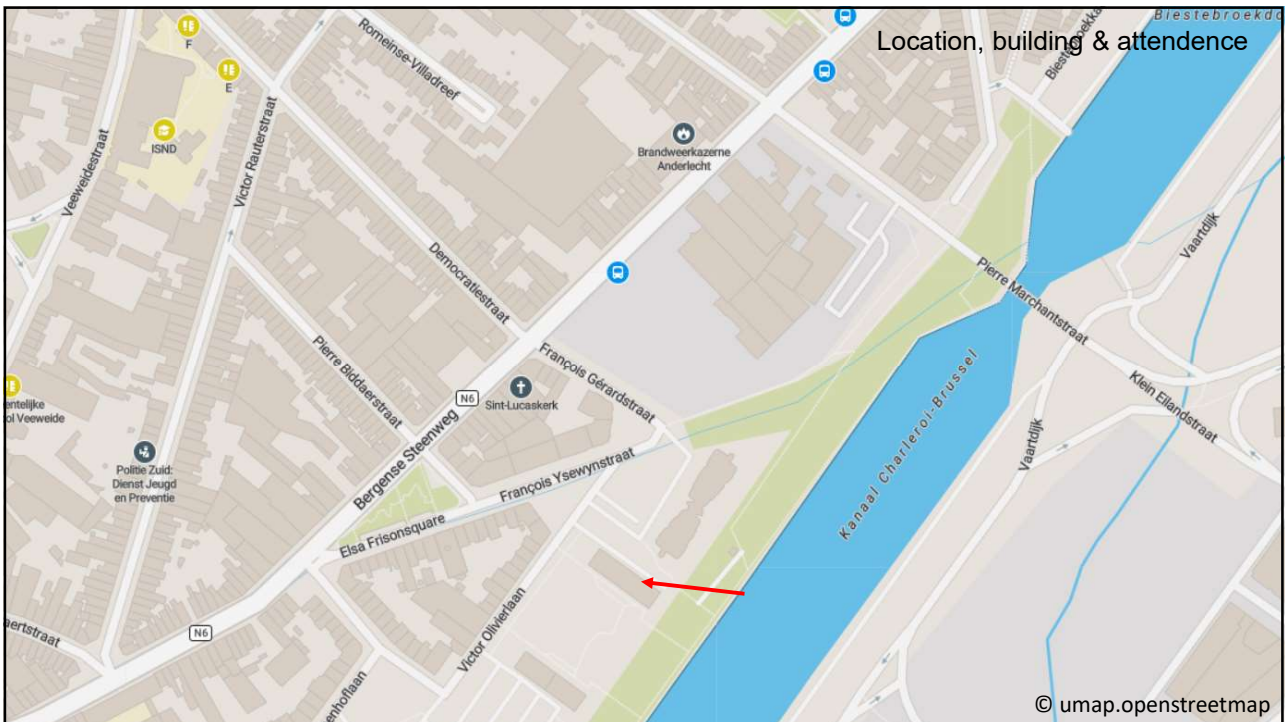




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Location, building & attendance

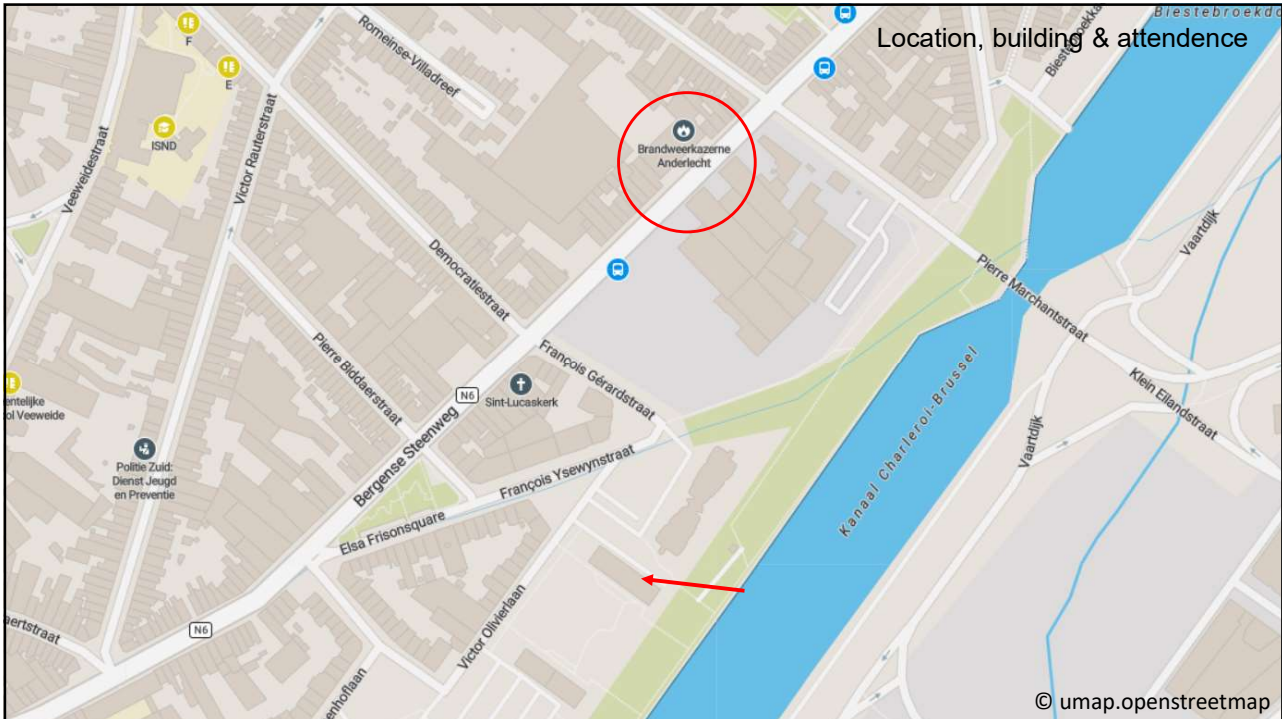
## Building

- Little fire prevention
- Only one staircase
- Spiral staircase
- No water riser
- Numbers in stairs

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Location, building & attendance

## Attendance

- **Anderlecht fire station**
  - One engine (6)
  - Ladder truck unavailable
- **Military hospital**
  - Medical crew
- **Headquarters**
  - Two engines (6)
  - Two ladder trucks
  - Two command cars
  - One ambulance



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Location, building & attendance

## 1<sup>st</sup> engine

- Fire 11<sup>th</sup>
- Window breaks
- Glass drops next to the firefighters → Risk at high-rise fires
- Fire becomes fully developed → Short time to flashover

→ Crew commander asks 3<sup>rd</sup> engine

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## Tactics

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## Tactics

1. Interior attack (Anderlecht 1)
2. Mobile riser + Interior attack
3. Evacuation
4. Search & rescue (HQ 1)
5. Transitional attack
6. Riser via ladder truck (Anderlecht 2)
7. Ventilation (HQ 2)

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## Interior attack



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- No ladder truck  
→ Interior attack
- Use the water riser

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Tactics

## Mobile Riser

- No water riser  
→ mobile riser



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Tactics

## Evacuation



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- Occupants flee through smoke.
- Firefighters need to assist.
- Firefighters go up, go down, work hard.

→ Interior attack is delayed

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## Search & Rescue

- HQ arrives
- 2<sup>nd</sup> engine: search & rescue
  - Stuck in spiral staircase.
  - They finish by doing the interior attack.

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## Interior attack

- Smoke on the fire floor
- Desorientation
- Crew thinks they are on n-1 but is actually on fire floor.

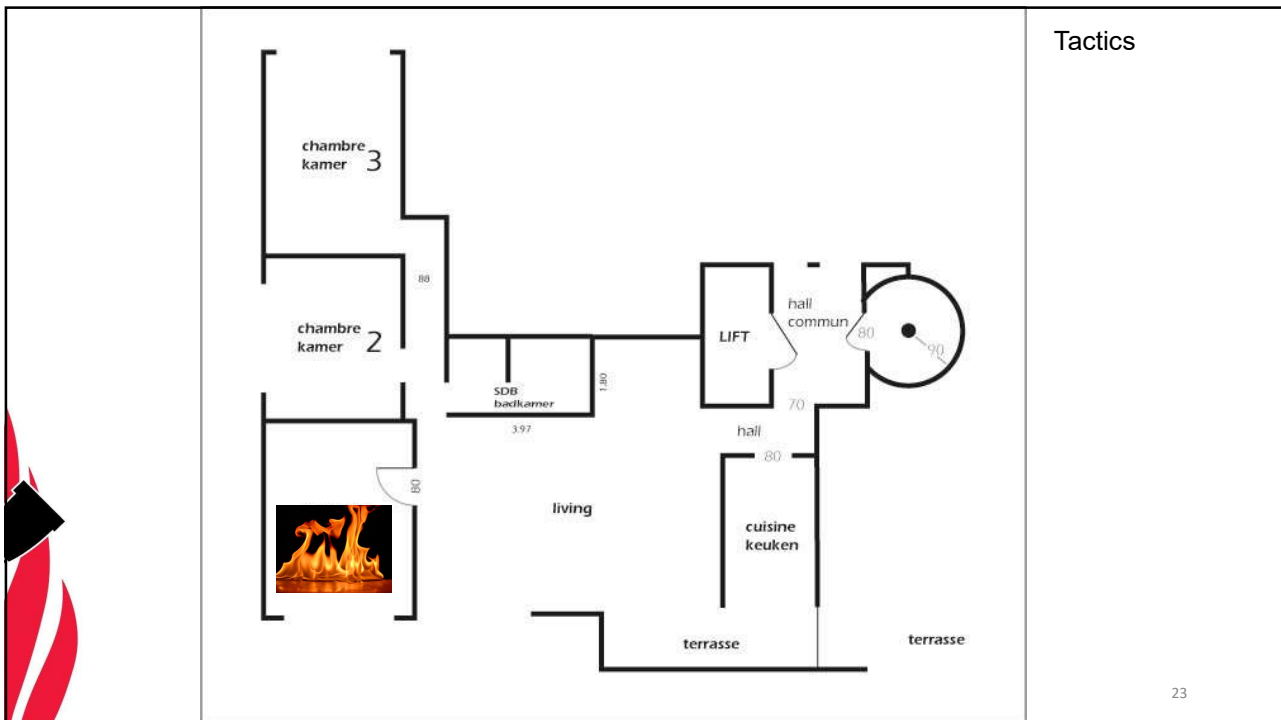
→ Delays!



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## Transitional attack

- Ladder truck performs exterior attack.
- ➔ 5 times !

Tactics

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Tactics

## Riser via ladder truck

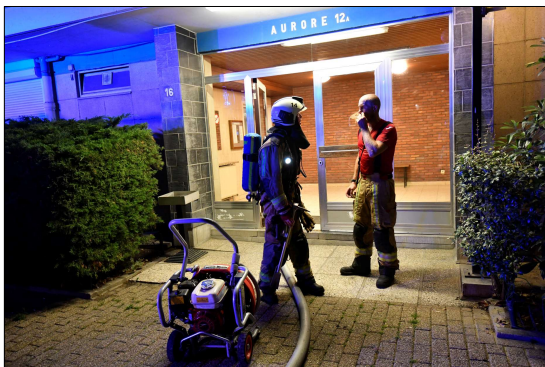
- 2<sup>nd</sup> possibility for water riser
- Via 2<sup>nd</sup> ladder truck via side Charlie
- Via 9<sup>th</sup> floor
- Was not used.

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Tactics

## Ventilation



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- 3<sup>rd</sup> engine: Ventilation
- Opening upstairs.
- Fan started
- ➔ Staircase smoke-free.

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Tactics

## Ventilation

- Smoke stopper
- Smoke stopper + exhaust + fan = very powerful combination
- Thank you, Michael Reick!

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## Problems

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## Problems

- Fully developed on 11<sup>th</sup>
- Old high-rise
  - A single staircase
  - Spiral stairs
  - No water riser
  - Numbers on floors not ok
- Ladder truck Anderlecht unavailable
- Reverse stack effect
- Several occupants in distress
- Too much communication

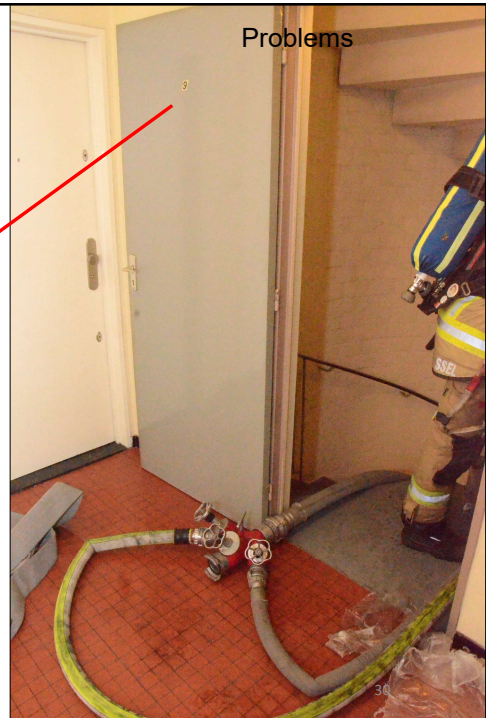
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## Numbers on floors



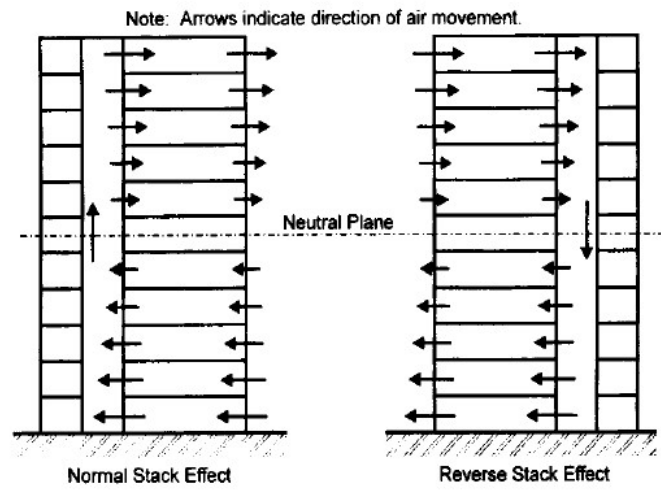
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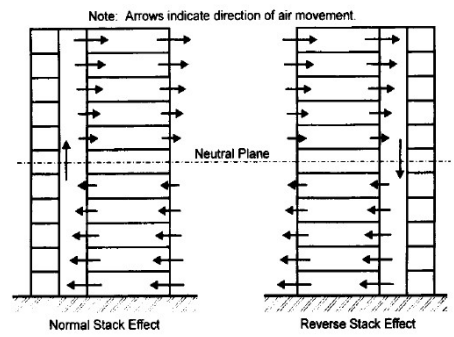
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# Reverse stack effect



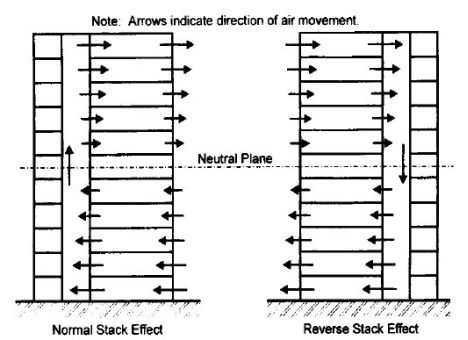
# Consequences of reverse stack effect?





## Consequences of reverse stack effect?

- Problem for evacuation
  - ➔ Less self-reliance
  - ➔ Assistance needed
- Smoke faster than occupants
- Smoke on ground floor



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## Consequences of reverse stack effect?

- Problem for attack
  - ➔ Reduced visibility
  - ➔ Desorientation
  - ➔ Delay
- SCBA usage from 6<sup>th</sup>
  - ➔ 5 floors below the fire

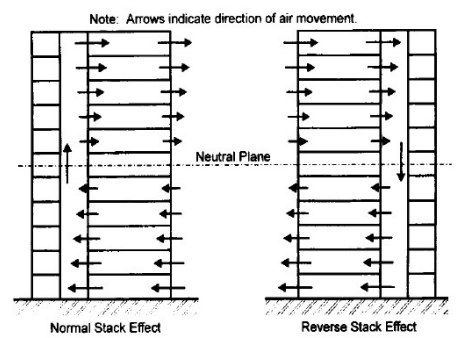


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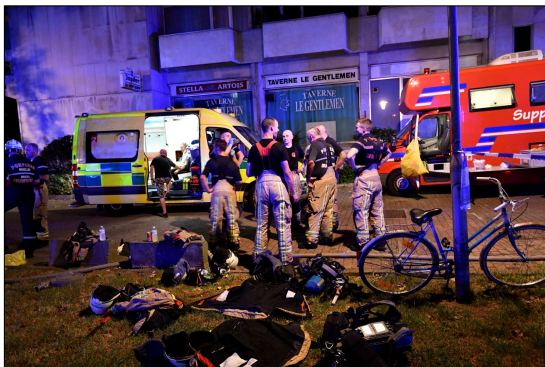
## What causes reverse stack effect?



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## What causes reverse stack effect?



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- Climate change
- Heat wave
- ➔ Higher probability for reverse stack effect
- ➔ Heat stress!

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# Lessons learned

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## Lessons learned

### Mobile riser

- In smoke-free part of the stairs
- Mobile riser is a separate assignment
- Interior attack is also an assignment
- Not the same crew



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Lessons learned

## Use TIC

- When the smoke comes from the hallway towards the stairs ...  
... then you are on the fire floor.



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Lessons learned

## ICS

- Once assignment complete: check in with chief officer
- Whiteboard & assistance for chief officer needed at bridgehead



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## Multiple improvements

- Transitional attack
- Mobile riser
- Teamwork



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## Summary

1. Mobile riser smoke-free
2. Usage TIC
3. ICS



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