

Tall buildings - Sealing our fate

The Unintended Consequences of Improved Airtightness Levels on the Operation of Smoke Control Pressurisation Systems.

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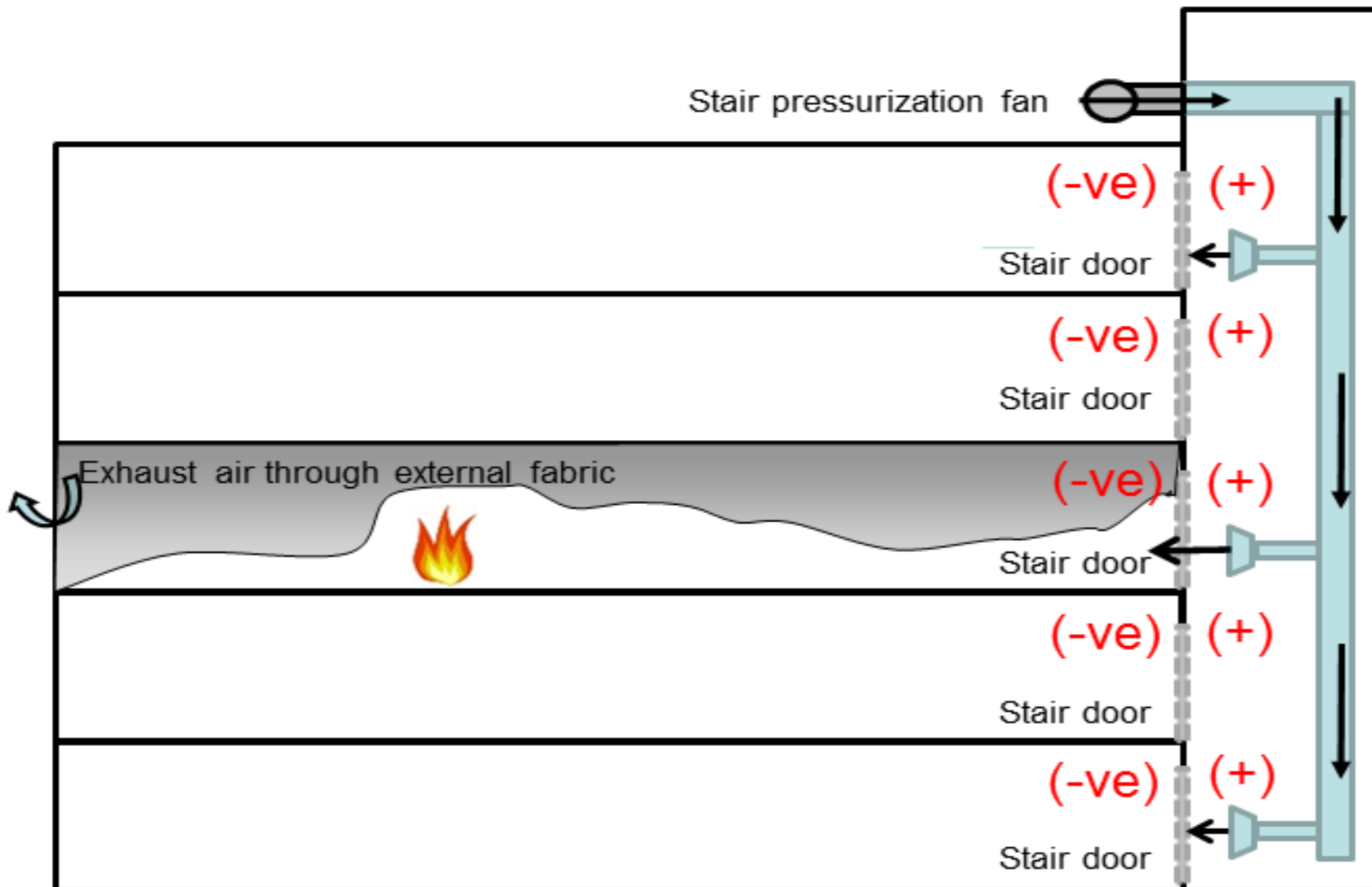
Content

- Background
- Aim of research
- Current findings
- Future research
- Conclusions

Background - 1

- Could the drive for 'greener' buildings be making them less safe in the event of fire
- As buildings get more air-tight and highly insulated, heat can't escape, this is especially true in the event of fire
- In tall buildings, escape stairs are kept free of smoke by pressurising the stairs and forcing any smoke away from the escape stair to outside the building

Background - 2

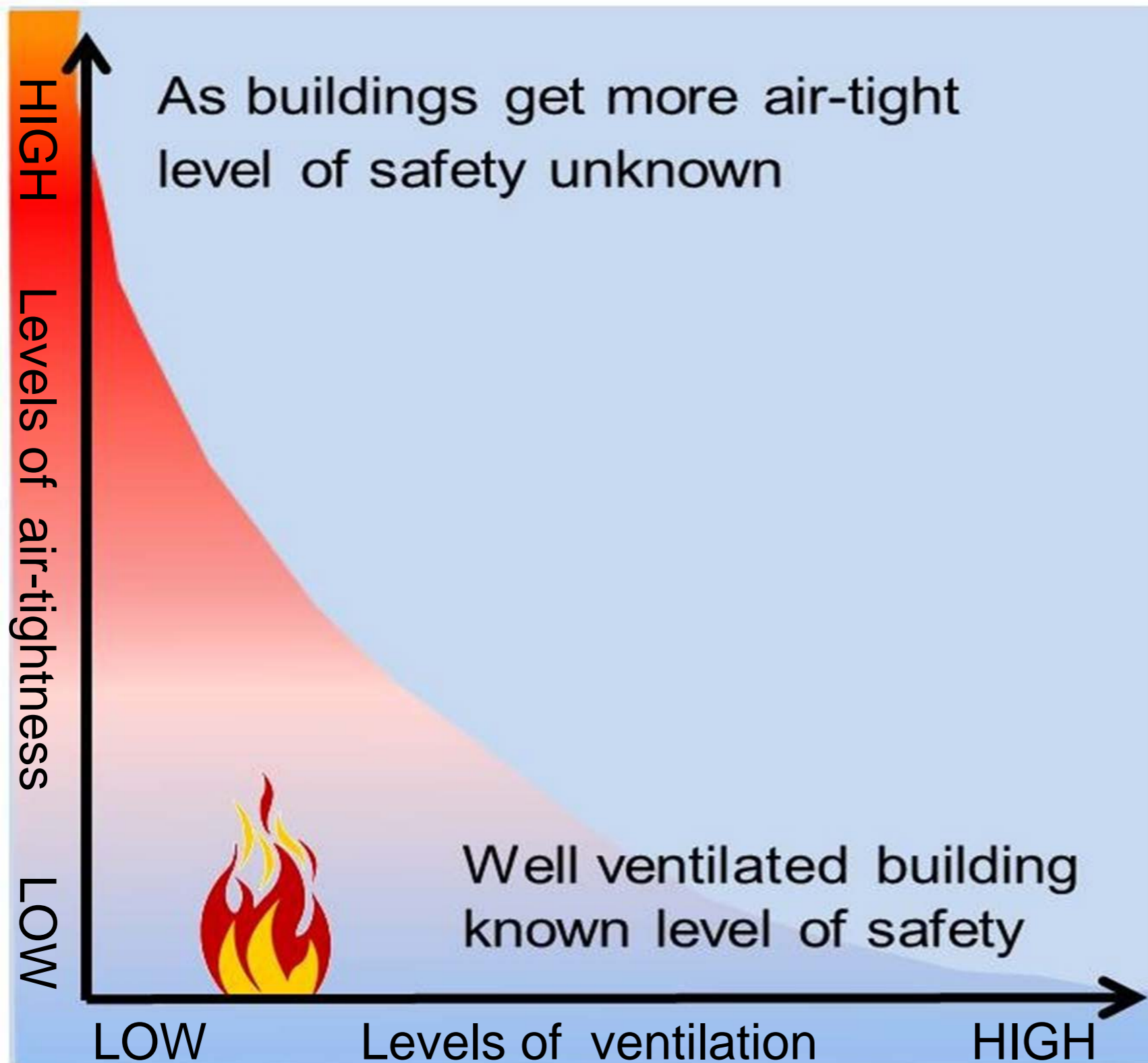


Using fans to pressurise escape routes
keeping them free of smoke

Aim of Research - 1

- Does greater air-tightness impacts on the effectiveness of pressurized smoke control systems
- Do designers take account of modern building construction when designing pressurization systems
- Are the design codes are out of date

Aim of Research - 2

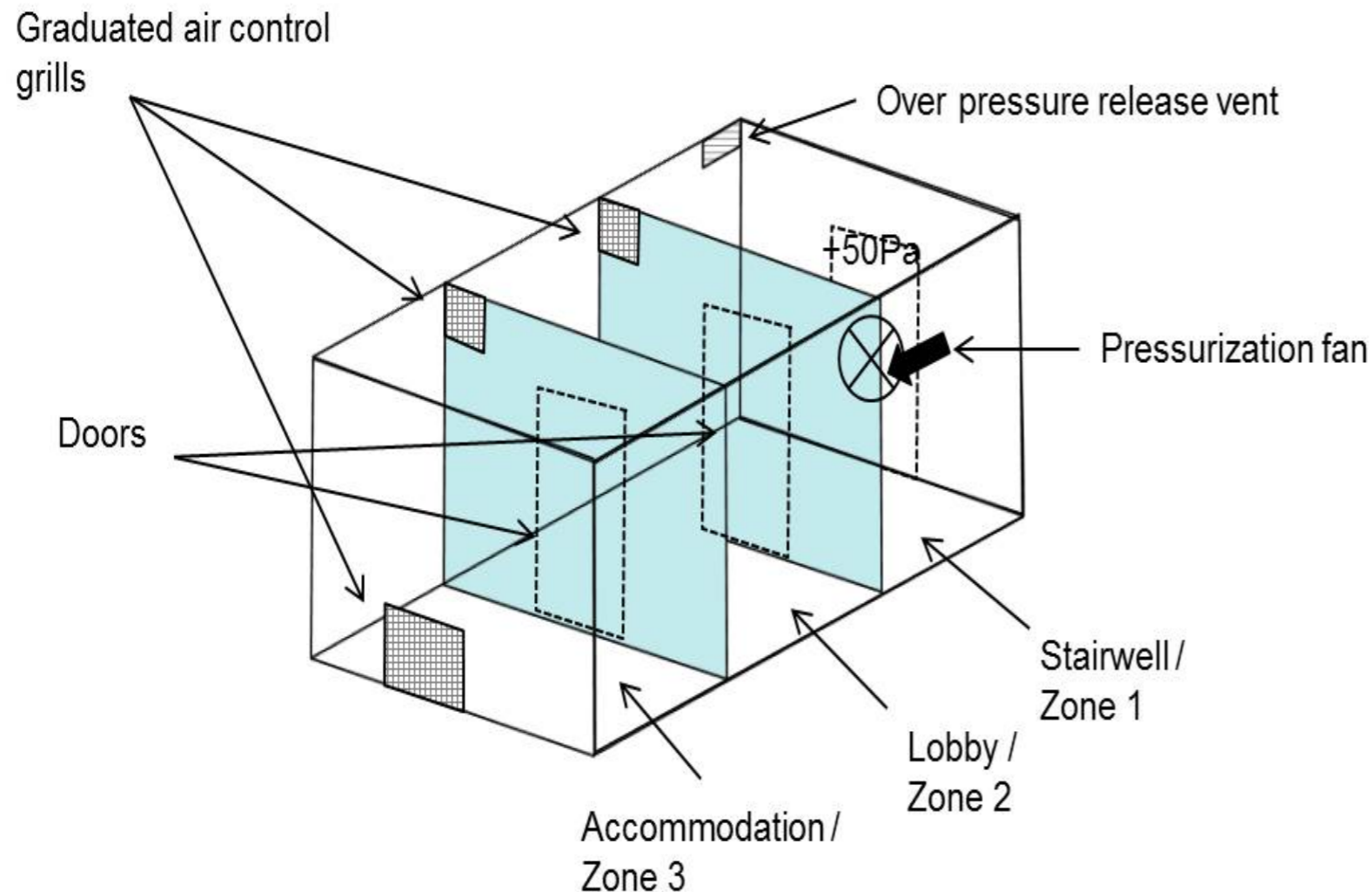


- Origins / limitations of design codes
- Evidence of airtightness impacting on pressurization systems
- Survey of design professionals
- On going maintenance / adaptability of systems

Current Findings

- Origins / limitations of design codes
- Evidence of airtightness impacting on pressurization systems
- Survey of design professionals
- On going maintenance / adaptability of systems

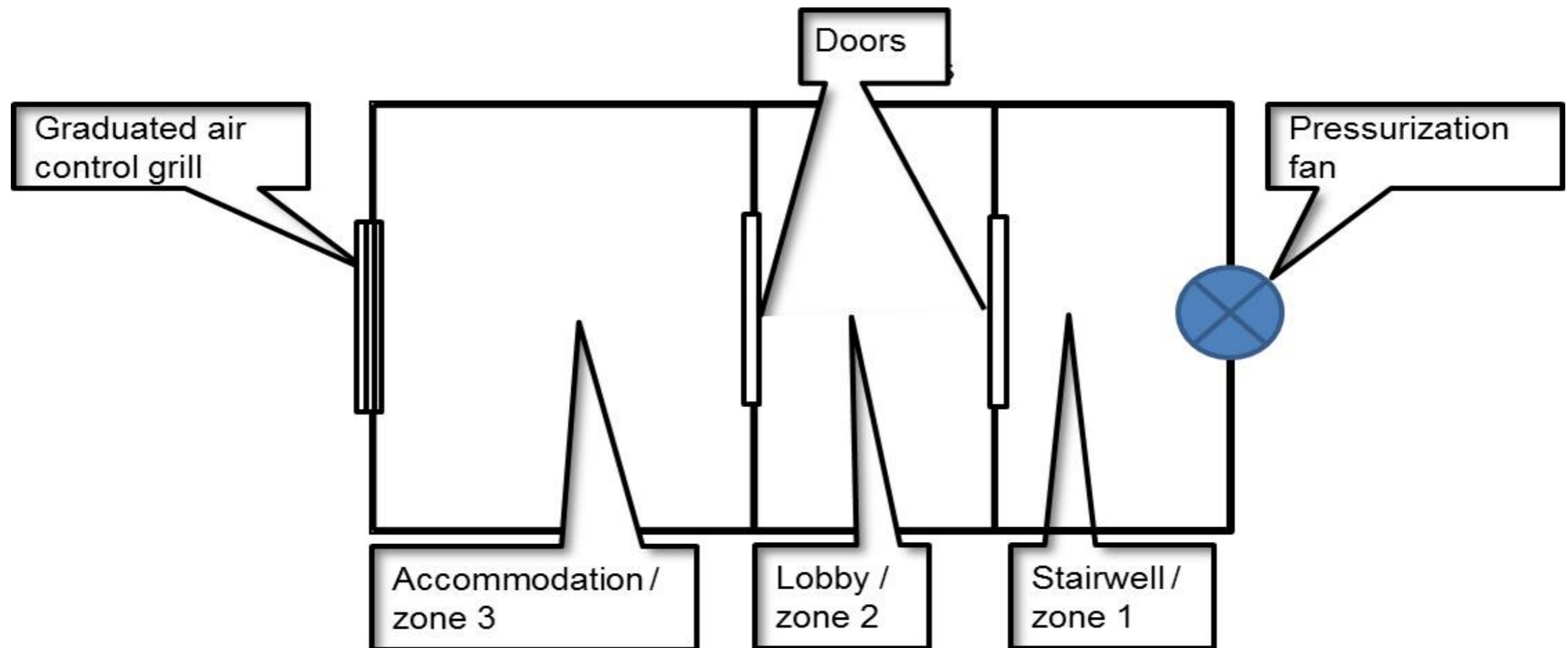
Proposed Research - 1



- A series of experiments will be conducted to monitor pressure and flow under different levels of air-tightness

The outcomes of these experiments will then be compared and contrasted with computer simulations

Proposed Research - 2



- A series of experiments will be conducted to monitor pressure and flow under different levels of air-tightness
- The outcomes of these experiments will then be compared and contrasted with computer simulations

Next Steps

- Complete research
- Disseminate findings
- Engaging with Legislators, Code Developers, Fire & Rescue Service, Industry and Authorities having Jurisdiction
- Work with industry on developing resolutions

Thank You



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