

CONFERENCE SUMMARY

June 25, 2024



Official Sponsor



Conference Experts:

- Doug Baldock, Char. Engineer – WSP
- Ashley Bateson, Head of Sustainability – Hoare Lea
- Eszter A Gulacsy, Technical Director – Mott MacDonald
- Peter Murray, Co-Founder – New London Architecture
- Roger Ridsdill Smith, Head of Structural Engineering – F+P
- Alec Vallintine, Construction MD – Canary Wharf Group
- David Fitzpatrick, SMAY Ventilation
- Radek Sikorski, SMAY Ventilation

Tall Buildings Conference 2024

Industry representatives delved into a range of key topics concerning skyscrapers' design, construction, and operation. Discussions focused on the future of high-rise construction, **highlighting its dynamic growth trajectory.**

Over the past decade, **an impressive 270 tall buildings have been completed, averaging 29 stories in height.** Notably, Tower Hamlets in London emerged as a leader with 71 tall buildings constructed, underscoring the sector's significant impact on shaping the future of our cities. Here are the main conference highlights worth emphasizing.



Inside The Talk

1. Modular Construction Solutions

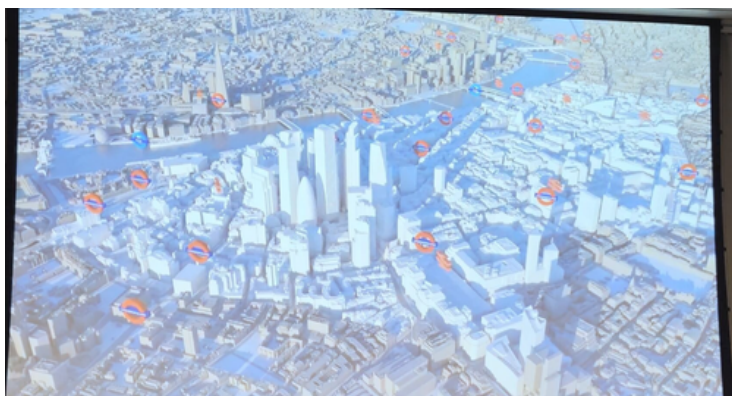
Presentations on modular building blocks highlighted a growing interest in this technology. Modular approaches not only accelerate construction processes but also enhance efficiency, reducing both time and costs.

2. Impact of Views and Urban Planning

The importance of spatial planning in preserving views of landmarks and key tourist spots was discussed. Special maps define maximum building heights to integrate into urban landscapes harmoniously, which is crucial for long-term city development.

3. Internal Technologies and Engineering

Using Smay's presentation as an example, the impact of the stack effect on internal installations was explored, emphasizing the optimal distribution of pressures in tall buildings. Additionally, Geberit addressed challenges in sewage installation that are critical to ensuring sustainable and efficient building operations.



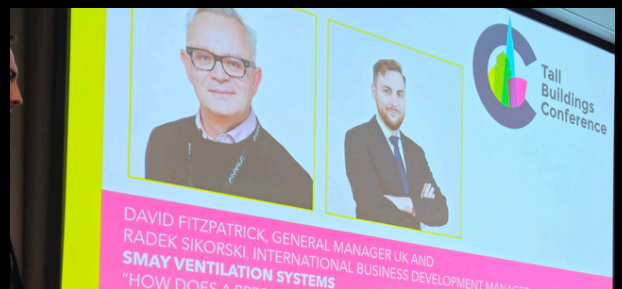
4. Sustainable Development

The conference affirmed that constructing skyscrapers can positively impact the environment by reducing carbon footprints compared to low-rise structures. Dense urban development promotes better access to public transportation, encouraging more eco-friendly commuting options.

5. Architectural and Structural Case Studies

Examples such as the modular College Road building and the residential tower One Park Drive showcased the diversity in architectural and structural approaches to modern residential buildings, providing an overview of emerging trends in design and construction.

Evidence-Based Design of Smoke Control



SMAY Team works with you to design and develop the systems you need, using CFD simulations, calculations, and case studies. We explain why these choices are suitable (or not) for your projects. Our goal is to help you make well-informed decisions efficiently, backed by research and data for a distinct advantage when communicating with stakeholders. If you have any questions, feel free to get in touch by email:

design@smay.eu

Pressurisation Systems in High-Rises: Ensuring Compliance with the Building Safety Act

1. Critical Importance of Pressurisation Systems:

- Pressurisation in high-rise buildings is crucial for safety. If not correctly designed, commissioned, and maintained, the building cannot be handed over for occupancy.
- These systems are essential for providing safe evacuation routes and optimal conditions for firefighters during emergencies.

2. Building Safety Act Impact:

- The Building Safety Act has significantly altered the way the industry operates, requiring more stringent compliance and changing design and development.
- The act aims to shift the industry's mindset towards more thorough and competent design and construction practices.
- Despite progress, there is a long way to go in embedding these practices into the actual installation and maintenance phases.

3. Industry-Wide Challenges:

- The distinction between high-risk buildings (above 18 metres) and tall buildings (over 50-60 metres) presents unique design challenges.
- Competency in smoke control requires skills, experience, and behaviour. The Building Safety Act mandates that responsible persons understand both the designs and the competency of the involved professionals.

4. Pressurisation Systems Efficiency

- Although pressurisation systems are widely used globally, their adoption in the UK has faced challenges and scrutiny.
- Overcoming these challenges involves addressing complex issues and not just relying on simplistic solutions.
- The experience in Poland, where the focus remained on developing and refining pressurisation systems, contrasts with the UK's shift to other solutions.

5. Technological Advancements:

- Advanced technologies in pressurisation systems include self-adapting units, self-testing mechanisms, and adaptive algorithms that handle large variations in air volume efficiently.
- These technologies have been tested and proven in independent laboratories, showing high reliability and efficiency.

6. Focus on the Stack Effect:

- The stack effect poses significant challenges in tall buildings, which were previously ignored in older standards.
- Addressing this issue requires a holistic approach and advanced solutions to ensure the effective operation of pressurisation systems in high-rise buildings.

Stand out with your knowledge.


Read the recommendations and take one of the suggested steps – watch a webinar.

The insights from the conference highlight the need for a paradigm shift in the industry towards more robust and competent design, construction, and maintenance practices, ensuring the safety and efficiency of high-rise buildings.

Recommendations

- **Early Involvement of Specialists:** Engage experts early in the design process to ensure high-quality outcomes and minimize technical issues.
- **Continuous Education:** Ongoing education and training are essential to keep up with evolving standards and technologies.
- **Holistic Design Approach:** Consider all potential challenges in system design for successful implementation.
- **Ensuring Competency:** Ensure all parties understand the systems they design and install for compliance and overall building safety.

The key to safe evacuation.
Pressure differential systems

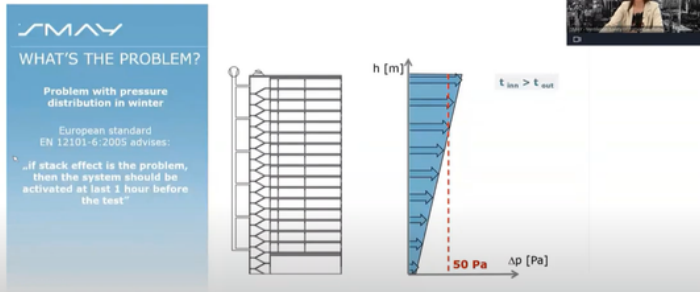


Watch the webinar
www.smay.pl/pds

50 min | VIDEO | highly rated by 92% of participants

What you will learn:

- Research Findings: Fundamentals of Fire Safety in Tall Buildings
- High-rise Smoke System Case Study: Design, Challenges and Operation



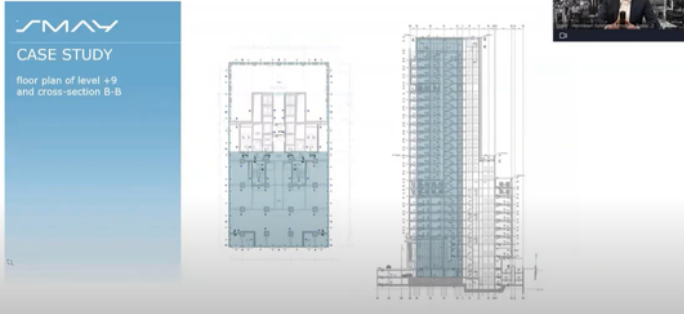

WHAT'S THE PROBLEM?

Problem with pressure distribution in winter

European standard EN 12101-6:2005 advises: „if stack effect is the problem, then the system should be activated at least 1 hour before the test“

$t_{in} > t_{out}$

50 Pa ΔP [Pa]



CASE STUDY

floor plan of level +9 and cross-section B-B

