

Webinar: Smart ventilation in non-residential buildings. How to assess? How to design? | 12 December 2023 (15:00-16:30 CET)

Questions from the audience

Questions for Klaas De Jonge (Ghent University, Belgium):

1. There are several reference sources mentioned - will the links to these be available? e.g. medical costs of different pollutants?
2. Have you included differences between filters performance in your economic indicator?

Questions for Douaa Al-Assaad (KU Leuven, Belgium):

1. Which Modelica library is used here for the building simulation?
2. Have you included differences between filters performance for the resilience evaluation?

Questions for Zakarya Kabbara (University of Antwerp, Belgium):

1. Does the optimized layout take into account the fire protection issues and sound level transfer?
2. In the optimized design the main ducts are no longer located in the corridors, which would require specific ceiling solutions in the rooms to hide the main ducts, leading to additional costs. Was this taken into account in the comparison?

Questions for Joris Van Herreweghe (Buildwise, Belgium):

1. You rapidly talked about electrostatic filters, have you tested the durability of electrostatic filters in terms of performance over a year? Have you also checked by-products?
2. Residential air handling units with heat recovery system typically do have filter holders in place. Are they not suitable for fine filters?
3. Do you have the cost and pressure drop growth rate for each filter setup? And do you use manufacturer recommended pressure drop for filter replacement?
4. Would you prefer single stage filtration or two stage or even more stage filtration? Should we consider cost or IAQ?
5. How are filters cleaned? I've seen too many cleaned with compressed air?
6. What's the most 'optimised' setup to reach SUP 2 with ODA 3?

Links to relevant papers:

1. Louis Cony & Jelle Laverge. "A Methodology to Assess Economical Impacts of Poor IAQ in Office Buildings from DALY and SBS Induced Costs." CLIMA 2022 Conference, May 20, 2022. <https://doi.org/10.34641/clima.2022.297>
2. Zakarya Kabbara, Sandy Jorens, Houssam Matbouli, Jitse Van Thillo & Ivan Verhaert. "Heuristic optimization for designing centralized air distribution systems in non-residential buildings." Energy and Buildings, Volume 292, 1 August 2023. <https://doi.org/10.1016/j.enbuild.2023.113161>

3. Zakarya Kabbara, Sandy Jorens, Ehsan Ahmadian & Ivan Verhaert. "Improving HVAC ductwork designs while considering fittings at an early stage." *Building and Environment*, Volume 237, 1 June 2023. <https://doi.org/10.1016/j.buildenv.2023.110272>
4. Joris Van Herreweghe, Samuel Caillou , Tom Haerinck , Fabrice Graindorge, Christophe Delmez & Patrick Van Huffel. "Real-life ventilation filter performance: final results of an in-depth study." AIVC 2022 Conference, October 5-6, 2022. <https://www.aivc.org/resource/real-life-ventilation-filter-performance-final-results-depth-study>