



INSIGHTS INTO HEALTHIER INDOOR ENVIRONMENTS: COMMERCIAL BUILDINGS

The COVID-19 pandemic has increased the focus on the health and safety of building occupants in commercial offices around the world. Now, as businesses seek to safely bring back workers and confidently return to a sense of normal, there are also significant opportunities to make healthy building updates that can have a long-term impact on human health and productivity – and ultimately, the bottom line.

THE NEED

While the COVID-19 pandemic has brought about increased urgency around health in commercial buildings, the renewed focus has also brought to light a long-standing need to address aging infrastructure, underperforming systems and air quality issues.



In a five-year building assessment survey and evaluation, **40% of the systems with design data available had measured outdoor airflows less than design.**¹



17% of outdoor air ventilation measurements were below the American Society of Heating, Refrigerating and Air-Conditioning Engineers (**ASHRAE**) minimum requirement of 34 m^3 .¹



44% of buildings reported not performing HVAC testing and balancing.²



20% of the buildings surveyed had higher ratios of indoor to outdoor particulate matter concentration.³



HEALTHYBUILDINGS



PREDICTIVE MAINTENANCE

- Remote connection through BMS manages IAQ and ventilation in line with best practices
- Make changes and fix issues remotely
- Optimize maintenance and operational costs
- 24 x 7 command center



HVAC EUROPEAN BLUEEDGE DIGITAL PORTAL

- Provide advanced remote analytics
- Optimize energy efficiency, equipment uptime, occupant comfort and operational productivity
- Actionable insights by different communication protocols
- Optimize autonomously or through a remote application



RETROFIT SPARE PART SOLUTIONS

INNOVATIVE TECHNOLOGIES

- M5 filters
- New filtering media technologies
- High filtration efficiency of PM2.5 particles

ADD-ON RETROFIT ALTERNATIVES

- AHU-UVC add-on kits
- Carbon surface & F7 filtering technology options
- Add-ons are easy to install in the universal frames of existing AHUs
- Effective against viruses, bacteria, small particles and VOCs

RANGE OF FILTRATION SOLUTIONS

- High-efficiency filtration solutions
- A large variety of air filters
- Solutions for our full product range (AHU, RTU, TFCU)
- More than 1300 references of air filters to cover all sizes / filtration needs

THE BOTTOM LINE

Providing the best possible environment for health and productivity has never been more important. With the right solutions and strategies in place, building owners and operators can safely welcome occupants back into buildings while creating healthy indoor environments that maximize health, cognitive and financial benefits for workers and businesses. To learn more about healthy building solutions and strategies for commercial buildings, [connect with a Carrier expert today](#).

¹ Building Assessment Survey and Evaluation (1998)

² Persily and Gorfain (2008)

³ Burton, Womble and McCarthy (1999); Macher, Tsai, Burton and Liu (2002)

⁴ Allen and Macomber (2020)

⁵ Fisk et al. (2009)

⁶ Milton (2000)

⁷ Park and Yoon (2011)

⁸ Seppanen, Fisk and Faulkner (2003); Seppanen et al. (2004)

⁹ Fisk and Rosenfeld (1997)

¹⁰ MacNaughton et al. (2015)