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fitwel

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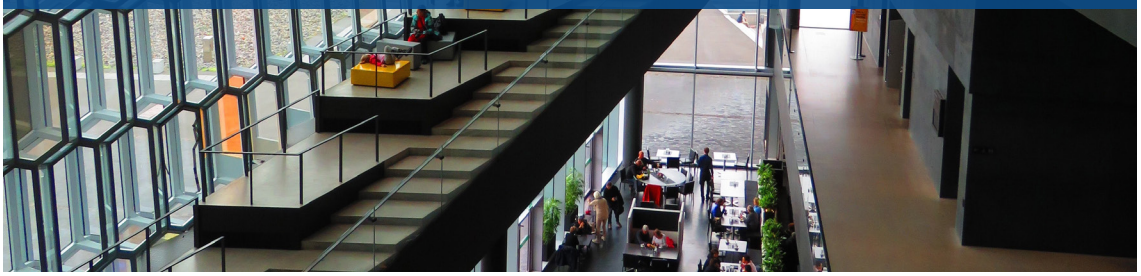
COVID-19 is at the top of everyone's minds these days. While individual efforts to prevent transmission are essential (wash your hands, everybody!), we have identified evidence-based design and operational strategies that specifically fight the transmission of viruses, including the coronavirus.



5 Ways to Optimize Buildings for COVID-19 Prevention

Coronavirus has taken over the 24-hour news cycle, with article after article updating us on newly identified cases, handwashing techniques, and why we should avoid touching our faces. While this information is vital to controlling the spread of COVID-19 and protecting the most vulnerable populations, one area that has been routinely underrecognized is the role that building design and operations can play in controlling the spread of this disease.

To start with the basics, what exactly is Coronavirus?

Coronavirus are a family of viruses that affect the respiratory tract and cause a range of illnesses—from a mild cold, to a serious case of pneumonia.[1] COVID-19, also referred to as coronavirus disease 2019, is a disease caused by a new viral strain of the coronavirus, not previously seen in humans. While health officials are still learning more about how the virus spreads and ways to control the outbreak, according to the US Centers for Disease Control and Prevention, COVID-19 can be spread in three main ways, with the first two suspected to be the most common:

1. **Person-to-person via direct contact.**
2. **Person-to-person via airborne respiratory droplets produced when an infected person coughs or sneezes.**
3. **Surface-to-person via contact with surfaces or objects that hold the virus, followed by an individual touching their own mouth, nose, or eyes.** [2]

It is believed that people are most contagious when they are symptomatic, though it is possible to spread the virus before symptoms are shown. [2] It is important to note that more than 80% of confirmed coronavirus cases are not severe and and do not require hospitalization. [3] Vulnerable populations, such as the elderly and those with underlying health conditions, are at greater risk for infection and severity of symptoms.[4]

[1] World Health Organization. (2020). Coronavirus. Retrieved from https://www.who.int/health-topics/coronavirus.

[2] Centers for Disease Control and Prevention. (2020). Coronavirus Disease 2019 (COVID-19). Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/prepare/transmission.html.

[3] World Health Organization (2020). Coronavirus disease 2019 (COVID-19): Situation report – 41. Retrieved from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200301-sitrep-41-covid-19.pdf.

[4] Centers for Disease Control and Prevention. (2020). Transcript - CDC Media Telebriefing: Update on COVID-19. Retrieved from https://www.cdc.gov/media/releases/2020/t0309-covid-19-update.html.

How can the real estate industry help reduce Coronavirus transmission?

As COVID-19 spreads, the connection between health and our environment becomes increasingly clear. While there is still much that is unknown about this virus, there are immediate preventative steps those working across the real estate industry can take to reduce the risk of infection:

1. **Increase ventilation:** While recirculating air has become the default in our buildings, ventilating with outdoor air is vital to diluting airborne contaminants and decreasing disease transmission rates. For buildings without heating and ventilation systems, another option is simply to open windows to let in more outdoor air. [5]
2. **Post educational handwashing signage:** Health officials recommend washing hands often with soap and water for at least 20 seconds. Despite being a relatively light-lift strategy in Fitwel, the healthy certification system that we operate, our July 2019 analysis found that only 40% of Fitwel Certified projects integrated handwashing signs into their spaces, demonstrating clear opportunity for improvement. [6]
3. **Strengthen cleaning protocols:** Adjusting cleaning protocols to meet the demands of the current situation is another valid approach. Increase cleaning frequency, replenish cleaning supplies ahead of time, and ensure that bathrooms stay stocked with hand soap, hand sanitizer, paper towels, and tissues. [7]
4. **Maintain optimal humidity:** Evidence suggests that viruses survive better in low-humidity environments. Buildings can increase humidity via heating and ventilation systems to maintain an optimal range of 40 to 60%, or by purchasing and installing portable humidifiers throughout. [8]
5. **Filter indoor air:** While changes to air filtration practices may take more time to implement, it is worth mentioning as this approach can help property managers, architects, and engineers plan for the future. Research suggests that filtration of recirculated air may be effective in reducing transmission of airborne infectious diseases. When operating at their full potential high-efficiency particulate air (HEPA) filters can remove 99.97% of particles that are 0·3 microns or larger. These filters remove dust, vapours, bacteria, and fungi, and also effectively capture viral particles spread by droplet nuclei [9]. Research suggests that under certain conditions, using recirculated air with HEPA filters reduces particulate concentration for indoor air similar to full outside air systems.[10]

It goes without saying that healthy buildings play a central role in creating a healthy world. In addition to everyday precautions taken by individuals, the building industry and employers have a vital role to play in creating safe environments for themselves and their employees.

COVID-19 has taken a major toll on global economies due to production halts, strained healthcare systems, supply chain disruptions, workplace and school closures, and event cancellations. Taking measures to build a healthy environment is prudent to both preventing illness and preventing loss of productivity.

[5] Smieszek, T., Lazzari, G, & Salathé, M. (2019). Assessing the dynamics and control of droplet- and aerosol-transmitted influenza using an indoor positioning system. Scientific Reports, 9, 2185.

[6] Naikoba, S. & Hayward, A. (2001). The effectiveness of interventions aimed at increasing handwashing in healthcare workers - a systematic review. Journal of Hospital Infection, 47(3), 173-180.

[7] Tuladhar, E, et al. (2012). Residual viral and bacterial contamination and disinfection. Applied and Environmental Microbiology, 78(21), 7769-7776.

[8] Reiman, J.M., et al. (2018). Humidity as a non-pharmaceutical intervention for influenza A. PLoS One, 13(9), e0204337

[9] Mangili, A., & Gendreau, M. A. (2005). Transmission of infectious diseases during commercial air travel. The Lancet, 365(9463), 989-996.

[10] Aliabadi, A. A., et al. (2011). Preventing Airborne Disease Transmission: Review of Methods for Ventilation Design in Health Care Facilities. Advances in Preventive Medicine, 2011, 1-21.

Additional Resources

U.S. CDC: Interim Guidance for Businesses and Employers to Plan and Respond to Coronavirus Disease 2019 →

World Health Organization: Getting Your Workplace Ready for COVID-19 →

BOMA Canada: Coronavirus Resources →

Global Wellness Institute: PositivelyWell →

New York Times: Your Building Can Make You Sick or Keep You Well →

Financial Times: How Healthy Buildings Can Help Us Fight Coronavirus →