



## **Ventilation and air quality: Post-pandemic considerations for property owners - by Robert Koonin and Cynthia Thomas**

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8,409,600. This is the number of breaths that the average employee takes in a single year. There is likely no other factor more critical in determining a person's productivity and health than the air they breathe. While building ventilation has normally been relegated to a mere afterthought behind many more enticing amenities of the workplace, the COVID-19 pandemic has thrust the importance of air quality to the forefront of tenant considerations.

At the onset of the pandemic, real estate lawyers around the U.S. attempted to provide guidance to landlords and tenants alike, in an effort to predict what lease provisions would be most critical over the coming months. A myriad of articles were prepared discussing force majeure, go-dark provisions, continuous operation and janitorial/cleaning services. Unfortunately, air quality and ensuring that buildings have sufficient outside air flow has lagged behind many of the initial concerns raised by the pandemic. As employees return to offices around the country, commercial real estate owners can expect to see an increased focus on ensuring that a building's ventilation and filtration system minimize the risk of airborne transmission of infectious diseases.

According to Joseph Allen, professor at the Harvard T. H. Chan School of Public Health, ventilation is "an invisible variable that determines whether people can think well at their desk and whether coughs, colds, and other respiratory ills will circulate within a company."<sup>1</sup> It has been shown that buildings with lower ventilation rates not only make an indoor environment uncomfortable to work in, but increased pollutants cause an array of harms.<sup>2</sup> In addition to actually spreading viruses like COVID-19 and the flu, environments that are poorly ventilated promote symptoms such as headache, fatigue, shortness of breath, sinus congestion, cough, sneezing, eye, nose, throat, and skin irritation, dizziness, and nausea.<sup>3</sup> In fact, it is estimated that the flu alone costs U.S. businesses over \$10 billion every year.<sup>4</sup>

### Guidance for Landlords

Experts have learned a great deal over the past eighteen months, and commercial property owners should expect their building's existing ventilation and air filtration systems to be subject to particular scrutiny by prospective tenants. Landlords should consult with HVAC professional to ensure that the HVAC system and related equipment is functioning properly.<sup>5</sup> The EPA, ASHRAE and CDC all recommend "upgrading air filters to the highest efficiency possible that is compatible with the system and checking the filter fit to minimize filter air bypass." ASHRAE recommends using a combination of air cleaners and filters that achieve a level of performance equal or better than MERV-13 filters for

re-circulated air.<sup>6</sup> In-room units are also a viable option to clean the air and remove virus particles where HVAC filters cannot be updated.

Landlords should also pay particularly close attention to air change rates or the “airflow in volume units per hour divided by the building space volume in identical volume units (normally expressed in air changes per hour [ACH or ACPH]).”<sup>7</sup> Generally, the air change rate refers to the number of times the air volume in a building or room is replaced with outdoor or filtered air. While the recommended air change rates vary depending on the particular space and how the space is being utilized, 6 to 12 ACH is a safe target.<sup>8</sup>

According to the CDC, implementing multiple tools to improve ventilation like those set forth below can reduce the risk of exposure to viruses and reduce the spread of diseases.<sup>9</sup> In particular, landlords should consider:

- Increasing the introduction of outdoor air;
- Installing fans to increase the effectiveness of open windows (be sure to consult a professional to help determine placement, as sometimes, incorrect circulation patterns can create more harm than good);
- Increasing total airflow by adjusting and rebalancing HVAC systems; and
- Installing HEPA fan/filtration systems to enhance air cleaning when outdoor air cannot be adequately provided.

As once shuttered office doors swing open and employees return to the hustle and bustle of office life, improving indoor air quality will be a point of focus for many tenants. Knowing that better indoor air leads to a healthier and more productive workforce, landlords should remain vigilant in their efforts to maintain, and in some cases upgrade, their HVAC systems to ensure that they are well equipped to meet market demands.

Robert Koonin is a partner and the vice-chair of the Real Estate Practice Group at Garfunkel Wild, P.C., and Cynthia Thomas is an associate in the Real Estate and Finance Practice Group at Garfunkel Wild, P.C., Great Neck, N.Y.

1 Joseph Allen, Employers Have Been Offering the Wrong Office Amenities Work Places Need Fresh Air, Not Foosball Tables and Coffee Bars <https://www.theatlantic.com/ideas/archive/2021/10/fresh-air-cool-new-office-amenity/620288/> (last visited Oct. 3, 2021).

2 M. J. Mendell & Q. Lei-Gomez et al. Risk Factors in Heating, Ventilating, and Air-Conditioning Systems for Occupant Symptoms in US Office Buildings: The US EPA BASE Study. 18 Indoor Air 301–16 (August 2008).

3 Daisey, J. M., W. J. Angell, & M. G. Apte., Indoor Air Quality, Ventilation and Health Symptoms in Schools: An Analysis of Existing Information.” 13 Indoor Air 53-64 (March 2003).

4 2019-2020 Flu Season Could Cost Employers \$13B

<https://www.challengergray.com/blog/2019-2020-flu-season-could-cost-employers-13b/> (updated Feb. 11, 2020).

5 CDC, Ventilation in Buildings, Updated June 2, 2021; <https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html>

6 Core Recommendations for Reducing Airborne Infectious Aerosol Exposure <https://www.ashrae.org/file%20library/technical%20resources/covid-19/core-recommendations-for-reducing-airborne-infectious-aerosol-exposure.pdf> (last updated Oct. 19, 2021).

7 Frequently Asked Question, <https://www.ashrae.org/technical-resources/frequently-asked-questions-faq>

8 Covid 19 Winter Indoor Guidance for Public and Private Sectors <https://www.healthvermont.gov/sites/default/files/documents/pdf/COVID19-Winter-Indoor-Air-Guidance.pdf> (revised Dec. 31, 2020).

9 Ventilation in Buildings <https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html> (last updated Jun. 2, 2021).