



Active IAQ Article - BEIC

The COVID-19 pandemic has permanently changed how tenants, managers and owners think about and manage buildings. Additionally, organizations like [ASHRAE \(American Society of Heating, Refrigerating and Air-Conditioning Engineers\)](#) are revising the standards and regulations of acceptable air quality, forcing us to re-evaluate existing monitoring practices. Building owners and operators need to adhere to the increasing standards to provide a safe indoor environment by minimizing the transmission risk within indoor spaces in order to retain and attract new tenants with safe working and living spaces. With more at stake than ever before, it is crucial that building owners and operators rethink their current air quality monitoring methods as ongoing re-occupancy occurs and beyond. Air quality directly affects the health of those gathering indoors out of necessity and building owners, in relation to maintaining stable occupancy levels. Enhancing monitoring capabilities is critical to manage physical areas of potential concern as well as increase the perception of safety and reassurance on a daily basis.

The Lasting Effects of COVID-19

High indoor air quality standards have always been a pillar of successful building management and operation. As the COVID-19 pandemic winds its way to an eventual conclusion, all building users will be forced to reassess their work and public space needs, with indoor air quality now at the top of the list. As Canadians spend up to 90% of their time indoors, it is just as imperative to discuss indoor air quality as we do the weather.

Historically, the green building and sustainability experts focused on the importance of indoor air quality and its direct effects on health and well-being, workplace satisfaction and productivity. The need to embrace these principles in all buildings became apparent in the pandemic, as buildings themselves may contribute to transmission risk. Ventilation and filtration systems are now viewed as an essential strategy to improve occupant health and aid in limiting viruses such as COVID-19 and other particle matter, resulting in ideal occupancy conditions.

The Importance of Risk-Assessment

In order to safely manage and operate a building, risk assessment procedures and a structured model are necessary steps in the ongoing management of workplaces and the long-term vision of building occupancy and operations. As a result of risk assessment, inadequate ventilation in

indoor environments can be identified and remedied in order to reduce the risk of airborne transmission of viruses. Transmitted primarily via respiratory droplets during coughs, sneezes and close interactions between individuals, remnants of different airborne diseases can stay suspended in the air and over time, become concentrated and increase risk of infection. As a secondary concern, the virus is spread by contact with contaminated surfaces.

It is imperative that building owners and operators develop a meaningful verification program related to risk mitigation to ensure primary management controls are in place and effective. Changing the standards is a long-term commitment that will benefit building owners and operators for years to come. It is through verification programs that building managers can provide accurate and consistent monitoring to support the management controls in addition to safety reassurance for occupants. Integrating an effective monitoring and management system would be beneficial in maintaining standards and levels for a wide range of contaminants.

Long-Term Considerations & Solutions

Given the amount of time individuals spend indoors, it is imperative to evaluate how indoor environments will be monitored and managed moving forward. To ensure indoor air quality is at full potential, indoor environments will permanently require an increased and consistent amount of tracking. To ensure tenant safety and positive building management, building owners must incorporate monitoring to manage ventilation rates, humidity and carbon dioxide levels, as well as address and mitigate airborne transmission. The integration of real-time indoor air quality metrics will enable efficiency and ensure compliance with new standards. In all, providing a positive occupant experience leading to maximized tenant retention.



Because of this newfound awareness, and standards when it comes to filtration effectiveness, new technologies and solutions are being introduced. While there are traditional ways of measuring indoor air quality, new cost-effective and agile solutions are proving to have the potential to do what those older solutions can, and much more. Wireless, real-time solutions, such as [Active IAQ](#), utilize low power LoRaWAN® technology which enables ultra-long sensor life while offering cost-efficient wireless connectivity. Management is done remotely; data is communicated in real-time and is easily accessible via online portal. Custom notifications (email and SMS) can also be set so that building stakeholders can proactively monitor their indoor spaces and respond instantaneously to any situation. Additionally, the lightweight sensors can

be quickly and easily re-deployed, or additional sensors added in minutes to ensure proper coverage and monitoring is maintained.

Transmission of viruses is not the only potential issue with indoor air quality. It is also impacted by climate-driven events. Recent examples, such as the wildfire smoke disasters in western Canada, demonstrate how the benefits of remote wireless, real-time monitoring can provide through data-driven insights into occupant risk, and the effectiveness of mitigation strategies.



Higher Quality Indoor Environments: Now and in the Future

While indoor air quality monitoring has been part of the building management process in the past, it has never had the spotlight on it that it does now, so when investigating any technology, take into consideration key variables and align them with your objectives. Some solutions claim to track COVID-19 itself, but does that include all variants? What happens when other types of viruses or other contaminants are having an effect? Can the solution be moved or adjusted to account for specific areas of focus? Is data collected hourly, daily or weekly? Does that allow enough time to react to urgent situations?

It is evident that ensuring building occupants are safe and healthy begins with real-time and continuous monitoring of our indoor environments. With recent improvements in wireless sensor technology and cloud analytics, an exceptional system is affordable and accessible to any building owner.

With a long-term approach in mind, the need for building owners and operators to re-strategize traditional approaches to building monitoring and management is crucial. As the standards and needs of indoor air quality have permanently changed, building monitoring now requires real-time capabilities to not only provide peace of mind for the occupants to ensure tenant retention, but to also improve efficiencies and manage indoor spaces in a better way overall.

Interested in learning more about next-generation indoor air quality monitoring and its benefits? Visit [eleven-x](#) for more details.