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Indoor Air Quality after COVID

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Abstract

The COVID-19 pandemic has not only disrupted life around the world and caused millions of deaths. It has also prompted a deep reassessment of what constitutes acceptable indoor air quality. Efforts to implement engineering controls to make buildings safer have in many cases proved costly, energy intensive, and difficult to validate. In short, buildings designed in the conventional way have not proved very resilient. A major factor contributing to this experience is the current status of design standards, which in general do not address resilience with respect to both epidemic disease outbreaks and natural disasters such as wildfires. Equally important is the lack of explicit consideration of airborne infection risk in standards. While ventilation and filtration have demonstrated effectiveness for airborne infection control, understanding about other promising technologies that could help to limit adverse energy use impacts while achieving lower risk. Indeed, it is also widely acknowledged that minimum standards significantly underperform in terms of providing a generally healthy and productive indoor environment. Many strongly believe that the definition of acceptable indoor air quality needs to change to address both wellness and resilience. This presentation reviews the current status of indoor air quality, how that paradigm may shift in the future, and how that can be done sustainably.

Keywords: IAQ, standards, wellness, resilience