CityLab
Housing

The Movement to Keep Buildings From Making You Sick

Environmental health expert Joseph Allen, director of the Healthy Buildings program at Harvard, explains why people should demand more from their schools and offices.

The view from 425 Park Avenue, the first commercial building in New York to pursue WELL healthy building certification. *Photographer: Jeenah Moon/Bloomberg*

By Linda Poon
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In October, the White House held its first-ever summit on indoor air quality, encouraging businesses, organizations and especially schools to improve their buildings' ventilation and filtration systems. The

summit, which came in response to the pandemic, underscored that buildings are a first line of defense against infectious diseases and a key to public health.

"Healthy buildings are the new minimum," says Joseph Allen, an expert on indoor environmental quality issues at Harvard University, who also spoke at the summit. "The White House is signaling that they're critical to Covid and beyond."

Earlier this month, he and coauthor John Macomber released an updated version of their 2020 book *Healthy Buildings*, a sort of manual detailing the science of how indoor spaces can make us ill, with insights from Allen's early work as a forensic investigator of "sick buildings." In the worst cases, like at a hospital experiencing an outbreak of Legionnaires' disease, poor ventilation can even kill.

The book also outlines the economic, social and health benefits to upgrading buildings, particularly in the era of climate change and rising threats of epidemics.

"We make the case that healthy buildings are good as tools for worker recruitment and retention," Allen says. "But we also make the simple case that healthy buildings are just good business." In fact, studies have shown that better-ventilated offices or schools can improve people's cognitive abilities and productivity, and can curb absenteeism.

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CityLab spoke with Allen about how the healthy building movement has progressed since the start of the pandemic, and what more needs to be done. The interview has been lightly edited for clarity.

In what type of buildings have you seen the biggest investments in indoor air quality since the start of the pandemic? Where is it still lacking?

The finance and technology sectors and commercial real estate have made significant advancements here. Where we have a long way to go is in schools and affordable housing, where the potential gains are the biggest because of decades of neglect and disparities across race, ethnicity and income.

We saw hundreds of schools close in the Northeast from May through September this year, so there are things that can be done today, as you make longer-term plans for improvements. We've been putting out guidance for schools since the beginning of the pandemic, showing how you use portable air cleaning technology, and laying out roadmaps for longer-term investment in better mechanical systems, better air conditioning.

It's not hard. It's not expensive. We know what to do. Significant money is available through the stimulus related to Covid – but much of it's still sitting on the sidelines.

What's the role of government in helping schools break through the barriers to getting fixed, and the role of city government in particular?

I think the key role for the government at all levels is, first, to raise awareness. What has to happen next is that the federal, state, local governments and non-governmental standard-setting agencies like ASHRAE [the American Society of Heating, Refrigerating and Air-Conditioning Engineers] have to set health-based standards for our buildings. This hasn't been the case for decades.

The only way we're going to have this healthy buildings movement reach everyone and address these longstanding disparities is for it to be codified through standards and codes. Otherwise, it's just going to be the well-resourced organizations and schools that improve their buildings.

Currently, there are at least two building certification systems focused on health: WELL, created in 2014 by the International Well Building Institute, and Fitwel, a joint initiative between the US Centers for Disease Control and Prevention and the General Services Administration, which oversees government buildings. Taking a cue from the green building movement and the widely adopted LEED standards, why do they matter?

I think the green building movement did an excellent job of raising awareness around the importance of energy efficiency in buildings. And now a lot of these state-level codes go beyond the green building certifications.

We're at the early stages of healthy building certifications, and there's an opportunity to continue to show the value proposition to building owners and developers, that there's a business benefit to making these improvements and communicating it.

The most important thing is that any certification has to be based on the latest science. They have to be flexible and incorporate new science as it becomes available. They have to be dynamic and be able to incorporate real-time indoor air quality monitoring, so it's not a once-in-time stamp on the building that will no longer be valid a year or two after certification.

I think there's an important warning for businesses that when it comes to health, there's no cutting corners. Because if you stamp your building as healthy regardless of the certification or the process,

and it's not based on the best science, there's a potential liability problem.

In fact, you argue that greening buildings and making them healthier actually go hand-in-hand, as opposed to causing conflicting priorities, right?

There's this false notion that a healthy building is at odds with energy efficiency, but I don't think they're in conflict at all. It's unacceptable to have an energy-efficient building that makes people sick, just as it's unacceptable to have a healthy building that ignores the role that buildings play in the climate crisis.

What people don't realize is that outdoor air pollution penetrates indoors, and because we spend so much time indoors, the majority of your exposure to outdoor air pollution occurs indoors. Think about that for a minute.

And we actually have existing technologies that allow us to conserve energy while improving the air quality. We need to upgrade our filters to a higher standard, and these can be deployed without an energy penalty. We can have higher ventilation rates, and instead of releasing that treated air-conditioned air out into the environment, we can recapture some of that with energy recovery ventilation. We can use demand control ventilation, so instead of dumping air everywhere in a building – even where people aren't – we're using these smart technologies and real-time indoor air quality sensors to deliver air when and where it's needed without wasting energy.

It's easy to see the future as bleak: The air is getting worse in many places, especially those experiencing wildfires. More disease outbreaks are on the way. Is there reason to be optimistic?

We can guarantee that there'll be another pandemic, hopefully not soon. What I'm optimistic about is that it won't take so long to recognize that buildings should be at the forefront of our response to respiratory infectious disease, and that the way we operate in our buildings determines people's health.

You have a media landscape that's hyper-focused on infectious diseases. The White House is talking about indoor air quality, and you have a public that's talking about filtration and air quality. It's also a business continuity measure. It's a way to keep restaurants open, your coffee shops open, your offices open, and schools open – with basic control measures.

And so what this means is that this [movement] is not going away, right?