

URBANLAND

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Tenants and Investors Will Be Looking for Healthy Buildings

JOSEPH G. ALLEN AND JOHN D. MACOMBER

The world, the real estate industry, and individuals continue to be rocked by the direct impact and resulting shock waves from the COVID-19 outbreak. The pandemic's costs to public health and economic activity are colossal. We are worried about our families and communities, we fret about our investments, and we want to know about the near- and long-term prospects for returning to work and repopulating buildings.

Evidence exists that buildings—as well as ships, airports, subways, and marketplaces—are central to controlling the spread of communicable diseases. This heightened awareness portends a future in which health-related issues will outweigh energy savings or aesthetic “feels like a nice space” considerations when buildings are being evaluated. This pandemic and the prospect of future contagions are a permanent tipping point in the rise in prominence of healthy buildings.

How will we know what qualifies as an objectively healthy building? How will we analyze investing in resilience for public health with the same rigor we apply to investing in resilience against fires or earthquakes? And how will this new awareness in the public realm influence the real estate industry in the future?

Combining knowledge from our different disciplines—building science research at the Harvard School of Public Health and finance research at Harvard Business School—we describe three areas that are shaping the future of buildings.

Health Performance Indicators

Traditional key performance indicators (KPIs) for buildings, which calculate energy use and other objectively measured components of mechanical systems, fail to measure the most important part of people businesses—people's health. As we argue in our new book, [*Healthy Buildings: How Indoor Spaces Drive Performance and Productivity*](#), businesses will accelerate the move to tracking health performance indicators (HPIs).

These indicators or ratings will carry new weight in tenant and investor decisions: Is the building baseline simply to be “healthy” enough to help repel a virus? Or is it “extra healthy” and able to help its occupants do their best work? (What matters is that the *people* are healthy; buildings are inanimate).

This means that present concepts like minimum ventilation standards from ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) and the early healthy building rating systems like WELL and Fitwel will evolve. They will move beyond the scoring of design components and directly into the real-time measurement of what the occupants are actually breathing and how they are feeling.

These factors can be objectively assessed across direct and indirect measures—for example, building system audits for dust versus total sick days. They can incorporate lagging indicators that can be benchmarked after the fact (for example, insurance claims), as well as leading indicators in which decisions are made upfront that will affect health down the road—most notably in ventilation and other elements of healthy building design and operation.

Here is what we see as the evolving landscape of available and future HPIs: they will start to be tracked, and they will evolve and become increasingly sophisticated.

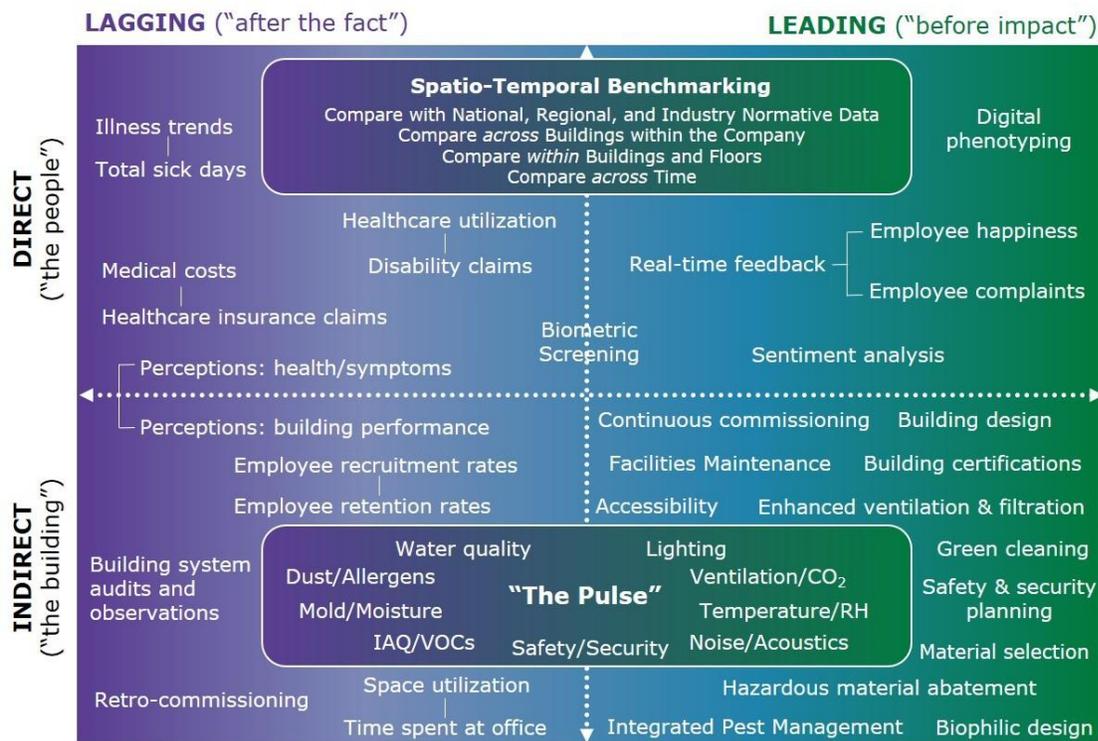
Investing in Health and Resilience

The evidence concerning what constitutes a healthy building is clear. That means investing in health is no longer an art, but a science. The [9 Foundations of a Healthy Building](#), a report from the Harvard School of Public Health based on 40 years of scientific evidence, provides the road map. It specifies nine elements of a healthy building: air quality, dust and pests, lighting and views, moisture, noise, safety and security, thermal health, ventilation, and water quality.

communicable diseases carried by building occupants.

This even applies to efforts to restrict transmission of COVID-19, in which healthy building strategies focused on higher ventilation rates, enhanced filtration, and increasing humidity can make a big difference. We described this in more depth in a March 4 column for the *New York Times* titled [“Your Building Can Make You Sick or Keep You Well.”](#)

A barrier to adoption of healthy building strategies has always been concern about initial costs. In our book, however, we show that the benefits exceed the costs by a factor of 10 or more. And that is just based on productivity.



Health Performance Indicators

Using this research, one can apply healthy building strategies and leverage building systems to help minimize effects from current and future threats and challenges, including worsening outdoor air pollution, illness from contaminated water sources, smoke from wildfires, gases from indoor chemicals, and many

There also is something even bigger at play: resilience in the face of low-probability, high-cost events.

Existing ULI work, such as [Ten Principles for Building Resilience](#) (2018), has looked at how and when property owners, investors, and lenders can justify spending extra money upfront to harden assets—to

make them more resilient. Part of the calculus involves identifying that incremental cost. The harder part is identifying the negative effects of a large disruptive event like a hurricane, flood, wildfire, or extended drought—when the particular peril has a low probability of happening. When is it worth the expense to be resilient?

We believe that in the new post-COVID-19 world, in which health becomes the primary focus of a population newly attuned to the importance of the built environment, the downside costs of operating a lower-grade building (or ship, airport, hotel, or factory) are much more vivid and tangible than they were before. This will lead landlords and investors to make the buildings healthier—or else tenants, customers, and lenders will be driven away. Building owners and facility managers can be expected to ramp up investment in these formerly “nice to have” aspects because now they are “must have” aspects.

Sensors, Analytics, and the Democratization of Data

The next wave of tenant sensibility will be here before we know it, and it will be big. Apartment renters, office space users, and students will use building health data in selecting living and working spaces—and in evaluating the facilities of restaurants, airlines, cruise ships, shopping malls, and hotels.

Individuals today have the ability to use inexpensive air-quality sensors from firms like Awair, Netatmo, and 75F to capture personal real-time data. And they can share that information on the cloud with other users of their choosing, according to Michael Driedger’s article “The Impact of Air Quality on a Building’s Safety and Comfort” posted by the website Propmodo, which explores how emerging technologies affect our understanding of the built environment. No longer is the quality of indoor air the province of a specialist hygienist and the knowledge guarded by the landlord or facilities manager: the information on air quality is out there and available. In a world in which the man and woman on the street are now inured to the concepts of masks and self-isolation, they also will be thinking about air quality inside and outside their buildings.

Tenants will be posting reviews about buildings online, in real time. During the early days of the COVID-19 outbreak, the restaurant occupancy curve on apps like Open Table and Foursquare bent steeply downward. Users of commercial building now are empowered to share their experiences and preferences with future buildings websites similar to today’s TripAdvisor, Morningstar, or Yelp. What might happen to a building or investment if a run of “bad air quality” posts started hitting such message boards? With the new sensibility, can a property survive being labeled a “sick building”?

The world will emerge from the first wave of COVID-19 shocks, but it will never be the same as before. Neither will the real estate industry. Objective, real-time, ratings-based health performance indicators, competitive attention to the nine foundations of a healthy building, and management of business relationships when building health data become democratized are all part of the new urban landscape. They are an imperative part of the new normal. Be ready.

JOSEPH G. ALLEN is an associate professor at the Harvard T.H. Chan School of Public Health. A former forensic investigator of sick buildings, he is the director of the Harvard Healthy Buildings program and deputy director of the Harvard Education and Research Center for Occupational Safety and Health. **JOHN D. MACOMBER** is a senior lecturer in finance at Harvard Business School. A longtime ULI member, Macomber was a construction and real estate principal before joining HBS.

Allen and Macomber’s new book, *Healthy Buildings: How Indoor Spaces Drive Performance and Productivity* (Harvard University Press), was released in April.