

The Coronavirus Is Going To Change How We Think About Design

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As the coronavirus pandemic continues to spread, disrupting daily life and causing major economic damage, design leaders are pivoting to focus on how building design can combat infectious diseases and improve **public health** outcomes.

The **coronavirus**, which causes the disease **COVID-19**, has led to more than 40,000 deaths globally in the last three months. Over 3,000 deaths have occurred in the U.S. as of Tuesday afternoon.

There are still many unknowns surrounding COVID-19, including a viable vaccine and whether it will reoccur seasonally. With this in mind, building design could start to change quickly, as the industry seeks to make workplaces and public spaces safer.

"I think we're on the cusp of actually seeing it impact current work underway," **Gensler** Managing Principal Kevin Heinly said.

"There are real design measures our clients could institute in our buildings to help safeguard against the worsening of that spike in the future."



Joe Allen, a **Harvard** assistant professor of exposure assessment science, told *Bisnow* buildings can play an important role in minimizing the risk presented by different modes of disease transmission.

One simple design element that can make a big difference is the quality of air ventilation. By investing in better mechanical air filtration systems to reduce airborne particles, fewer forms of disease will be able to spread.

Heightened awareness and concern about disease transmission could impact the indoor air quality standards that already exist.

"I think we'll soon be in a place where 'acceptable' is no longer acceptable," Allen said. "The goal will be optimal. The goal will be healthy indoor air quality."

Pickard Chilton principal **Jon Pickard** said the level of care that goes into designing mechanical ventilation systems will be amplified in the wake of the pandemic, as people are motivated to do an even better job as they create new facilities.

"I believe after something like this, these systems are going to be more carefully scrutinized," Pickard said.

Building design is also likely to see a surge of touchless and **sensor technology** and features in the future, which will also reduce the transmission of disease, Heinly said.

The use of touchless technology could extend beyond just the entry doors to a building. An app on a phone could enable touchless entry to elevators, tenant suite doors and even bathrooms.

"Any time we can take away the ability to touch something, I think, we're moving in the direction of prevention of disease spread," Heinly said.

Leaders from Gensler's healthcare practice have started working collaboratively with workplace and education leaders to address the design challenges presented by infectious diseases.

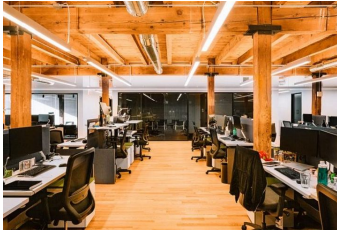
"A lot of the practices we're involved with are struggling with the same issues around COVID-19, so we're trying to bring a robust team of thought leaders together that are bringing healthcare expertise, lab and science expertise," Heinly said.

Both Pickard and Heinly noted that the design of bathrooms could change. Touchless technology already exists for faucets and hand dryers or hand towel dispensers, but has not been implemented for the simple task of opening a bathroom stall door.

“For whatever reason, people just didn't think about it,” Pickard said.

There had already been a shift in making it easier for people to exit some public bathrooms without touching a door with their hands, and Picard believes the pandemic will likely accelerate the trend.

Other methods of reducing touch include the use of **artificial intelligence** and voice-activated technology. That technology is already in use and readily accepted by most people, and could also prevent disease transmission, Heinly said.



As the global population struggles to socially distance from one another, the question of occupant density has also become a major issue.

Office spaces have become **increasingly dense over time**, as businesses sought to become more efficient and reduce costs. The average U.S. office dropped from 225 SF per employee in 2010 to 150 SF now, according to CoreNet Global.

To combat COVID-19, local, city and state ordinances have forced many employers to shift to a working-from-home model. That shift could extend beyond the life of the pandemic and change how companies fundamentally think about occupying space.

The rise of certain technologies, like videoconferencing platforms, group-chat programs and VPNs have all made it easier to work remotely. As the mass working-from-home experiment continues across the globe, some employers may rethink how they allow their employees to work, according to Heinly.

“The importance of being together will always remain, but will be less often, and we'll be more comfortable doing more virtually coming out of the pandemic,” he said.

The popularity of the open plan office design may also undergo a shift. While workplaces will still be important for people to come together and collaborate, there could be a move toward more partitions between cubicles or desks, the spacing out of workstations or even a resurgence of more private offices.

“What is most assured is that it will make people ask these kinds of questions about whether or not these open floor plans are impacting these transmissions,” Allen said.

Pickard said an open plan office has positives and negatives, but it is effective for bringing people together to collaborate. He said he is optimistic that in the wake of the pandemic, life will continue in a relatively normal way, but with greater working-from-home flexibility.

“I ultimately don't think the correct response is to just cocoon in extreme,” Pickard said.



Designers are also thinking about how some technologies and materials traditionally used in hospital and healthcare settings could be introduced into other building types.

Certain stainless steels, copper and brass have anti-microbial properties, and could see increased use in designs. There could also be a move toward paints and coatings that also resist germs.

“Hospitals have been in this arena for years, looking at wall coverings, floor coverings, all types of building finishes that are less prone to allowing bacteria to congregate and multiply on them,” Heinly said.

Looking ahead, Heinly can see the potential for a rating system for a material's ability to resist contaminants and microbes.

“I could see in the future, a material's ability to resist bacterial infection being something we track and get a separate rating system for, because tenants are going to be concerned about the types of office space they rent,” he added.

Pickard predicts more discussion will be held in the future around using anti-microbial materials in everyday spaces.

“My suspicion is that we’ll be having those conversations about applying that into the commercial office world, and we’ll just be a little more thoughtful about those things,” Pickard said.



The good news is, many of the design elements outlined above are not significantly expensive to implement. Most of the technologies already exist and are widespread, such as touchless entry, sensors and voice activation.

The exception may be technologies like more advanced air filtration systems. Heinly said he expects to see a tiered cost of integrating design strategies, similar to presenting solutions to a client for a renovation project.

It is difficult to directly calculate the return on investment to create a healthy building environment. Unlike [energy savings](#), the benefits do not appear as a line item on a financial report.

Allen leads the Healthy Buildings program at Harvard T.H. Chan School of Public Health, and has co-authored a new book on the topic. He is adamant that the benefits of a healthy building can have a significant positive impact on a business.

“The benefits don’t show up as a line item in the budget. The benefits show up enterprise-wide, in terms of productivity, employee retention, employee recruitment, fewer sick days,” Allen said.

Pickard said investing in a healthy built environment is the right thing to do, as at the end of the day, the purpose of real estate is to allow individuals to be productive.

“My suspicion is that if we bring in the proper public health professionals to council us, that we can probably come up with strategies that are doing the right thing and are not making profound changes in the economic equation,” Pickard said. “The real cost to any business is the cost of the people, and their productivity is the direct result of that.”

There is no question that the coronavirus outbreak will change how governments, businesses and individuals think about public health. Planning for future outbreaks will likely become a part of risk evaluation and management.

Allen said there is now a heightened awareness of how buildings influence our health, and if people weren’t paying attention before, they’re certainly paying attention now.

“The heightened awareness, I think, is going to come with a demand for better-performing buildings related to our health,” Allen said.

Pickard said he believes that when the world emerges from the pandemic, there will be a positive impact on how the built environment is created, and the importance of human relationships.

“I would argue that this horrible crisis with COVID-19 is actually crystallizing the power of human relationships and how vital they are,” Pickard said.

“I think it’s actually going to go even further, where the office environment is going to want to be a place that people choose to go to, because it is uplifting and it’s better than the little bedroom just off your living room.”

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