

How Architecture Can Help Prevent The Next Coronavirus

March 04, 2020 | Deirdra Funcheon, Bisnow South Florida (<https://www.bisnow.com/author/deirdra-funcheon-109533>) (<mailto:deirdra.funcheon@bisnow.com>)

Coronavirus is causing trepidation across all industries, and architecture is no exception. The outbreaks in China and Italy have led to disruptions, like a major furniture fair in Milan being postponed until June and the Venice Architecture Biennale being pushed back until August.

International design firm Perkins and Will closed its China offices as a precaution, said Managing Director Larry Kline, who is based in Miami.

"If it gets worse, it could start to affect financing, material availability and costs," said Jacqueline Gonzalez Touzet, founding principal of Touzet Studios. "Our global economy is interconnected, and Italy and China are important markets."



Daphne Gurri, the principal/owner of Gurri Matute and current president of the Miami chapter of the American Institute of Architects, said that the construction and design industry is reliant on China for metals, drywall and

various types of plastics.

"If they have to shut down factories or production slows because people aren't going into work, that could impact us," she said.

However, with their whole careers based on thinking up imaginative solutions and translating those to practical, real-world applications, architects are stepping up as leaders in dealing with the outbreak. Two Chinese hospitals (<https://www.wsj.com/articles/how-china-can-build-a-coronavirus-hospital-in-10-days-11580397751>) — one with 1,000 beds and one with 1,600 — were constructed in just 10 days. A Chinese architecture and design firm, Penda China, developed a suit (<https://www.standard.co.uk/news/world/coronavirus-suit-cure-china-a4377286.html>) that it says can protect wearers from infection.

Long before coronavirus became a household word, architects have had to deal with public health concerns. Anyone designing for public or retail spaces might consider crowd control and the spread of germs and pollutants on a daily basis.

Gonzalez Touzet became LEED AP certified 12 years ago after her son was diagnosed with asthma. Her firm designed the most notable stores on Lincoln Road — like Gap, Nike and Apple — which thousands of customers pass through each day. In designs, she seeks out materials that are easy to maintain, resist mold growth and promote good indoor air quality.

"No VOC [volatile organic compounds] on paint, paying close attention to moisture and flooring, and specifying better filters and HVAC equipment," she said. "Proper maintenance and commissioning is also important."

The director of the Healthy Buildings program at Harvard's School of Public Health explained in a New York Times op-ed (<https://www.nytimes.com/2020/03/04/opinion/coronavirus-buildings.html?action=click&module=Opinion&pgtype=Homepage>) how the management of ventilation, filtration and humidity in a building can either make people sick or keep them well.

Gurri, who designs civic projects — including parts of Miami-Dade Collge and Tyndall Air Force Base — as well as aviation and healthcare facilities, said that she incorporates hard materials that are resistant to viruses or bacteria living on surfaces.

Kline, whose firm has developed hospitals and life sciences buildings, is always trying to create forward-thinking, future-ready spaces. He predicted that the coronavirus outbreak could spark new ideas in his field.

"In cases like this, when the world's health is a consideration, design strategies can change exponentially in future work," Kline said.

Gurri said that if the virus persists, she could foresee design elements like automatic doors, which open and shut without people touching them, become more standard or even required by code — perhaps not just for room doors, but for things like cabinets and drawers.

"Who knows where innovation could lead?" she said.



Looking beyond coronavirus, the three architects — all of whom will be among the panelists and moderators at *Bisnow's* Architecture & Design (<https://www.bisnow.com/events/south-florida/south-florida-architecture-and-design-4161>) event March 16 — said that climate change and sea-level rise are their next top concerns.

Gonzalez Touzet works with the University of Miami's Master of Real Estate Development & Urbanism as the chair of the Resiliency Committee, urging the real estate community to lead on this front.

She sees potential in prefabricated materials. The International Energy Agency says 7% of industrial energy use comes from the cement industry, as well as 7% of global emissions.

"Cement is a huge carbon concern, and is an industry that hasn't changed much in 200 years," Gonzalez Touzet said, adding that is just one part of the solution. "Miami is a leader when it comes to wind codes, and we need to do the same with water and increased heat."

Immediately, developers should be building higher, raising mechanical/engineering/plumbing equipment, using flood-resistant materials in ground floors and incorporating solar energy backups as well as power fans that inhibit mold growth, she said. Gonzalez Touzet is also keen on collaborating with landscape architects.

"All of our new work has a heavy focus on how to live with water: how to store it on-site, how to filter it and recycle it," she said.

A 2016 research paper written by a professor in Vietnam (https://www.researchgate.net/publication/311879453_Adaptive_Architecture_and_Adaptive_Architecture_and_the_Prevention_of_Infections_in_Hospitals) warned that certain diseases may spread faster and further in an unstable and warming climate. Architects could counter the spread with ventilation, sunlight and adaptive finishing materials.

"This is an all hands on deck moment to find solutions that can be scaled," she said. "If we are really going to get serious about [being] net zero by 2030 and net zero carbon by 2050, then we are looking at really leaning into innovation on the construction side."

Hear Larry Kline, Daphne Gurri and Jacqueline Gonzalez Touzet speak March 16 at Bisnow's South Florida Architecture & Design (<https://www.bisnow.com/events/south-florida/south-florida-architecture-and-design-4161>) event.

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