Metal architecture

Post-Pandemic Design

A year into the pandemic, we take a look at how buildings and spaces may change going forward

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170 N. Fifth St., Brooklyn, N.Y. Photo courtesy of RKTB Architects.

This past year has been unlike any we've ever experienced. With a global pandemic changing the way we do and think about everything around us, and now, with the vaccination efforts going strong across the country, we've decided to take a beat and see how the Coronavirus is going to change the way buildings and spaces are designed in the future. We spoke to a variety of architects across the United States to see what changes they've been seeing clients request, and to get a feel for what they expect to see in the coming months and years in a variety of different spaces.

Overall, the general consensus is that the health and wellness of the occupants of a space will play a larger role in how buildings are designed. Tim Keil, RA, principal at STUDIO MA (https://studioma.com/) in Phoenix, says he thinks wellness is going to factor much more heavily into how everyone approaches the built environment. "Whether for new office space, industrial, health care, education or residential, I think design decisions, and therefore budget, will begin to track toward addressing occupant well-being and focus on contributing more to health and safety, not just the primary functions."

Additionally, there is an inherent need for flexibility and adaptability in spaces, a way for things to change in a moment's notice. As Keil says, "We would want to continue looking at how we can build flexibility into space types that previously haven't been designed to be especially adaptable. How can we design a space that's typically meant for a small group to quickly and easily accommodate social distancing that isn't just reducing occupancy? Are there ways that we can build in solutions via the mechanical or lighting systems, partitions and furniture, even circulation in ways that are responsive, not reactive, to health crises and inherently contribute to increased well-being?"

As we've discovered with many things this past year, there is no one answer for the different types of buildings and spaces. And a lot of the things regarding sustainability and wellness that were emerging before COVID, have become more and more relevant as time goes on.

Offices

Heading into the pandemic last year, a lot of people were already looking into different types of working modes, including working remotely, which we've seen can be a very effective way of business for a variety of companies. Theresa Genovese, AIA, LEED AP, principal at CetraRuddy (http://cetraruddy.com/), New York City, notes, "We may not want to work remotely for the remainder of our career, but there are different ways in which we will be working in the future as hybrid models, depending upon your business and your building. And there's pros and cons to both."

But even before the pandemic, Keil says a lot of offices were looking toward more individual workspaces with less open office environments.

Corporate Commons Three, Staten Island, N.Y. Photo courtesy of CetraRuddy

"The pandemic has put a lot of pressure on offices that had operated using efficiency models with little area allocated to each person. Simply spreading people out isn't an option for a lot of offices and might require looking at other strategies for optimizing space. This is a critical element for anyone considering renovations or planning a new project in the current pandemic environment. I think it brings up a lot of questions that should be addressed during the programming phase to really optimize the available space and tailor it to the core principles for how a company wants to work. Do we still need lots of meeting rooms, or would we be better served by designating some areas for smaller, separate pods for individuals to participate in virtual meetings?"

With more people potentially working from home long term, office square footage may be down for many companies. "Having discovered that we can work from outside the office or the classroom, everyone has experienced that the world is becoming much more flexible, which is likely to lead to overall reductions in the size of the physical workplace—a trend that could extend to educational institutions, too," explains Mark A. Sullivan, AIA, LEED AP BD+C, partner with Princeton, N.J.-based Joshua Zinder Architecture + Design LLC (https://joshuazinder.com/) (JZA+D). "There will still need to be places for co-workers to gather for teamwork and collaboration, not to mention the socialization aspects of office life, but short-term desking and hoteling space will become more common while dedicating lots of floor space to workstations becomes less so. Many employees will elect to be remote most of the time for whatever reason, and office space will shrink."

As Victor Body-Lawson, AIA, founder of Body Lawson Associates (https://blarch.com/) in Harlem, N.Y., notes, it is much more cost-effective for people to work from home, and cost-effective for the environment, infrastructure and pollution, in addition to reducing stress levels. "As a result, a lot of companies are looking at doing a hybrid system where they maintain smaller office spaces that are used just for occasional meetings, but you are looking to people working remotely for most of the time."

Another advantage of working from home is that it can allow companies to have a global reach. Now, companies are not limited to hiring people who live within commuting distance to an office, but can now hire people all across the United States and even in different countries. "We are actually thinking of how one may leverage

talent, the fact that the office may not be pinpointed to one physical location may be advantageous to pulling talent that we may not necessarily have had the opportunity to pull if they had to be physically in our office," says Genovese.

Primary Education

Photo courtesy of Joshua Zinder Architecture + Design LLC (JZA+D)

The education sector has probably seen the most changes than any during the pandemic. While some schools have had students back in class full-time, many are still doing all online learning or a hybrid system. While most agree that K-8 teachers and students need to be in an in-person learning environment for the best education, Sullivan notes that we will see classrooms redesigned to allow for smaller numbers of students in each room and still allow for social distancing. Ted Haug, AIA, LEED AP BD+C, principal and Chief Creative Officer at Legat Architects (https://www.legat.com/), Chicago, expects there to be wider corridors (to allow for social distancing) or one-way circulation. He also foresees larger classrooms where the teacher may not be located at the front of the room, but rather in a back corner to limit direct contact.

Genovese says they've done some work with breaking down the scale of groups in classrooms. And for younger students, project-based activities could lead to partnerships between schools and firms or institutions where there's a push to more activity happening outside of the classroom. "Being in an environment where they're actually engaged with other students and the teacher has shown to be a better way for students to learn," she says. "When they get a little bit older, there are different kinds of hybrid modes of activity where there are some days at home, some days within the classroom. There could be an opportunity for students to learn skills to be more adaptable and flexible."

Higher Education

For higher education, Sullivan expects there to be a reduction in classroom space as well as dormitories and dining rooms. "We're already seeing some of the rapid-response tactics by universities become part of the future planning process," Keil explains. "Clients are considering how they may be able to accomplish more in an online platform and making provisions for distance learning throughout rather than just a few dedicated spaces. We're currently in construction on a large academic and residential project for a major institution where we've implemented some significant technological upgrades to facilitate this need. It puts a lot of pressure on the data infrastructure; we're trying to accommodate flexibility and upgrade-ability as much as possible since we know that this need is only going to increase over time."

Photo courtesy of STUDIO MA

In the same way that companies and businesses are able to expand by hiring employees outside of a normal commuting range, schools can now more easily draw in students from all across the globe. Body-Lawson, who teaches at Columbia University, says the school has been running a hybrid system where students and faculty can come to studios or classes, but are free to work from home. It is this hybrid system has allowed the school to have a global reach. "This hybrid system is allowing the university to grow itself at a larger rate where it can actually have students across the world simultaneously, as opposed to bringing everyone to the campus, which would be limited," he says. "So, if you looked at a school that has 5,000 students, you could essentially double that because of remote learning, and it can be effectively done."

Custom Dashboard Solutions

In this time of COVID-19, Elizabeth von Goeler, principal and chair of external relations, and Tristan Rock, head of business development at Sasaki (https://www.sasaki.com/), Watertown, Mass., say that the custom dashboards they've been integrating into client engagements for years are being refined to meet new needs. "More and more clients have been asking for help getting accurate, timely and intuitive data visualization to aid in their decision-making during a period of uncertainty," says von Goeler. "As clients anticipate workers coming back to offices or students returning to campuses, there are many factors at play, and being able to arm clients with customized tools that allow them to explore and understand complex scenarios has been invaluable to our clients. While it requires some investment in the upfront, clients ultimately save significant time and money in making informed, responsive decisions rather than engaging in costly trial and error to arrive at space planning and design decisions."

Sasaki Strategies (https://www.sasaki.com/practice/expert design-tools/), the in-house data visualization and programming group,

Yet, with a number of students not being back in the classrooms, a vast majority of the university spaces are not being used, such as classrooms, studios, auditoriums. And, as Keil notes, many business and institutions are re-evaluating how they use their outdoor spaces to accommodate for social distance, while still allowing for larger gatherings. "There are opportunities to plan for this need that become permanent parts of the campus—canopies can become signature spaces that support temporary outdoor venues as needs arise."

Another challenge for higher education is the delivery of food and meal plans to students on campus. With a lot of schools having closed down their larger dining facilities for undergraduates, Genovese says many are looking at 24/7 kitchens. There's a lot of different ways in which schools are looking at how to deliver the food with some partnering with different apps or websites to physically deliver food to the residence halls. And, since dining is a way for students to come together as a group, the socialization of dining is very important aspect of college life. "It's going to evolve," she says, "but I think each school is definitely approaching it a little different and testing it out, seeing what their students respond to."

One Chestnut Place, Quincy, Mass. Photo: Bruce Martin, courtesy of The Architectural Team (TAT)

Residential

In response to remote work becoming more accepted, Matt Duggan, AIA, project manager with The Architectural Team (https://www.architecturalteam.com/) (TAT) in Chelsea, Mass., says that for multifamily residential buildings, they are seeing a trend toward closed floor plans with separate enclosed smaller rooms. While some aspects of open floor plans remain popular, such as open kitchens, dens have become more popular as a space to create a quiet place to work from home, take a video call or do remote schooling. However, "Oftentimes, this mean the living/dining area is reduced in size," he says. "To provide for comfortable dining, designers are including kitchen islands that double as dining tables and locating the den adjacent to the kitchen so that it can double as a formal dining room (often with barn or French doors to allow for openness when desired)."

Peter Bafitis, AIA, partner at New York City-based RKTB Architects PC (http://rktb.com/), agrees, saying they're seeing a trend toward more inclusion of home office space and access to outdoor space. "Likewise, touchless operation for equipment like elevator call buttons are becoming standard, while there is greater attention to the performance of ventilation systems in common spaces," he explains.

Additionally, Bafitis expects there to be an increase in projects converting office buildings and hotels into multifamily residences, while in new multifamily residential projects, he says there could be increases in floor area devoted to living space, while open area and shared amenities could potentially decrease density. All of this could have implications for energy consumption, local services and transportation.

Health Care

Hospitals and health care centers have seen the brunt of the activity over the past year. While most have managed to continue operating at full capacity and then some, Haug expects there to be some changes in the future. For example, hospital reception stations will likely be designed with built-in flexibility to have glass separations between guests and staff. There will be integrated, but discreet temperature reading devices at all entry points, and all areas will be designed to prevent the spread of contagious diseases. Facilities will require more sophisticated mechanical systems that can address isolation and air exhausting requirements. And, Haug says, anterooms or Airborne Infection Isolation Rooms (AIIRs) may be designed into patient rooms to ensure patient isolation and infection control and procedure.

works closely with clients and the design and planning teams to understand the core issues at hand to develop dashboards aimed at the client's specific needs. According to Rock, common features might include baseline assumptions like projected headcount growth by department, space demand per person, or cost per square foot. "By changing these variables, we can see the real-time impact on outputs such as space demand, cost, energy demand, etc.," he says.

In the past, space utilization discussions were simpler because there was far less diversity in the ways workers worked or students learned. Office space could be determined based on head counts at different levels and how to fit X number of offices and Y number of cubicles and Z number of conference rooms. And on campuses, building and space typologies were determined to have a certain amount of large and small lecture halls, and classrooms with desks, all equipped with a blackboard, projector and screen.

With the shift over the last few decades in the way people work and learn, largely due to the greater integration of technology and advancements in travel that allow for more connectivity, the ongoing pandemic has created the need for new tools to model complex conditions that are accurate.

"One of the great benefits of a visualization tool is that it helps with socialization of ideas," explains von Goeler. "When there are so many factors and divergent interests at play, being able to show how factors intersect and map out myriad solutions to meet multiple needs across departments or amongst different constituencies is really impactful. Corporations and educational institutions, big and small, will all need to grapple with iterative scenario planning over the next few years and it's our hope that by creating these user-friendly tools our clients can continue to have the important discussions even after their Sasaki planning and design teams have wrapped up a project engagement."

On the outpatient side, Haug envisions dedicated telemedicine spaces to provide privacy for the clinician and patient, as well as standardized technology to diagnose. "These will ensure patients can safely experience uninterrupted and meaningful health care consultations during pandemic periods safely and provide convenience for those who have difficulty traveling."

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Stadiums

The desire to gather in large groups, watching sports games or concerts, will most likely ensure that stadiums and arenas are not going to disappear in the future. "I think that when there is herd immunity, those stadiums are going to be packed again, it's just a human need," Body-Lawson says. "They may be smaller, for newer ones, that get built, but for now, I think that that need is there. And, also the fact that the infrastructure of these arenas is so huge, to make them function financially, a lot of those owners would have to figure out ways to bring people back into the stadium."

Additionally, Haug says one of the changes they foresee is an increased implementation of digital access within stadiums. While events have been consumed digitally for the most part this last year, there are certain aspects of the venue that have the ability to improve the user experience.

Flexibility is Key

After a year of the pandemic, it's become obvious that flexibility and adaptability are key to survival. No one expected a pandemic, and therefore there were no plans in place for when there was one. "This was a unique point in time when the whole world has paused," Keil says. "And, while things are slowly returning to the pace of pre-COVID times, we shouldn't miss this opportunity to re-evaluate all aspects of the built environment. For many of us, things we took for granted, like how we buy groceries, riding an elevator, or sharing a meal or a drink are now fraught with risks to ourselves and others. As designers we have a responsibility to use what we've experienced to do better moving forward."

"I'm encouraged by the ways we've adapted as a society to be able to stay connected, even if virtually," Keil continues. "The pandemic has also clearly shone a light on the vast inequities that exist within the realm of what we do as architects and designers. As we look forward to re-engaging in physical spaces we need to remember why it is so important and find ways to bring people back together that are safe, welcoming and inclusive.