

The Architect's Newspaper

June/July 2020	www.archpaper.com	@archpaper	\$3.95
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Thoughts from the Ground

Letters to the editor: In the immediate aftermath of George Floyd's killing, Minneapolis-based architects grappled with the current moment and looked for ways to move forward.



I have been asked by friends and colleagues to write a statement/reaction regarding the brutal and inhumane murder of George Floyd. I was, and still am, at a loss—in disbelief, numb, angry, overwhelmed, and grieving. I could not watch the video; it was all around me (again). I look at his face—we have a tangential connection, but I don't have to know him, because I know him—he's reflected in my family, my friends, my friends' children, my colleagues at 4RM+U-LA (a Black-owned firm).

I would be remiss to not mention the thousands of dark moments we have seen in recent years—walking home from the corner store, playing video games in a darkened house, reaching for a wallet, jogging, sleeping. I could go on with the circumstances and the names, but it would be a sad tome and so many names, both widely spoken and many times unspoken.

What a perfect storm we find ourselves in. **continued on page 14**

POST-PANDEMIC PLANS



Weeks of lockdown, followed by a gradual reopening of the public and commercial spheres, have dulled our appreciation of cities. Will the feeling last? See page 20.

Sitting Down with *Deem*

A new journal wants design to focus back on people.



This year, Nu Goteh, Alice Grandoit, and Marquise Stillwell launched *Deem*, a biannual journal that approaches design as a social practice. In a conversation posted on the journal's website, researcher Larenz Brown said, "I think *Deem* is for people who don't always see themselves represented in media in a way that's satisfactory. It's for people who want to reclaim their rightful place in design conversations. It's for people who have felt excluded from things that they feel deeply about."

The journal's first issue, "Designing for Dignity," came out in print earlier this year and featured writer and facilitator adrienne maree brown on its cover. In an interview inside, Grandoit and brown discuss brown's work facilitating discussions in community-based organizations. Grandoit encourages brown (and readers) to see that work as an integral part of the design process, one that shapes how communities plan and use space. **continued on page 13**

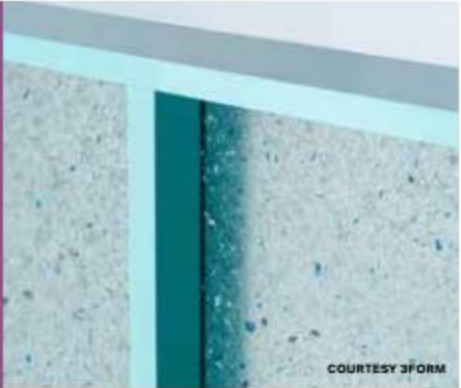
SHUT INS

The authors of a forthcoming book on quarantine discuss its past, present, and future. See page 26.



Windows & Walls

Discover new barriers, automated openings, and hygienic hardware for safeguarding public spaces against infection. See page 28.

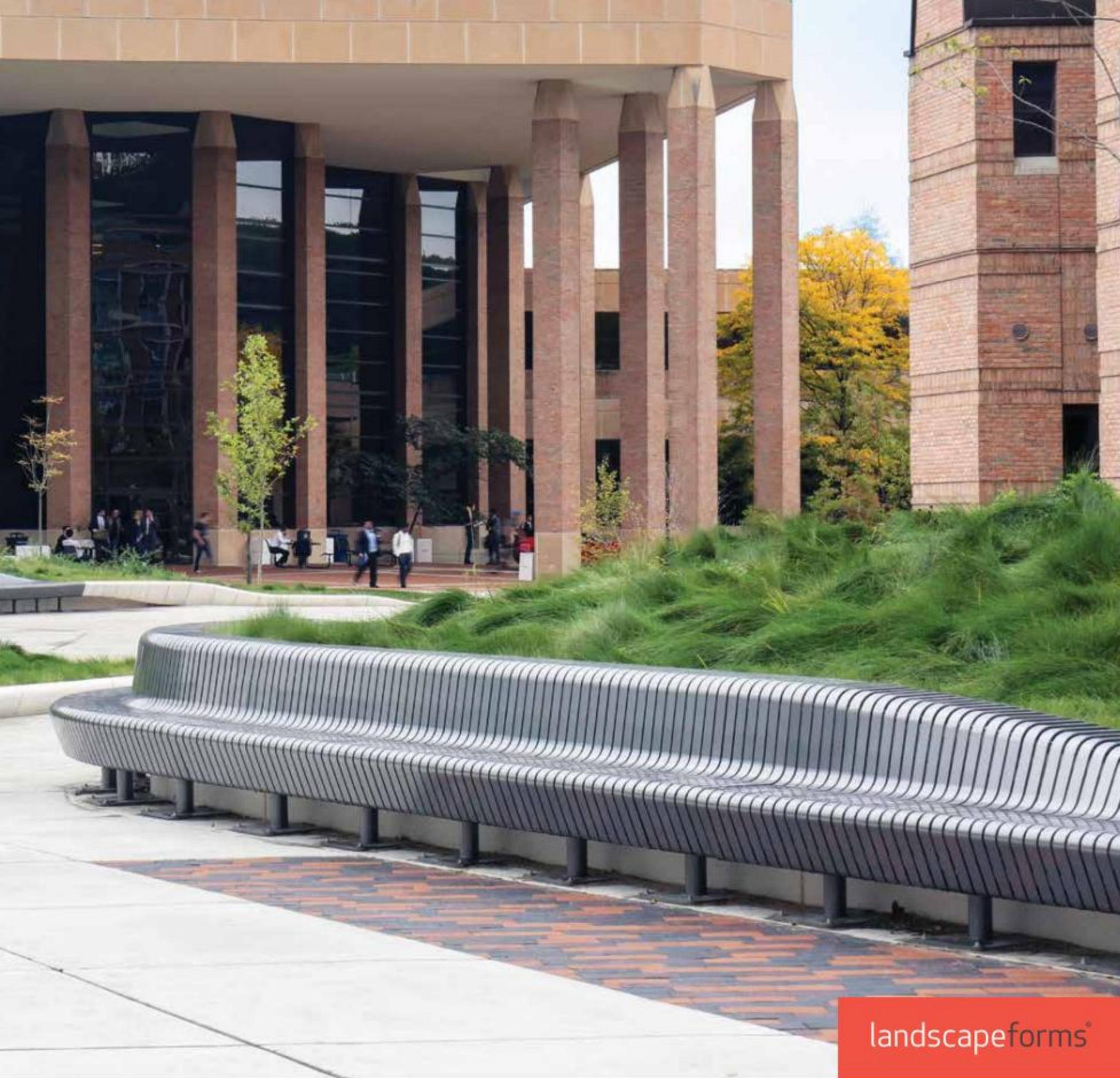


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To our readers,

The deaths of Breonna Taylor, George Floyd, and other Black Americans at the hands of police sadden us. The mass actions for justice that their deaths have prompted have our full endorsement.

We see there is reason in revolt when “protection” gives cover for domination and predation, when Black, Indigenous, and minority lives are made the targets of routine state-sanctioned violence. The street demonstrations across the country have shown that sweeping reform is not only possible, but necessary. We mourn with the communities that have been and continue to be brutalized by systemic anti-Black racism. The tragedies of all social causes are the human victims that set them on their course, so we must moderate our hope with humility.

Architecture and planning, we know, are complicit in forms of domination. Buildings make inequity—historical and ongoing—palpable, even as they are themselves inert. Redlining, segregation, disinvestment from predominantly Black neighborhoods, their wholesale dismantlement through urban renewal, deficits in public health planning, and other exclusionary policies are frozen in brick, concrete, and glass.

Disenfranchisement requires active maintenance, and professional barriers can seem as immovable as any wall or building. This is reflected in the abysmal rate of diversity—across race, class, and gender lines—within the architectural profession itself and the educational and media institutions that underpin it.

Social justice has been at the heart of the mission of *The Architect's Newspaper* since its founding in 2003, but we would be remiss if we did not acknowledge lapses in judgment over the years. Too often, architectural media proliferate the same voices and permit the same omissions, and we pledge to avoid any such missteps going forward.

At the same time, we realize that statements of intent are responses to moments

of intense external pressure, and when that pressure subsides, commitments slacken. So we invite you, our readers and the wider AN community, to hold us accountable in elevating Black, Indigenous, and people of color (BIPOC) and taking direction from their example.

- As a starting point, we pledge the following actions:
- Naming more Black architecture and design practitioners and those from other minority groups to AN's editorial advisory board
 - Increasing the presence of Black people in public panels
 - Increasing the presence of Black people in awards juries
 - Including a social impact rubric for awards
 - Increasing the number of Black writers and contributors
 - Working with historically Black colleges and universities to find interns when our internship program resumes

- We also want to signal our support for the following causes and avail ourselves of the following resources:
- Fundraising campaigns in memory of George Floyd and Breonna Taylor
 - Black Lives Matter
 - Reclaim the Block
 - The Marshall Project
 - NOMA: National Organization of Minority Architects
 - BIDN (Black Interior Designers Network) donation fund
 - Colloqate Design's Design Justice
 - Black in Design
 - ADPSR (Architects/Designers/Planners for Social Responsibility)
 - An excellent reading list about architecture, planning, and racial injustice put together by Mario Gooden, Mabel Wilson, and the Architectural League staff

Diana Darling, AN Media Group, and *The Architect's Newspaper* editors

Correction

Due to a reporting error, an article in the May 2020 issue of AN misrepresented the transformation of 44 Union Square, aka Tammany Hall, in Manhattan. A subsection of the CE Strong article “Functional Creativity with Ornamental Metals” asserted that a revitalized Tammany Hall would serve as the headquarters of a major tech firm; in

fact, no such tenant has signed on, according to developer Reading International. In the same subsection, a formatting error cut off the end of a parenthetical clause. The renovation works demolished Tammany Hall's auditorium interior, not Tammany Hall itself (it remains standing). AN regrets the errors.

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We corralled the top architecture and design stories buzzing about the internet this month.

Venice Architecture Biennale and Expo 2020 Dubai pushed to 2021

The organizers of the 17th Venice Architecture Biennale announced that the festival will be postponed to May 2021 because of the ongoing novel coronavirus pandemic. Expo 2020 Dubai also shared its plans to delay opening; it will now run from October 1, 2021, through March 31, 2022 (although, confusingly, it will keep the name Expo 2020 Dubai).

Coronavirus is leaving cultural institutions reeling

The coronavirus pandemic has forced nearly 90 percent of worldwide cultural institutions—about 85,000 in total—to close to help mitigate the spread of disease, according to a UNESCO report. Another sobering study by the International Council of Museums estimates 13 percent will never reopen.

National Building Museum executive director retires as museum slashes staff

Longtime National Building Museum executive director Chase Rynd announced that he would retire after 17 years of helming the beleaguered Washington, D.C., institution. Days later, the museum announced that it would lay off about two-thirds of its staff, and only 18 full-time employees remain.

Farnsworth House (once again) besieged by floodwaters

Ludwig Mies van der Rohe's Farnsworth House, perhaps the most flood-prone site in the National Trust for Historic Preservation's storied portfolio, has once again found itself threatened following catastrophic rains that ravaged much of the Midwest during the second half of May 2020. Conservators estimate the damage will cost \$500,000 to repair.

Pop-up coronavirus hospitals begin to wind down operations

As cities around the world continue to reduce COVID-19 infections and deaths, the need for temporary hospitals to treat coronavirus patients is diminishing, as well. The much-vaunted use of the Jacob K. Javits Convention Center in Manhattan as a field hospital has wound down, as similar convention-to-care centers were also dismantled around the world.

Six emerging firms take home the 2020 Architectural League Prize

The Architectural League of New York gave the Architectural League Prize to David Eskenazi, of d.esk; Garrett Ricciardi and Julian Rose, of formlessfinder; Leslie Lok and Sasa Zivkovic, of HANNAH; Isaac Michan Daniel, of Michan Architecture; Ivi Diamantopoulou and Jaffer Kolb, of New Affiliates; and Luis Beltran del Rio Garcia and Andrew Sosa Martinez, of Vrtical.



Herzog & de Meuron's Chelsea FC stadium permanently sidelined

The saga of Herzog & de Meuron's Westminster Abbey-inspired replacement stadium for Chelsea FC has sputtered to its end. The \$1.3 billion project was put on indefinite hold in May 2018 because of what the soccer club called an "unfavorable investment climate." Developers allowed planning permission, first granted in 2017, to expire on March 31, 2020.

Daniel Fernández Pascual wins 2020 Wheelwright Prize

Daniel Fernández Pascual, a Spanish-born, London-based architect won the Harvard Graduate School of Design's 2020 Wheelwright Prize. Fernández Pascual's winning proposal, *Being Shellfish: The Architecture of Intertidal Cohabitation*, examines the architectural possibilities of the world's diverse intertidal zones.

Christo passes away at 84

Artist Christo Vladimirov Javacheff, who achieved fame for the installations he completed with his late wife, Jeanne-Claude Marie Denat, died May 31, 2020, of natural causes. The news was announced via a Twitter account representing the artists, as was the news that Christo's dream project, wrapping the Arc de Triomphe, would go ahead in 2021.

John Ronan Architects reveals circular new headquarters for Chicago Park District

Chicago's John Ronan Architects has revealed its distinctive design for a new home for the Chicago Park District. The circular two-story building will not only serve as administrative headquarters but also include a field house, a building type that anchors many parks in the city.



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Low-carbon neighborhood takes root at former power station site on San Francisco waterfront

What was once one of San Francisco's filthiest industrial sites, the old Potrero Power Station in Potrero Point, is on track to be redeveloped into a new 29-acre neighborhood complete with 2,600 residential units (30 percent of which are earmarked for lower-income residents), six acres of green space, and more.

April's Architecture Billings Index was lowest ever

The Architecture Billings Index, the measure the AIA uses to track demand for design services, took a dour downturn in March as the coronavirus pandemic shook economic confidence and locked up jobsites—but April's numbers were much worse. The ABI slid from 33.3 in March to 29.5 in April.

CannonDesign unveils modular Restorative Care Village in Los Angeles

CannonDesign is overseeing the design and construction of a healthcare project that will serve as a new model of medical treatment facility on the campus of Los Angeles County + USC Medical Center, one that specifically aids people for whom quality recuperative care is elusive: homeless and mentally ill patients.

Finland will use coronavirus stimulus to build a new architecture and design museum

Finland's finance minister has presented a fourth supplementary spending package of \$6.23 billion dedicated to coronavirus recovery efforts. The package sets aside \$68 million for the creation of a new museum of architecture and design in Helsinki.

2020 Turner Prize canceled; award money will go to struggling artists instead

Tate Britain, the London museum responsible for administering the Turner Prize, has called off the prize's 2020 edition because of coronavirus pandemic-related difficulties. Instead of honoring British artists for a 36th year, Tate will dispense ten grants of £10,000 (approximately \$12,000) to artists in need.

Herzog & de Meuron's first Toronto building could be the tallest residential tower in Canada

Herzog & de Meuron has been commissioned by Dutch real estate development companies Kroonenberg Groep and ProW-inko to design a 1,063-foot-tall tower in Toronto's Yorkville neighborhood. If completed as proposed now, the 87-story skyscraper will be the tallest residential building in Canada.

West Seattle High-Rise Bridge creeps toward potential collapse

The West Seattle High-Rise Bridge, a commuter route around Seattle, has been closed since March 23 because inspectors discovered new cracks in its structure. They first noted cracks in 2013, when the damage seemed relatively stable, but conditions deteriorated recently.

Los Angeles's largest municipal park gets even larger

Nonprofit advocacy group Friends of Griffith Park, joined by community organizations and private donors, has bought two undeveloped hillside lots at the southern edge of the Los Angeles landmark for \$500,000. Together, the two properties will add 1.35 acres to the park's 4,200-acre footprint.

Sidewalk Labs pulls the plug on its Toronto waterfront smart city

Daniel L. Doctoroff, chief executive of urban innovation start-up and Alphabet subsidiary Sidewalk Labs, announced that the Quay-side redevelopment project on the Toronto waterfront has been canceled. Heatherwick Studio, Snøhetta, Michael Green Architecture, and other firms had been poised to help make the timber "smart city" a reality.

Dallas's first climate action plan is ambitiously broad

The Dallas City Council unanimously approved the Comprehensive Environmental & Climate Action Plan, a road map to making the city carbon-neutral by 2050 and a bulwark against the effects of climate change. One of the most sweeping requirements is that all new construction be energy-neutral by 2030.

Bad effects for fowl from FXCollaborative

According to a May 18 article in the *New York Post*, Circa Central Park, a luxury condo building on New York's Upper West Side designed by FXCollaborative is killing quite a few birds. The paper reports that our fine, feathered friends are slamming into the windows of the building, which opened on Central Park's edge in 2017. Apparently, migrating fowl see the park reflected in Circa's expansive windows and are flying into them and then falling to their death, so many that the Wild Bird Fund, an avian-protecting nonprofit, singled out the building on its Facebook page. It's unfortunately not an unusual problem for city buildings, but it is an ironic one here given FXCollaborative's leadership on the issue. Staff members of the firm testified in support of a New York City

rule aimed at reducing bird-building collisions, and the firm has advertised its attention to the issue in other projects, like the retrofitting of the Jacob K. Javits Convention Center and the experience center for the Statue of Liberty. When asked about Circa, a representative from FXCollaborative responded "We are distressed by the issues there, especially during migration season.... The residential sector has lagged behind other building sectors in adopting bird-friendly strategies. We hope that our pursuit of solutions, research and education, and backing for local legislation will shift the response of building owners and developers from unfamiliarity to action on this key issue." The representative also directed those interested to the American Bird Conservancy for information on bird friendly design.

Counter-Strike: BIG?

Twitter user @brianthehuman spied a Facebook post from Jens Majdal Kaarsholm, BIM manager at Bjarke Ingels Group (BIG), where Kaarsholm translated a Revit model of the company's new Copenhagen headquarters into an environment for *Counter-Strike: Global Offensive*, a popular multiplayer first-person shooter video game.

BIG maintains a large office in New York City, and so it may be a bit morbid to give employees the option to go on virtual shooting sprees in their workplace, considering that 211 people died in mass shootings in the United States last year. However, several people online seemed to approve. BIG did not respond to a request to comment.

What's going on at Snøhetta?

The Instagram account @olmstedfanfiction posted in its stories an anonymous report of Snøhetta founding partner Craig Dykers saying in an internal meeting with the company's management that he "doesn't support BLM [Black Lives Matter] and even accused the organization of using donated funds to buy guns to arm protesters." According to the report in the Instagram post, no one present opposed him. When asked about the issue by *AN*, Dykers responded, "The statement circulated earlier this week regarding my views on the Black Lives Matter movement are not representative of

my own or of our collective office's response to ongoing protests around the world.... I apologize for the harm caused or implied and deeply regret if they were seen to contain anti-Black sentiments." Snøhetta representatives also sent a copy of an internal memo sent to Snøhetta staff on June 11, 2020, that addressed systemic barriers facing people of color and Black people, specifically, and steps the company is taking to promote equity, diversity, and inclusion.

Read more at [archpaper.com](https://www.archpaper.com).



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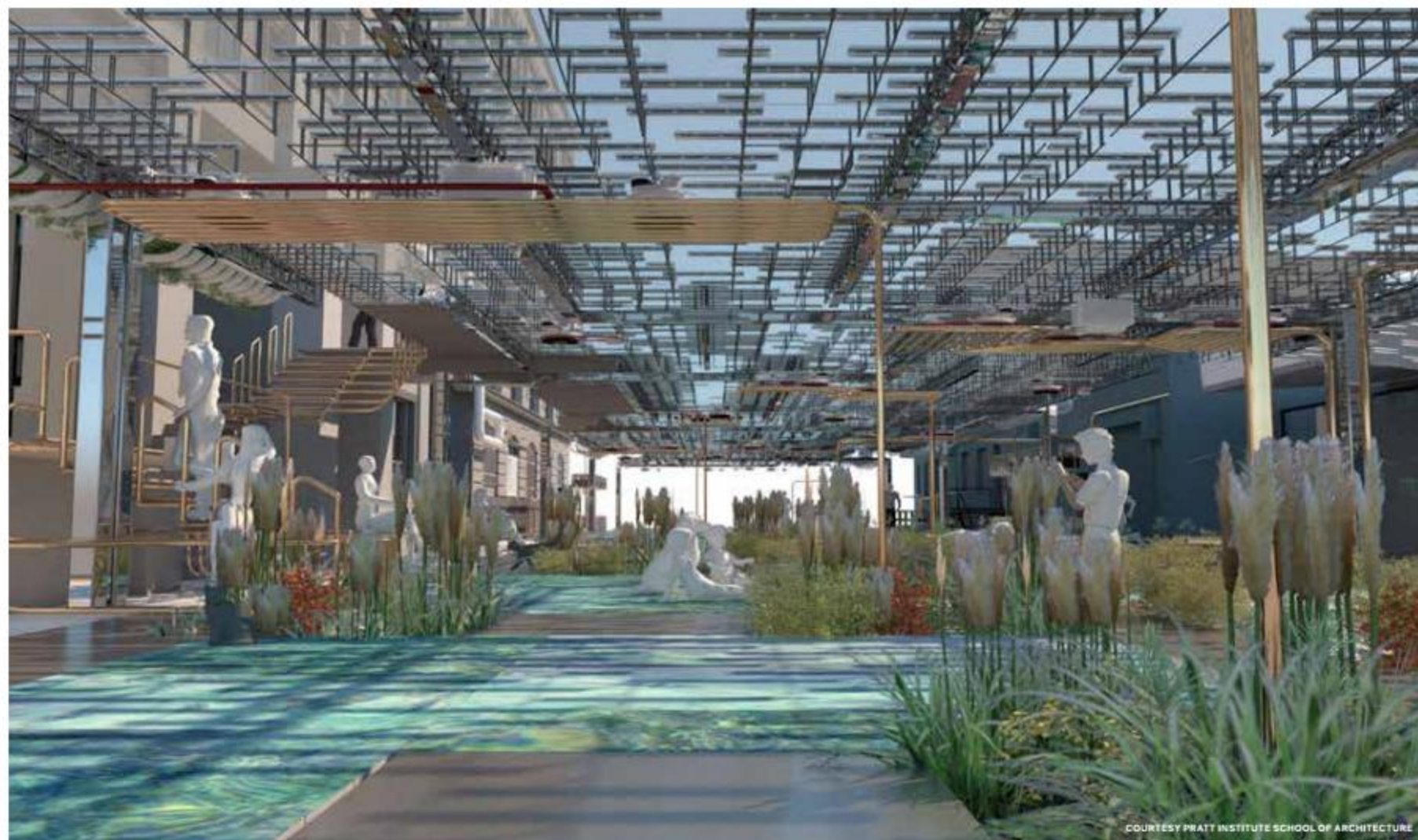
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School's Out...Forever?

The coronavirus pandemic is forcing architecture schools to rethink remote learning.



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The Urban Hybrids studio at Pratt envisioned different outcomes for a Brooklyn where autonomous vehicles were the norm.

As we roll into the summer term, and the novel coronavirus pandemic continues, schools across the United States remain closed for in-person classes. Architecture and design faculties have turned to educating students in a way many schools had resisted: online.

AN reached out to a number of universities to find out how they coped with the change, and unsurprisingly, results were mixed. When schools sent their students home midsemester (often to countries in significantly different time zones), approaches to remote learning hadn't been standardized. Many faculty were quick to take to the now-ubiquitous video conferencing tool Zoom, using it to hold classes, record lectures, and critique drawings and projects with the built-in screen-sharing function. Digital reviews became the norm.

"Students are fretting that they can't access the plotters, or robots, or their physical models," said Winka Dubbeldam, Miller Professor and chair of the architecture department at the University of Pennsylvania Stuart Weitzman School of Design. Dubbeldam said that while the transition went smoothly at Penn, the faculty know it can't go on forever. This year's end-of-semester reviews were totally online, as they were at other institutions, but according to Dubbeldam, reviews are job interviews, and it's much harder to network on a Twitch livestream. (SCI-Arc, perhaps unsurprisingly, turned its annual Spring Show into a monthlong public Twitch exhibition paired

with a Zoom dance party.)

Phil Bernstein, lecturer and associate dean at the Yale School of Architecture, said that although faculty are doing their best to accommodate students, they "report having to invest significantly more time and energy to create, teach, and manage courses and student relationships online." "I think our students have done remarkably well completing their work," he added, "but I'm sure the isolation and uncertainty is taking a toll."

Kyle Miller, associate professor at the Syracuse University School of Architecture (where students used Zoom and Conceptboard, another tool for sharing visuals), agreed. Miller wrote that the less-than-ideal shift to remote learning was balanced by smooth end-of-semester reviews and that "chat rooms where visual references and web links can be shared in real time, and the ability to incorporate a more geographically diverse set of critics, are aspects of the virtual review that I suspect we will attempt to maintain after returning to residential instruction."

"We made it work" seemed to be the general consensus. Some professors were adamant that the move to remote learning did not affect the quality of students' work, while others suggested that their students' designs were about two weeks behind where they normally would have been at the end of the semester. The biggest common denominator wasn't a question of whether things would work technically—despite hiccups

with missed office hours and software licensing—but whether students were getting the emotional, mental, and financial support they need to weather a global crisis.

At the University of Buffalo Department of Architecture, Joyce Hwang, associate chair and director of undergraduate and graduate studies, reported that the school has launched an entirely new career advisement system to help shepherd recent graduates through the devastated economy. That included hiring a new career advisement coordinator and reaching out to a network of alumni, both independent practitioners and those working at large firms, to hold workshops and online meetings and take questions from students. Hwang also noted that the school had started a student emergency fund to help relieve some of the financial burdens its students might be facing.

While schools said that the spring 2020 semester went relatively smoothly, some students have expressed different opinions. A group of Yale School of Architecture students previously published their grievances on AN's website. Students at both the University of Miami and Cornell's College of Architecture, Art, and Planning sued their schools in April, claiming that they should be reimbursed for the tuition they paid that, in part, was supposed to go toward studio time. More generally, the 688,000-member-strong "Zoom Memes for Self Quaranteens" Facebook page has become a popular place for students to post about how tired, upset, and worried about the future they are.

Now the biggest question on everyone's mind is, will universities be able to hold classes in person for the 2020-2021 academic year?

"This semester only went well because half of it was in person," said Dubbeldam, noting that Penn wouldn't follow the European model that forsakes shared lectures and studio time. Penn is preparing contingency plans to ensure fall semester will take place in person in some form or another, including the possibility of moving the first day of classes back from September 1 to October 1 if the risk of meeting in person remains too high.

Yale is following what scant federal guidelines for reopening have been provided, while Syracuse, Harvard, and a number of other schools are still studying whether they will reopen in person, delay classes, or hold the fall semester partly on campus and partly digitally. Buffalo is a state school, and its reopening depends on the decisions of New York's governor, Andrew Cuomo. Administrators at all the schools AN contacted emphasized the importance of educating students in person, and especially how vital it is that students exchange ideas freely without being stuck behind a screen. But with the COVID-19 crisis still raging, administrators might not have much of a say in whether and when campuses can fully return to normal. Cambridge University has already thrown in the towel and announced all of its lectures will be online-only until the summer of 2021. **Jonathan Hilburg**

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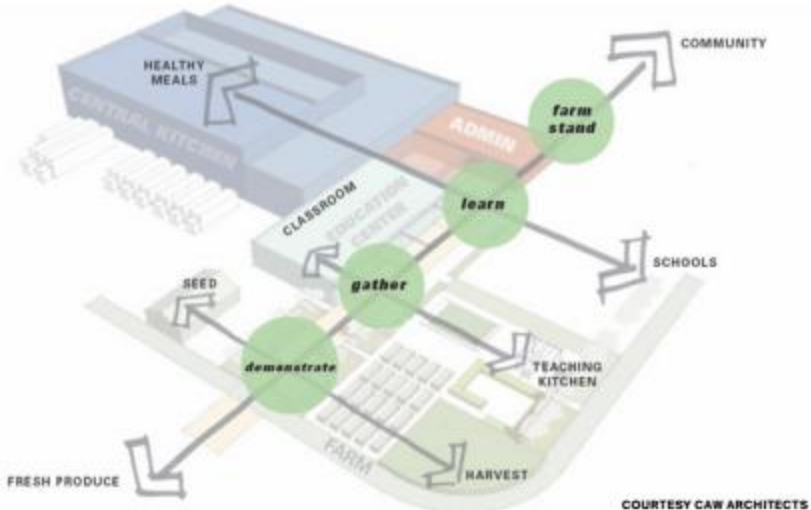
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CAW Architects' new educational kitchen lent a hand to the Alameda County Community Food Bank.



Just as the COVID-19 pandemic is forcing people to work in different ways, it's forcing buildings to work in different ways, too.

The Center, a new culinary and educational complex in West Oakland, California, designed by Palo Alto-based CAW Architects and operated by the Oakland Unified School District (OUSD), was in the final phases of construction when the pandemic hit. Work had to be paused, but rather than see the nearly completed project go unused, the district quickly got permission for the Alameda County Community Food Bank to operate from the building while the organization adapted its facilities to accommodate social distancing. With the Center's 32,000-square-foot kitchen as its base, the food bank was able to distribute 3,000 meals per day for several weeks this spring.

After almost a decade of planning, the Center is tentatively scheduled to open for students and kitchen staff this fall as part of OUSD's long-standing, districtwide initiative to promote learning in tandem with health and wellness.

"You have to be able to feed the stomach to feed the brain," said Irene Reynolds, executive director of nutrition services at OUSD, while explaining that thousands of the district's students don't have reliable access to healthy meals outside of school

because of economic, social, and geographic barriers.

By centralizing food preparation in one giant facility, OUSD will be able to prepare healthier meals at a larger scale (the expectation is 30,000 per day) than is possible in a scattering of smaller kitchens across its 87 schools. But it didn't just want to create a space for food prep—it wanted a space where students could also learn about nutrition and agriculture, as well as gain professional skills.

"Conceptually, those are totally opposing programs," Brent McClure, principal at CAW, said. "How do we weave those together so that the students can see where food is coming from and how it's being produced, and then the people who are working there never lose sight of who's eating the food they're making?"

CAW's solution creates direct connections between teaching areas and professional kitchens under a single roof. The single-story, utilitarian building—which uses 35 percent less electricity than comparable structures, thanks to extensive daylighting, carbon dioxide-based refrigeration, and waste heat recapture systems—splits a four-acre site between kitchens and loading docks on the west side and classrooms, offices, and about a half acre of gardens on

the east. Between the classrooms and the gardens, a long, linear trellis with wooden slats shades an interstitial terrace where the indoors and outdoors can meet. Roll-up doors allow the classrooms to open onto the canopied space.

"There's no longer this notion of classrooms in a row, and students sitting in boxes all day," McClure said, drawing on CAW's substantial experience in educational design. "It's about bringing that outdoor experience into a classroom."

Classes will be able to use the raised planting beds in the gardens, designed by Berkeley-based Bay Tree Design, to teach students about agriculture and nutrition. The kitchens on the other side of the classrooms create the opportunity for high school students to learn food preparation skills in a professional facility.

All of these plans were disrupted as the coronavirus pandemic was declared in March, when schools closed and construction stopped. While district officials scrambled to get meals to students in need outside of cafeterias, a network of community groups came together to feed not just children but adults as well.

"When you have kids who have food insecurities, you have adults who have food insecurities," Reynolds said. The pandem-

ic was exacerbating those insecurities while also making it harder for groups to resolve them. Meal distribution efforts were hampered by social distancing requirements, which meant that many small facilities couldn't immediately be used at the volumes that were needed. "But luckily for Oakland," Reynolds said, "we have a really wonderful community that rallies together when these things happen."

The Center's construction manager, Cummings Construction, and OUSD got authorization from the local health department for Alameda County Community Food Bank to temporarily inhabit the premises until the organization was able to find a more permanent solution. The building's generous dimensions meant that workers could easily follow social distancing guidelines while distributing thousands of meals.

"You never know how these projects are going to turn out," McClure said. "Users will twist things and take advantage of exciting new things. It's really heartening to see this project come together and the partnerships they were able to form."

Jack Balderrama Morley

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A photograph of a modern building with large glass windows and doors. The building is illuminated from within, and the Vitrocsa Invisible Wall System is visible on the exterior. The image is credited to GOLDBRECHT.



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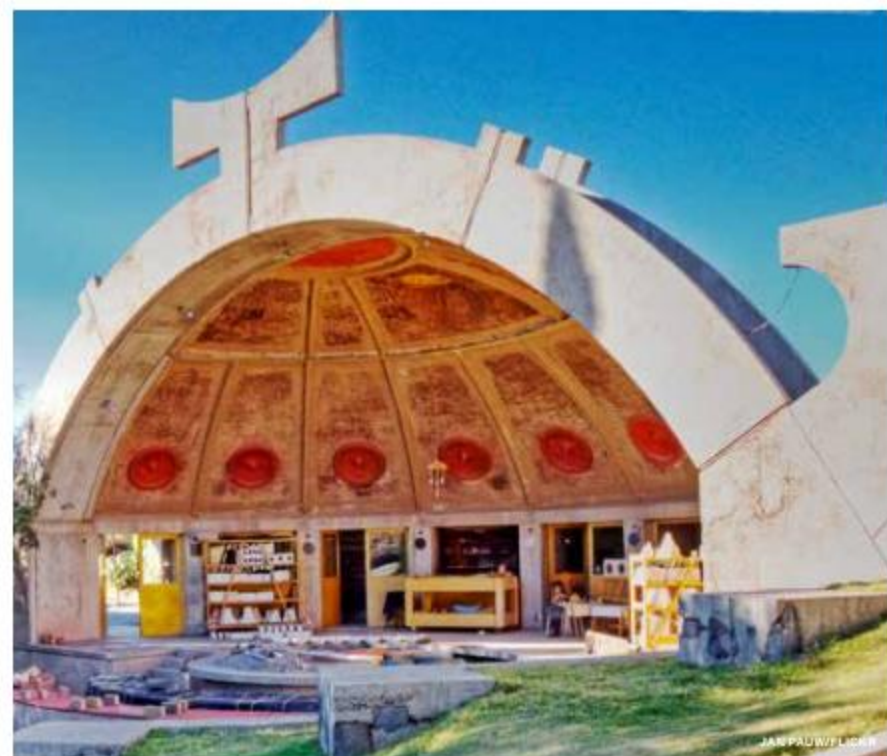
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Pick Up Sticks

The School of Architecture at Taliesin will adopt a new moniker and relocate to Cosanti.



The Ceramic Apse at Arcosanti, one of three iconic halfdomes at the site.

AN has learned that the School of Architecture at Taliesin will change its name and move summer classes to Cosanti and Arcosanti, with hopes of making Cosanti its permanent home.

The move comes after a protracted back-and-forth with the Frank Lloyd Wright Foundation that spilled into public view in January, when the school announced it would be closing after 88 years of operation. Following an outpouring of support from alumni and funding commitments, in early March the school's board reversed its vote to close, but the institution will still need to vacate both Taliesin campuses—Taliesin West, in Scottsdale, Arizona, and Taliesin East, in Spring Green, Wisconsin. Moreover, it can no longer use *Frank Lloyd Wright* or *Taliesin* in its name, though it will retain its accreditation and students. The last time the school changed its name was in 2017, after it split from the foundation as part of the accreditation process. After July 31, any remaining association will be formally severed.

So where will the college go from there? In a recent call, Dan Schweiker, the chairperson of its board of governors, and Jon Kelley, a lawyer at international law firm Kirkland & Ellis, which is representing the school, laid out to AN where things are headed.

"The school will survive and have a bright future," said Schweiker, but not without some restructuring. For the summer semester, classes are in the process of moving to Paolo Soleri's former studio and residence, Cosanti, just a few miles from Taliesin West, as well as to Arcosanti, the quasi-commune Soleri founded north of Phoenix. (At the moment, courses are being taught remotely because of the ongoing coronavirus pandemic.)

The institution is working to get approval from the state of Arizona and the Higher Learning Commission to hold in-person classes across the two Soleri projects on a permanent basis, although Schweiker also raised the possibility of renting space back

at both Taliesin campuses for special occasions. Should it stick, the change of address will make sense; Taliesin and Cosanti share a hands-on ethos, and space would be reserved on Cosanti's five-acre Paradise Valley property to continue Taliesin's long-standing program in which students build shelters.

As it considers whether to approve the relocation, the board is experiencing turnover of its own and taking on a more international bent. The administration will shift as well. Joining the board will be the following:

- James Benson, president and CEO of Benson Botsford and former president and CEO of John Hancock Life Insurance
 - Bing Hu, founder and president of H&S International (Taliesin alumnus)
 - Chris Koch, chairman, president, and CEO of Carlisle Companies
 - Qingyun Ma, professor and former dean at the School of Architecture at the University of Southern California and founder and design principal of MADA s.p.a.m. (Taliesin alumnus)
 - John Sather, managing partner of SWABACK Architects + Planners (Taliesin alumnus)
 - Victor Sidy, managing principal of Victor Sidy Architect (Taliesin alumnus)
- Curator and critic Aaron Betsky, who departed as the school's president in May, will be temporarily replaced by current dean Chris Lasch, of Aranda/Lasch, until a permanent replacement can be found. As for what will happen at the Taliesins, the foundation, which claimed that financing the school prevented it from maintaining the historic structures it's responsible for, will offer courses at both campuses, as required by Frank Lloyd Wright's will. What form this will take is unclear, though during the pandemic the foundation has put out virtual classes for families and students in kindergarten through 12th grade.

Jonathan Hilburg

Our Mass Timber Future

Opinion: The president of the Carpenters' District Council of Ontario gives us the upshot of the canceled Sidewalk Labs Toronto project.



The waterfront district promised to make expressive use of mass timber.

In May, Alphabet's Sidewalk Labs announced that it would cancel its high-profile Quayside project because of "unprecedented economic uncertainty." The statement marked the end of a three-year initiative to create a living, urban "testbed for emerging technologies, materials, and processes."

Reversing the traditional order of city planning, Sidewalk Labs imagined building a new urban district on Toronto's waterfront from the internet up, with sensors and other data collection infrastructure embedded in the fabric of a large city block. The ambitious development—with an area of 2.65 million square feet, including 1.78 million square feet of residential space—was to be built entirely from mass timber; indeed, the extensive use of modular cross-laminated timber (CLT) and glue-laminated timber (glulam) was a chief selling point of the design (by Heatherwick Studio and Snøhetta, using a kit-of-parts developed by Michael Green Architecture).

But the project's cancellation changes little in regard to mass timber's future. Indeed, the true legacy of the Sidewalk Labs Toronto project lies not in its smart-city applications for human interaction, monitoring, and algorithmic anticipation, but with that much older human activity—wood construction. Mass timber represents a massive step forward for design, carbon-capture goals, and green efficiencies. CLT is as strong as steel and offers the same—or better—fire-retardation properties. It also allows for faster builds (35 percent quicker than typical time lines), which avoids tying up city streets with cement mixers.

From an aesthetic perspective, Quayside was a test case for what's possible with this innovative material. In the architectural renderings, burnished, almost glowing CLT beams are manipulated into every possible configuration, demonstrating mass timber's range of applications: skyscrapers, mixed-use developments, higher

education. It provided a glimpse of an alternative to the all-over concrete that characterizes our contemporary cities, showing communities at work and play against a backdrop of a greener, more open urban canopy of wood and transparent glass.

And lest it be forgotten, the project spoke as broadly to the neighborhood it would serve as it did to the potential of mass timber. Among its stated "community benefits" were employment opportunities for youth, women in construction, and new Canadians, as well as the retraining of military veterans. Beyond its own Toronto waterfront environs, Sidewalk Labs had planned to invest in a mass timber factory that would have employed Indigenous communities in northern Ontario.

We will never know if the promised community integration, social responsibility, and 2,500 new jobs would have materialized exactly as imagined. But all these ideas can be picked up by other developers in Toronto and elsewhere. The legacy of the concept is still there. And so is the notion of creating a mass timber manufacturing sector from scratch in Ontario.

Quayside could have been an urban fountainhead of Canadian building culture and mass timber. Already, it punched above its weight in terms of ambition and connectedness; despite what has been said on the internet, the project as a whole was listening to and observing the world around it—what it could change for the better and where it could adapt to needs.

Those principles—the high-concept intellectual legacy of Sidewalk Labs, along with the advent of mass timber construction—have been bequeathed to the carpenters of Ontario and our other city builders here. Mass timber has not gone away. It is just getting started.

Mike Yorke is president and director of public affairs and innovation for the Carpenters' District Council of Ontario in Woodbridge.

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Deem's founders Nu Goteh, Alice Grandoit, and Marquise Stillwell



Deem's interviews with Yemi Amu and Milton Curry

Sitting Down with Deem continued from front page That mindset, that design is an expansive process that involves more people than professional architects and designers, informs the rest of the issue. In other articles, planning and geography scholar Hilary Malson writes about community land trusts as a tool for Black liberation; Grandoit and Goteh interview University of Southern California School of Architecture dean Milton S. F. Curry about the meaning of social practice; Cruz García and Nathalie Frankowski of Pittsburgh-based WAI Architecture Think Tank analyze social responsibility in architecture; and food writer Korsha Wilson profiles “Brooklyn’s oldest aquaponics garden.” It’s an energizing mix of topics, voices, and approaches, all richly illustrated in a crisp, colorful layout. In May, AN’s managing editor, Jack Balderrama Morley, talked to Goteh, Grandoit, and Stillwell about the journal and how design can better serve cities and the people who live in them.

This conversation has been condensed and edited.

AN: How do you think about the audience for Deem?

Nu Goteh: It’s an intersection of people who are active in various design practices, but we’re also trying to bring people who don’t consider themselves designers into design-based conversations. Which is fairly broad—but there are so many people who are interested in design but feel like they don’t have a voice and may not have the power to change things in their world. We’re trying to say that there are ways and tools that you’re capable of using, but you just haven’t been presented with them. Part of the editorial approach is to highlight different voices within different design practices to be able to reach beyond design and pull in “non-designers.”

Alice Grandoit: There are a variety of publications that touch on design in a way that can be engaging, but I think a lot of them are exclusive to people who might be trained designers. I had to question if there were other points of view that weren’t being considered or other people who were realizing work that reflected more of my environment.

AN: You’ve discussed before how Deem is about building more thoughtful conversations in design by listening to communities and emphasizing that design is a back-and-forth process involving many people. So much of design now, though, seems to be about image and oriented toward Instagram. Do you think design could use a redirection?

Marquise Stillwell: Design fell in love with itself and forgot why it was actually a practice that we all love. We are trying to get back to what it means to design for people. What does it mean to design for humans and not just design to make shiny objects and the next thing that you can put on Instagram? I think design’s about people, and it’s really difficult sometimes to actually talk about people because we’re in a system right now where people don’t matter. We can see it in our political system, and I do believe that we are pushing against that in the right direction because people are saying, “Hey, I matter! What about me?” Design fell in love with itself and forgot about the people.

AN: Looking forward, it can be hard to be optimistic. Are you all optimistic about the future of design?

NG: I’m optimistic. Alice and I were having a conversation with a young person who felt like, “Man, I never saw my-

self as a designer, and it wasn’t until I started entering different spaces that I realized that the work I had been doing and then facilitating is design, in a form.” And that person was excited that Deem was representing a space for that. I’m excited to see more people like that realizing the potential of design from their own perspectives.

AG: I’m interested in that and then also design returning to being a deep listening to the wisdom of our environments. There’s a lot of knowledge that exists around us in nature that I think is really coming to light now, and I’m hoping that we can tune back into that and let design feel a little more intuitive and driven by the wisdom that we all have.

MS: I do see that there is a growing mindset that in order for design to survive, it has to have diversity in thinking. It’s not just the people we’re designing for, but it’s the people participating in design that matter. That’s what makes me excited about our field and our future.

AN: I’ve seen criticisms of “design thinking” lately, particularly in urban planning, where outside “experts” drop into a city and use design thinking in a top-down way to rework the fabric of a city. Do you think there is a way for design thinking to move past that criticism?

MS: I think the big point that you’re reaching for is that when you think about simple things about culture you start to do ethnography work. It’s very challenging if the person who’s doing the research has no understanding of what the culture they’re studying represents and dismisses that there’s even the existence of a culture in a neighborhood. We have to bring in individuals who have the tools to understand.

NG: In my experience, the best designers and the best strategists don’t really even see themselves as designers or strategists. Where I find value is in filters. We all have filters by way of our lived experiences, and you can have all these frameworks and different research methods, but then once you get that raw data, that raw data has to be synthesized. And the way that you synthesize it has to go through the filters of your lived experience. Design thinking can only go as far as the people participating in it, so without having a diverse enough group of people with lived experiences and different filters, you start to get the same answers, and it doesn’t really matter how many different processes you go through—you still have the same output. Part of the solution is to get different people with different filters to leverage existing processes, but then also create their own processes and be able to share those processes, so that then we start to get nuanced output.

MS: The other thing is that design has tried to use traveling or bringing in experts as a proxy for that. But you can’t just go and travel and experience [one place or city] and believe that you’re an ethnographer, that you’re actually going to inform how [another place or] city is going to be built based on the fact that people who live there resemble the people you traveled to go see. You actually need to bring those people into that process from the beginning, and they need to be a part of the tools; they need to be a part of the framework to actually exercise the best solution. So, that’s the next step of where design has to go.





Architect Lyssa Washington tends the soil at the Philando Castile Peace Garden in Falcon Heights, Minnesota.

Thoughts from the Ground continued from front page Navigating devastating loss of lives and livelihood due to COVID-19, just as we were waking up from the slumber of the last squeaks of winter morphing into spring. Spring disappearing in a haze and eager anticipation of the reopening of Minnesota, finding we were all a little scared, a little too nervous, to congregate in ways we anticipate every year. And then, the powder keg of racial injustice goes off—the tipping point of tipping points—and we find that it is bigger than us: fear, anger, frustration. We rally for change, peace, and justice. And it spreads—city to city, state to state, country to country. Please let this time be different.

I found myself where I needed to be much of last week. It provided my hands movement, my mind clarity, a peaceful community, and reminded me where we have been and how much further we have to go. Almost five years ago, Philando Castile's murder brought the darkness to our doorstep; last week I was tending the soil at what will become a peace garden in his honor. Out of the ashes, a phoenix arises. This has taken hard work and dedication by his family and the community. We now find ourselves at threshold of more work, more heavy lifting to push the agenda so that symbols of tragedy and horror can make way for peace and progress.

I asked several people in our MSP NOMA family to provide thoughts on how we as designers and people of color can work on

fortifying the legacies in brick and mortar on behalf of the small-business owner, the streets we live, work, and play on—what role can we play at shifting the narrative from ash to phoenix? How can we reimagine a world where the systemic oppression is gone from its physical form as we try to remove it from every other aspect of our collective beings? How do we go about creating space reflective of where we are going and not where have we been?

"Say something about the importance of rebuilding Black-owned and minority businesses that have been damaged and how we can support that." "Say something about how communities that were already hard hit by COVID-19 are now suffering additional losses." "Say something about how our communities are grieving because of the systems in place that work against us." "Urge our professional and business allies to join and support us as we prepare to rebuild." "Make the injustice of George Floyd's murder our focus, NOT the riots."

In order to bring about change, we need to call IT out, ALL OF IT. This is how many of us (more people than you think) walk through our day-to-day lives. You may not see it in your coworker, the guy at your gym, the woman at the coffee shop. And please note, sometimes—actually, often—we are the ONLY one in the proverbial "room" and having to carry this load. Why is melanin a cross to bear?

—Lyssa Washington

decades of pent-up frustration. being subjected to a white supremacist system that is unresponsive to the basic human needs of far too many.

police responding to our protesters with tear gas and rubber bullets while empathy is shown for armed white supremacists and idiots demanding haircuts at the governor's mansion and capitol.

Jamar Clark ... and lies ... and more tear gas.

Philando Castile ... and acquittal.

Ahmaud, Breonna, and far too many names to recount here ... over the years and across the miles.

"Minnesota Nice," microaggressions, disrespect, and second-class citizenship that we are subjected to on a daily basis.

white privilege and weaponizing of whiteness against black bodies ... and law enforcement being complicit in this process.

acceptance of a permanent black/brown/red underclass in this community and across the country.

the stress of covid-19 and the disproportionate suffering and tens of thousands of deaths in our communities.

our disproportionate role as essential workers at risk so that others can shelter in place comfortably.

the legacy of 400-plus years of slavery and state-sanctioned terrorism and physical and economic violence against us ... and the summary dismissal of even the concept of reparations for any of it.

this is a shitty place to be, and yet it is exactly where we are.

i am disheartened, disgusted, and numb beyond what took place last night, beyond the trauma of the televised snuff film/execution of a man i knew the day before yesterday, beyond the stress of exemplifying black excellence in places that secretly despise me, and the pressure of preparing two beautiful black boys for the reality that society will surely kick them in the teeth and may attempt to murder them for the crime of simply existing here.

i am sick and angry too ... and very, very, tired.

—James Garrett Jr.

Lyssa Washington, Assoc. AIA, NOMA, is the president of MSP AoA NOMA and project manager at 4RM+ULA.

James Garrett Jr., AIA, NOMA, is a founding partner of 4RM+ULA and an AIA National 2019 Young Architects Award winner.

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Building a Just Community

Minneapolis architect Sam Olbekson reflects on the protests over police violence and systemic racism that gripped the city in recent weeks.

The murder of George Floyd under the knee of one of our city's police officers has outraged and deeply saddened the Native American community in Minneapolis. It is a painful reminder of an ongoing crisis of structural racism and oppression that directly impacts Indigenous, African American, and other communities of color daily. It is a painful reminder of incredibly deep wounds that are not healing.

Our communities share Minneapolis, and we share the Minneapolis Police Department. The Native American community in Minneapolis is no stranger to police violence and structural racism. From historical government policies intended to exterminate Indigenous populations to the subtlest forms of institutional racism perpetuating societal inequities today, the Native American community has survived by resilience and through uprisings and collective action. A murder committed against a fellow citizen by a police officer is not a time to be silent or complacent as individuals, as a community, or as a profession.

As a Native American community member and architect watching the neighborhood I grew up in burn in a social uprising, I am asking myself how our profession will respond to both the destruction and the murder. What sustained, long-term actions will our profession take to address the core issues and underlying systems in place that have allowed our society to accept the status quo? I know architects will swoop in to help clean up the aftermath and design the buildings that will replace those that have burned down. That is a good thing. But are we asking the difficult questions and challenging our own biases? Are we tackling the core social issues as a profession to initiate true structural change? Or will we essentially just rehash the same old design thinking of a broken system?

Is structural racism an issue for architects to even address? Property damage and violence are inexcusable, and the communities affected by the events of the past weeks will need our services to rebuild. But perhaps the real change we need as a society will come from the committed institutions and community members who understand that design, people, buildings, neighborhoods, infrastructure, culture, opportunity, equity, and justice are all inextricably linked. That is architecture. Our profession must not only participate but lead a sustained dialogue.

As I have watched the events in my neighborhood unfold, I am reflecting on my own role and professional responsibility as a Native American architect working to explore issues of equity in community-building. Over the past decade I have been involved in efforts to revitalize a stretch of urban fabric along Franklin Avenue in South Minneapolis that has been the center of one of the largest urban Native American communities for over 50 years. Our efforts are transforming what had become a slowly decaying urban neighborhood into a safe and vibrant cultural destination called the American Indian Cultural Corridor. We are exploring ways to reimagine inventively what the heart of our community will be and investing in organizations and projects that serve our community and bring it together.

One important recent success story is MIGIZI Communications, a 40-year-old



COURTESY SAM OLBESON



COURTESY SAM OLBESON

nonprofit organization nurturing the development of Native American youth in the city. I am a graduate of the program myself and it has been an important part of my life since I was in grade school, in the Phillips neighborhood of South Minneapolis. The organization recently purchased and renovated a small building after a long capital campaign and moved to its new location last fall with a ceremony and community celebration. I was honored to design the space as a pro bono effort to say thank you for the personal impact MIGIZI had on me as a youth. It is full of the energy, hope, and spirit of our community's future.

MIGIZI Communications' building happens to be located one block away from the 3rd Precinct police station, which was at the heart of the initial protests over Floyd's murder in South Minneapolis. The building was not targeted specifically, and no one was injured, but embers spread from a nearby fire and destroyed the building overnight. All of MIGIZI's equipment and supplies in the building were lost. This is a devastating loss to our community, and we are committed to rebuilding.

Numerous other businesses, buildings, and community resources were destroyed or damaged all over the city of Minneapolis. Each of these institutions and neighborhoods also has an opportunity to reimagine as they rebuild. As our profession participates in this process, we have an unprecedented opportunity and unquestionable responsibility to explore new ways of design thinking that can challenge the structural systems previously in place. How will we approach this as a profession? How can we rethink the way we design buildings and neighborhoods to encourage equity? How can we celebrate cultural identity and also honor diversity? What does a world not based on the status quo look like?

The pain and anger we are expressing pub-



COURTESY MIGIZI COMMUNICATIONS

Top: The offices of Migizi Communications, a nonprofit nurturing the development of Native American youth in Minneapolis. **Above:** Migizi's work in the Minneapolis area

licly as individuals and as allied communities of color is rooted in the shared experience of police violence and the long history of structural racism that communities of color see and live every day. Our community is calling for swift action, stronger and positive partnerships, and sustained change within the Minneapolis Police Department in solidarity with the African American community. We are demanding permanent change.

I challenge our profession to do the same. We cannot go back to a normal that was based on a broken system. Everyone who has witnessed what happened to George Floyd and the destruction in Minneapolis and other communities around the country is now forever responsible for doing

something different than before. We are responsible for transforming and healing our communities, promoting unity and equity, and joining a shared battle to dismantle systems of oppression. The wounds of systemic racism, sexism, classism, and every form of destructive bias hurt us all, even if you may have a privilege or blind spot that doesn't allow you to see it. Justice and equity are part of any architecture worth doing.

Sam Olbekson, AICAE, AIA, NCARB, is a citizen of the White Earth Nation of Ojibwe, immediate past president of the American Indian Council of Architects and Engineers, CEO of Full Circle Indigenous Planning, and principal of Cuninghame Group Architecture.



The Spaceship Has Landed

SHoP Architects scales up digital design-to-fabrication and project tracking at the Botswana Innovation Hub.



The Botswana Innovation Hub's undulating canopies echo the region's landscape, and courtyards break up the project's mass.

Architect: SHoP Architects
Location: Gaborone, Botswana
General contractor: Zhengtai, Caitec
Structural engineer: WSP (South Africa), Pula Consultants
Landscape design: GREENinc Landscape Architecture + Urbanism
Facade engineer: Sutherland Engineers
Facade subcontractor/fabricator/installer: World of Windows
IGU assembly: C&C Safety Glass
Mechanical and plumbing engineer: North Atlantic Engineering Consultants
Electrical engineer: Systems & Services Engineers
Glazing: Saint-Gobain

A veritable spaceship has landed on the outskirts of the Botswanan capital city of Gaborone, its coppery carapace glinting in the unrelenting sun. This is the Botswana Innovation Hub, and while its form evokes the stylings of *Battlestar Galactica*, it is very much of this world.

SHoP Architects was awarded the project in 2010 following an international competition, the result of an earlier directive by the Botswanan government to transition its economy from natural resources to intellectual capital and services. In addition to holding symbolic power for the nation, the Hub represents the culmination of SHoP's research and practice in fully automated direct-to-fabrication and project-tracking techniques largely initiated at

the Barclays Center in Brooklyn a decade ago. The approximately 270,000-square-foot complex, which broke ground in 2014 and is due to open next year, seems to hug the contours of the southern African veld. Three low-slung volumes, interlinked at multiple points, are clad with projecting bronze-colored anodized aluminum panels. Slender ribbons of silver-coated window walls course between, and are shaded by, these aluminum canopies. The facility incorporates both passive and active building systems, in addition to landscaping at both the roof canopy and ground level—strategies that have made it Botswana's first LEED-certified project.

Since its founding in 1996, SHoP has consistently pushed for the integration of automotive and aerospace engineering techniques, spanning from micro to macro scales, into the architectural design process. Central to this approach is the use of 3D design and engineering software, such as Dassault Systèmes' 3DEXPERIENCE platform, to generate a comprehensive digital library of components customizable to individual projects. For John Cerone, SHoP principal and director of virtual design and construction, the use of such tools facilitates "projects as portfolios of processes from macro massing down to the component level—traceable and trackable in real time from design, fabrication, transport, and installation."

Although the upfront investment in such a computationally intensive methodology is significant, the payoff, suggested Cerone, lies

in the relatively seamless transfer of detailed information to both the manufacturer and the contractor. After design work was completed, SHoP exported a digital sample of a facade panel to project bidders, who then fabricated prototypes while inputting their own recommendations in accordance with the digital model's guidelines. The fabrication contract was ultimately awarded to the South Africa-based fabricator and installer World of Windows. With digital guidelines in hand, local partners were able to manage the bulk of the work on-site, requiring little physical oversight from SHoP's team. (The New York firm maintained a tight crew of five on-site, as well, first in South Africa, then in Botswana.)

It is important to recognize the sheer complexity of the facade system. There are 3,000 panel units with 1,700 unique panel types; all are approximately 4 feet wide and reach depths of 6 feet 6 inches and heights of 14 feet. The units are divided into 60 separate "families" or templates, each containing 500 similar panel types. In total, approximately one-million parts make up the enclosure composition. The panel substructures are fixed, via a series of integrated clips, at the window wall or at the slab edge of the structural wall or steel canopy.

Following fabrication in Cape Town, South Africa, the panels were shipped approximately 900 miles north to the project site, where, in the parking garage beneath the Innovation Hub structure, the general contractor and

facade installer oversaw their final assembly. Each of the prepackaged panels arrived with detailed step-by-step instructions in the form of axonometric diagrams—think IKEA, only without the difficult-to-pronounce Swedish nouns.

During installation, the facade components were tracked in real time and digitally scanned for comparison with a cloud-based digital "twin." The technique allows for the immediate identification of dissimilarities—resulting from either incorrect installation or other miscalculations—and their equally immediate resolution through on-site adjustment.

What are the industry implications for this technology-heavy approach to design and construction? For SHoP founding principals Christopher and William Sharples, the objective is to reestablish the relationship between designer and builder, harking back to the tradition of master masons or the syncretism of architecture and industry advocated by the Bauhaus. They added that projects and their fabrication effectively function as white papers to be challenged and built upon through ongoing feedback and collaboration. At the Innovation Hub, this productive exchange was limited to one architecture component—the enclosure system—but the firm hopes to expand it across all phases of construction. It's a development, said the Sharpleses, that would significantly reduce waste associated with construction and even deter exploitative labor practices. **Matthew Marani**

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SHoP Architects developed the facade system's design as a customized kit-of-parts. The pieces were fabricated in South Africa, shipped hundreds of miles north, and assembled and installed on site. Every step of the process was digitally tracked and monitored from New York.

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Performance Matters

Matter Design looks to the past to design a more animated architecture.

The Cambridge, Massachusetts-based practice Matter Design, directed by Brandon Clifford and partners Jo Lobdell and Wes McGee, is rethinking what performance and sustainability mean in architecture.

"In the past few years the conversations we were having were falling outside of the conventional discipline of architecture," Clifford said. "If you start to talk about sustainable building practices, it's difficult to have that conversation, because the domain of architecture is restricted to the form and materials of the built artifact, but it's not within our domain as architects to think about the sourcing of the materials, the transportation, the logistics of assembly, or the demolition of those buildings." Matter began to consider the life and afterlife of the materials it used from the beginning of the design pro-

cess—and from an unexpected angle: "It became clear to us that we should start engaging this other side of practice, which has to do with performance, theatricality, and play as ways of interrogating why it is that we're building the way that we do."

In this vein, the installation *Walking Assembly*, made of a series of massive masonry units designed with the Mexican building materials company CEMEX, uses mobility and performance to explore sustainability. "We're thinking about creating artifacts that are easy to assemble—which means they're also easy to disassemble, so that they're not relegated to landfills," Clifford said about the project, which won an honorable mention in *The Architect Newspaper's* 2019 Best of Design Awards.

The seeming simplicity of *Walking Assem-*

bly's shapes—reminiscent of Incan or Rapa Nui megaliths or the sculptures of Isamu Noguchi—belies the complex operations required to realize such mobile forms. "We've had to engage in a number of experiments that have challenged us," Clifford said. "We do a lot of physical prototyping. We also work through computation strategies."

Matter is taking what the studio has learned working on *Walking Assembly* to a new project with a playful and personable name: *Patty & Jan*. The project, which debuted at the University of Michigan in November, features two interlocking forms that are made of custom variable density concrete designed by CEMEX Global R&D and resemble those of *Walking Assembly*. Patty and Jan—the names of the two blocks—look like the letters P and

J; they balance and bounce into one another, turning construction into a performance realized by the materials themselves. Matter describes the pair as enacting a type of construction that prioritizes curiosity, joy, wonder, and whimsy rather than just economy and efficiency. Patty and Jan build themselves so humans are "liberated" to play with them.

"One of the things we were thinking about was deployability, so that if you have a precast element on the back of the truck, it can show up to the site, and you can release that mechanism, and it can roll off the truck and position itself with some intelligence," said Clifford.

"*Patty & Jan* was an exercise of letting the elements do the work themselves as opposed to being guided by the direct contact of humans."

Drew Zeiba

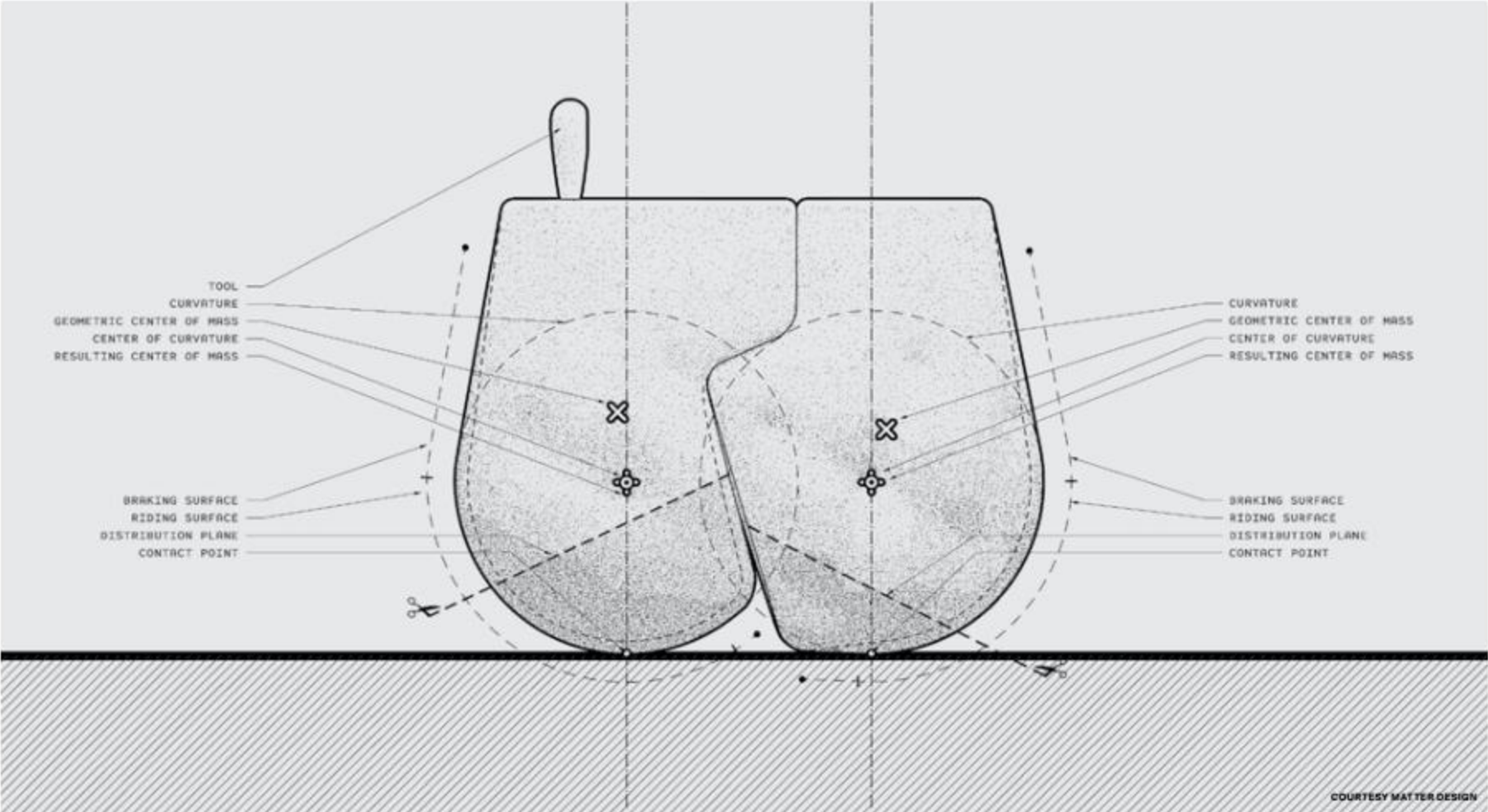
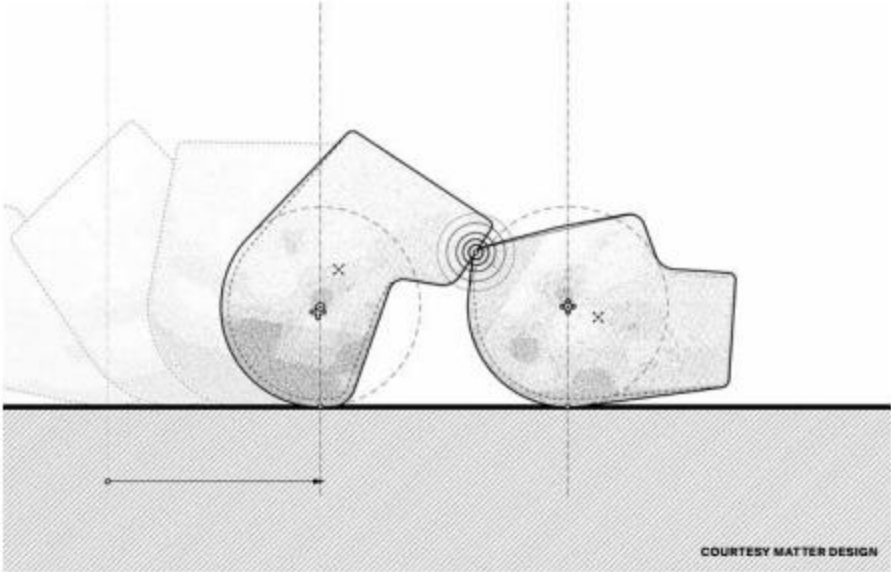
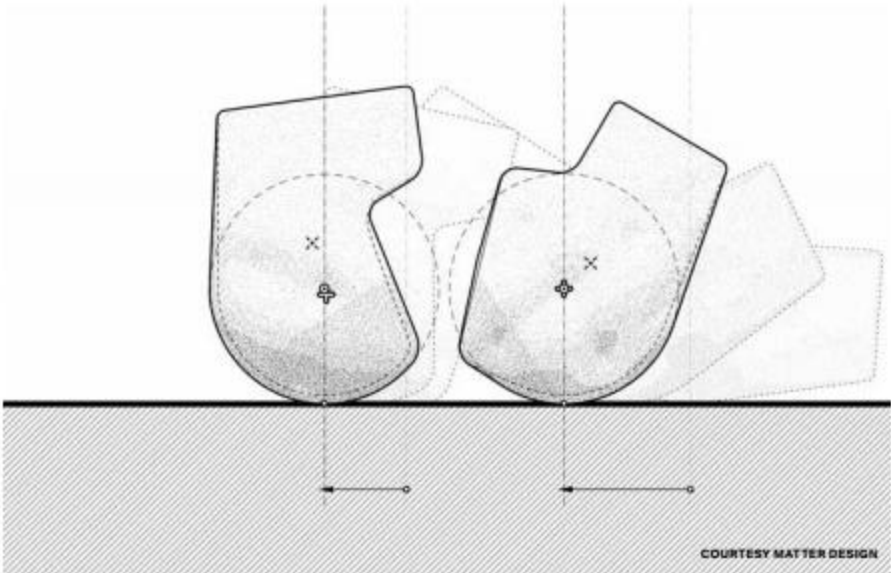


Matter Design followed up its 2019 Best of Design Award-winning *Walking Assembly* installation with *Patty & Jan*, two interlocking concrete forms that can roll into place.

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The two pieces incorporate concrete of varying densities to lower the objects' centers of mass so that they can roll into each other properly.

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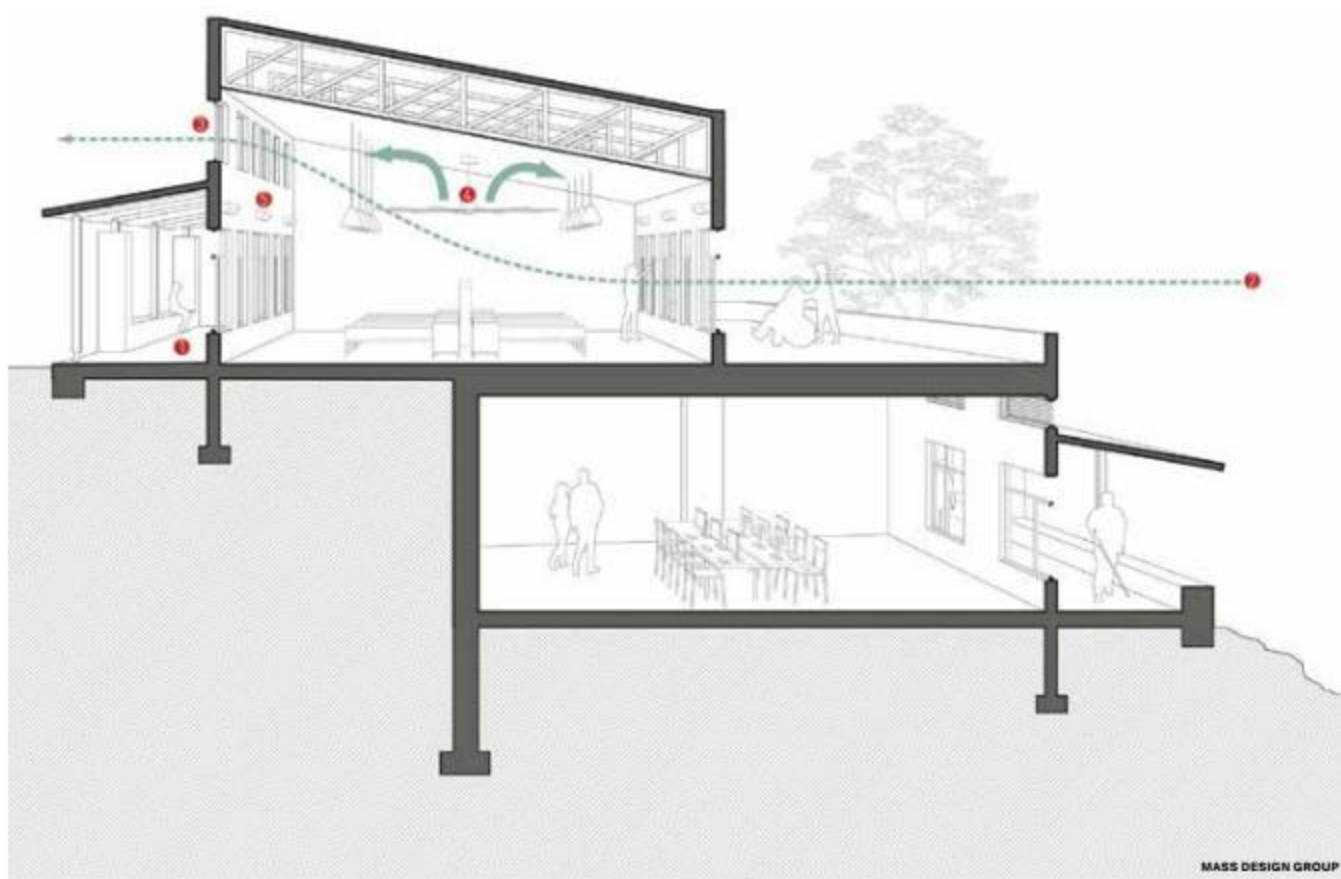
POST- PANDEMIC PLANS

Almost immediately, the novel coronavirus posed challenges to the doxa of conventional urban development. Planning experts—the very same people who have touted the benefits of urban density for the better part of two decades—have begun asking whether the return-to-the-city movement is over. Weeks of closures and quarantine, followed by a gradual reopening of the public and commercial spheres, seem to have robbed the city of some of its erstwhile vitality. And where they remain in force, social distancing and remote working threaten to do in the downtown office once and for all. The following stories were planned during the peak of the first pandemic wave; with the second unfolding before our eyes, they stand to gain in relevance.

MAKESHIFT FUTURES

Research and on-the-fly changes to various spheres of urban life drive design innovation forward amid a pandemic. By Gideon Fink Shapiro

Few firms have been more proactive on the pandemic front than MASS Design Group. The firm has produced several white papers highlighting typology-specific strategies for adapting to COVID-19. **Right:** A cross-ventilation diagram for the paper "Guidelines for Limiting Contagion in COVID-19 Tent Clinics."



The term "turbulent zone" entered architect Paul Lewis's vocabulary during the early days of the COVID-19 lockdown. It had nothing to do with meteorology or protests, but came to mind as Lewis, a principal at New York City-based LTL Architects, began a new research project on the challenges of urban mobility and physical distancing amid the pandemic. At grocery store entrances and other busy thresholds, he noticed, people were queuing up along the sidewalk, dutifully standing several feet apart—and creating a hazard for passersby who also wanted to keep their distance.

"Pedestrian flow up and down the sidewalk is always compromised at the door, which is why commercial entrances are recessed. But now that is exacerbated by more waiting in line, more pickups, and more deliveries coming out. All these activities are being pushed into that threshold and spilling back out to the sidewalk," said Lewis. "We've been calling these areas 'turbulent zones.'"

Lewis is one of a number of quick-thinking architects, designers, planners, curators, and theorists who are undertaking new research to figure out how architecture and design can respond to the COVID-19 crisis. While some urbanists have been criticized for seizing on the lockdown as a springboard for long-standing pet stratagems, these practitioners are attempting to place their creative skills in service to society, at times focusing on the needs of vulnerable populations. They are asking how buildings and cities may need to change in the wake of this pandemic, with an eye to the potential threat of future pandemics.

RETROFITTING HEALTHCARE SPACES

One of the most immediate, practical kinds of research involves rethinking the design of hospitals and pop-up urgent-care facilities, especially in hard-hit urban areas. Boston and Kigali, Rwanda-based MASS Design Group, an architecture firm that has worked on healthcare and infectious disease treatment facilities in Rwanda and Haiti as well as the U.S., has taken the logical but unusual step of partnering with healthcare providers to collect data on how treatment spaces perform under the pressure of a pandemic.

"Design professionals are not at the table all the time, so having those close relationships to be called upon and respond quickly to is a role that the spatial disciplines should be engaging more directly with in future," said Michael Murphy, founding principal of MASS.

In late March, preparing for a surge in COVID-19 cases, Dr. John Bucuvalas, a senior physician and professor at Mount Sinai Health System in New York City, reached out to MASS, with which he had

previously collaborated. He wanted help in studying a series of emergency spatial design modifications that the hospital had already begun to implement, including retrofitting an entire unit and constructing a 68-bed temporary facility in Central Park. MASS in turn brought in Ariadne Labs, a Boston-based health systems research center with which it had coauthored a study on childbirth facilities.

"In healthcare, being intentional about the built environment is sort of a new idea," said Dr. Neel Shah, a director at Ariadne Labs, in a May 12 virtual roundtable discussion hosted by MASS. "Within three days, we were doing the project, which involved letting the architects peer into Mount Sinai using a GoPro camera and Zoom conferencing," added Bucuvalas. This was MASS's second COVID-19-related undertaking, after it advised on the construction of two emergency tent structures for Boston Health Care for the Homeless Program back in March.

Over the course of three weeks, as Mount Sinai went into overdrive treating COVID-19 patients, the team carried out joint research with the aim of bringing challenges to light, identifying effective interventions, proposing a new framework to guide future retrofit and design efforts, and sharing lessons with other hospitals. In addition to poring over video footage, the architects interviewed frontline workers and asked them to color-code floorplans to indicate which areas were infectious or relatively safe.

MASS's resulting report reveals the

challenges of trying to adapt idealized infection protocols to the non-ideal spaces of an overextended urban hospital. It documents interventions such as makeshift negative-pressure isolation rooms, HEPA filters in each room set up to vent waste air directly out the window, IV fluid dispensers and monitors placed in hallways, risk zones identified only by colored tape or film, and designated spaces for donning and doffing personal protective equipment. "Spatial design and awareness can mitigate risk," the report states, but because "hospitals are implementing spatial redesigns on the fly," they may be putting healthcare workers and communities at increased risk.

The report says more research is needed, but it offers several preliminary conclusions: First, enforcing infection protocol in hallways and unit entryways may be as vital as in patient rooms. Second, frontline workers show inconsistent perceptions of risk zones within care units, which could raise their odds of catching or spreading the virus. Finally, visual aids and "design nudges," such as colored markings, can help health workers quickly understand risk zones and perform their duties safely. Amie Shao, a principal at MASS, said the next step is to create a "learning consortium" among health institutions to prepare for future pandemics and thereby help the institutions go "from impacting hundreds of people to potentially impacting millions."

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RETHINKING EVERYDAY REALMS

Another important area of design research concerns the adaptation of everyday realms such as streets, plazas, shops, restaurants, transit stations, parks, and workplaces to the exigencies of distancing. The recent protests against police violence have shown that public space remains vital to democracy and the pursuit of social justice and that systemic racism has long represented a public health crisis. Both the coronavirus and the killing of George Floyd have provoked demands, in differing terms, for safer public spaces.

Gehl, a planning and placemaking firm based in Copenhagen, Denmark, gathers data on the use of public space to persuade city administrators worldwide to build walkable, bicycle-friendly streets dotted with urban furniture. It completed two ambitious surveys during the lockdown. "How do we actively invite people back to public space in a way that is comfortable, safe, and healthy, but also recognizes local conditions or restrictions?" asked Jeff Risom, partner and chief innovation officer at Gehl. "I like to see data. [With it] you can either confirm or bust myths."

With the help of 60 surveyors and a custom-developed digital tool, Gehl observed public life in four cities in Denmark in April 2020. The firm's report offers several "snapshots," or first impressions, of how people were using public spaces under the altered circumstances, including novel behaviors and differences between how women and men tend to use public space socially or alone. The report concludes with ten questions to prompt future design innovations, such as "Which street types, features, and their programming are more conducive" to public life in a pandemic?

Gehl also conducted a global online survey investigating altered relationships to public space during lockdown. Of the more than 2,000 people from 68 countries and 40 U.S. states who responded, approximately one-third stayed at home except for essential errands, while those who did venture outside "relied heavily" on nearby streets, parks, and front stoops. "If safely and creatively reimaged, designed, and managed, our public spaces can be community lifelines—for improving access to essential resources, keeping people fit, and reducing isolation," the firm wrote in a summary of the survey results.

In New York City, architect Paul Lewis, engineer Guy Nordenson, and staff members from their respective firms have begun research on a project funded by a grant from Princeton University. "One of the things that we're trying to do is to make legible some of the issues at play both at the urban scale and at the individual body scale," Lewis said of the ongoing effort. (In early June, Lewis et al. published a draft of the project under the title "Manual of Urban Distance: Strategies for Reconfiguring the City.") Working primarily in isometric view to show measurements in three dimensions, the team has been drawing scenarios to reveal the difficulties and contingencies involved in pedestrians navigating typical city streets while maintaining a safe distance from each other. Part of the problem is that neither the U.S. Centers for Disease Control and Prevention's six-foot benchmark nor

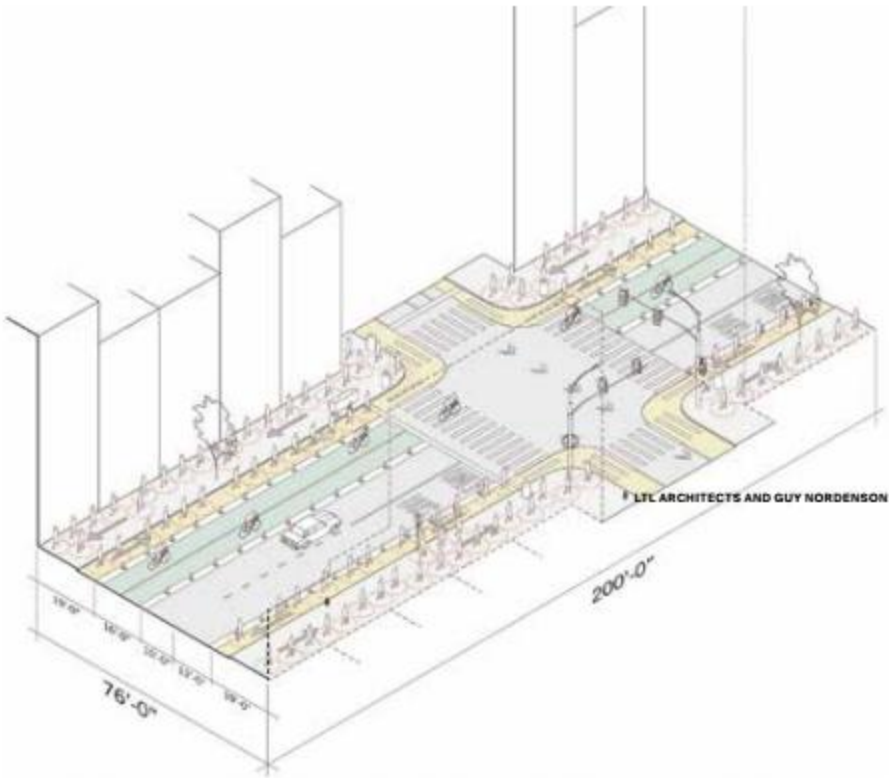
other guidelines proposed in peer-reviewed scientific journals is appropriate to every situation, and they do not account for variable fresh-air circulation or duration of exposure. "It's not some magical distance," Lewis observed. "It's actually a gradient of potential concern or risk. So how do we even map that?"

As the team's preliminary studies show, to maintain a healthy distance from each other, pedestrians on a crowded Manhattan street (100 people per block) would have to move almost in lockstep, i.e., at the same velocity and in only one direction along each side of the street. Perhaps walking and cycling space could be expanded, pavement could be painted, and street furniture could create a buffer between people moving in opposite directions. But even if New Yorkers could be induced to adopt such a robotic march, Lewis's associate Anna Knoell said, they would still veer into each other's space to avoid obstacles like kiosks, tree pits, construction scaffolding, and leashed dogs. Add in the "turbulent zones" of commercial building entrances with lines stretching down the block, and keeping one's distance in public is impossible. "Storefronts are harder to negotiate," Lewis noted, "whereas stoops are allowing a kind of return of social activity because they provide some distance."

School architects, too, are contemplating how to transform learning spaces in anticipation of students' eventual return. Rather than simply biding time until schools can reopen in their familiar form, educators should confront the difficult question of why school must exist as a physical space, rather than as a series of remotely accessible virtual lessons, suggest Prakash Nair and Roni Zimmer Doctori, the founder and chief architect, respectively, of Education

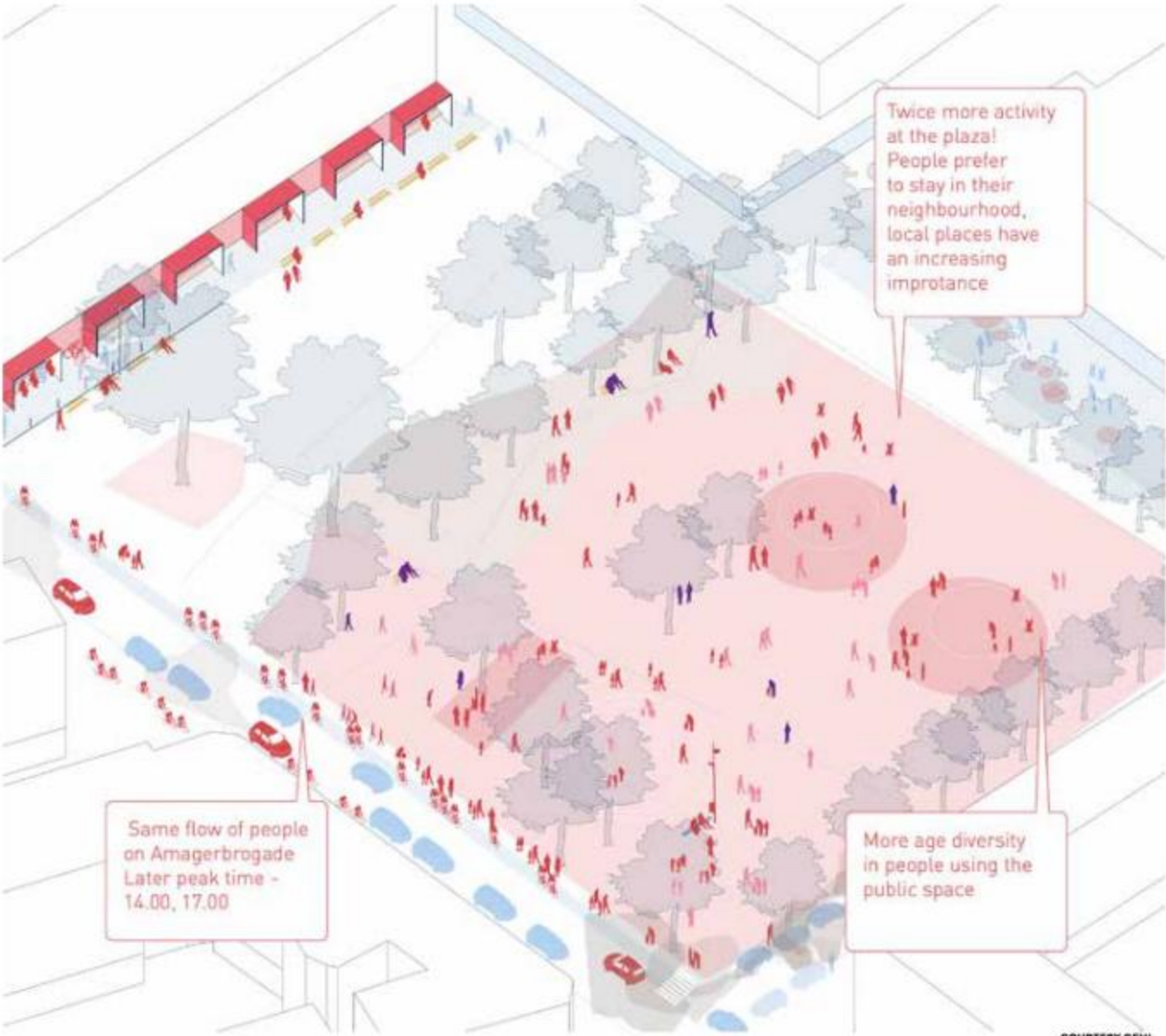
Design International. "Good schools ... [offer] opportunities students could never get at home," they write in a white paper addressing school design in a postpandemic world. "We now have an opportunity to retool and reenergize schools and schooling so that it looks very different

than the place we all learned in with rows upon rows of classrooms, each with one teacher gamely struggling to impart 'knowledge' to an increasingly disinterested audience."



Above: An analytical drawing from LTL Architects and Guy Nordenson's "Manual of Urban Distance: Strategies for Reconfiguring the City" presents an idealized urban scenario in which 100 pedestrians maintain six feet of distance from one another.

Below: The planning firm Gehl developed tools to study the impact of COVID-19 on public spaces in its home city of Copenhagen, Denmark. Among its findings was that local parks and playgrounds increased in use.



COURTESY GEHL

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FOMENTING CONVERSATION AND DEBATE

Fresh research is also emanating from the curators, professors, and critics who interpret and sometimes set the agenda for architectural practice. Paola Antonelli, curator of architecture and design at the Museum of Modern Art (MoMA), and Alice Rawsthorn, a design critic based in London, teamed up in April to create Design Emergency, a series of interviews and case studies exploring designers' responses to the current pandemic.

"Our mission is to disseminate the importance and power of design," Antonelli said. "With COVID-19, we have seen amazing contributions, and we decided it would be wonderful to talk about them."

Design Emergency exists primarily as an Instagram account (with over 8,500 followers at press time) that broadcasts weekly live interviews with designers who are responding to COVID-19, plus images captioned with curatorial remarks. The smart, concise writing recalls a "daily diary on design," an Instagram series by Rawsthorn that has some 70,000 followers, and the subject matter revisits themes from Antonelli's 2005 MoMA exhibition *SAFE: Design Takes on Risk*. Interview guests to date include medical illustrator Alissa Eckert, information designer Federica Fragapane, architect Michael Murphy, and product designer Dries Verbruggen.

The transatlantic collaborators are planning to publish a Design Emergency book consisting of 25 or so case studies. For now, they are toeing the line between formal and informal media and knowledge production, pairing unfiltered live-streamed interviews from home with meticulous copy and a slick graphic identity designed by Studio Frith. Their decision to self-publish on Instagram allows them to experiment and see immediate results, in keeping with the improvisational ethos of "hacking" that Antonelli and Rawsthorn discussed during their May 21 broadcast. A "hacked design project," they wrote in a May 19 post, is one that, designed professionally or otherwise, "re-invents existing objects, technologies, components, environments, customs, skills or anything else," as exemplified by projects such as an emergency ventilator made out of repurposed components from a Toyota Corolla, designed by five teenage girls in Afghanistan.

The term "hack" was pejorative before it was cool, and to some audiences, it may undermine the value of quick, temporary, and informal design innovations, said Faiza Moatasim, an assistant professor in urbanism and urban design at the University of Southern California School of Architecture. "There's a hierarchy built into this term. Why 'design hacks' versus just 'design'?"

Moatasim's ongoing research on informal urbanism and temporary spaces leads her nonetheless to agree with the gist of what Antonelli and Rawsthorn are pointing out, with potential consequences for city life. "The difference between formal and informal realms in urban design does not exist anymore. The two are entwined. Governments and planners use informal and improvisational strategies to design and develop cities, while street hawkers

and squatters engage with formal systems to survive. This is already happening in cities across the global south, but I think we are now going to see more improvisational urbanism here in the U.S."

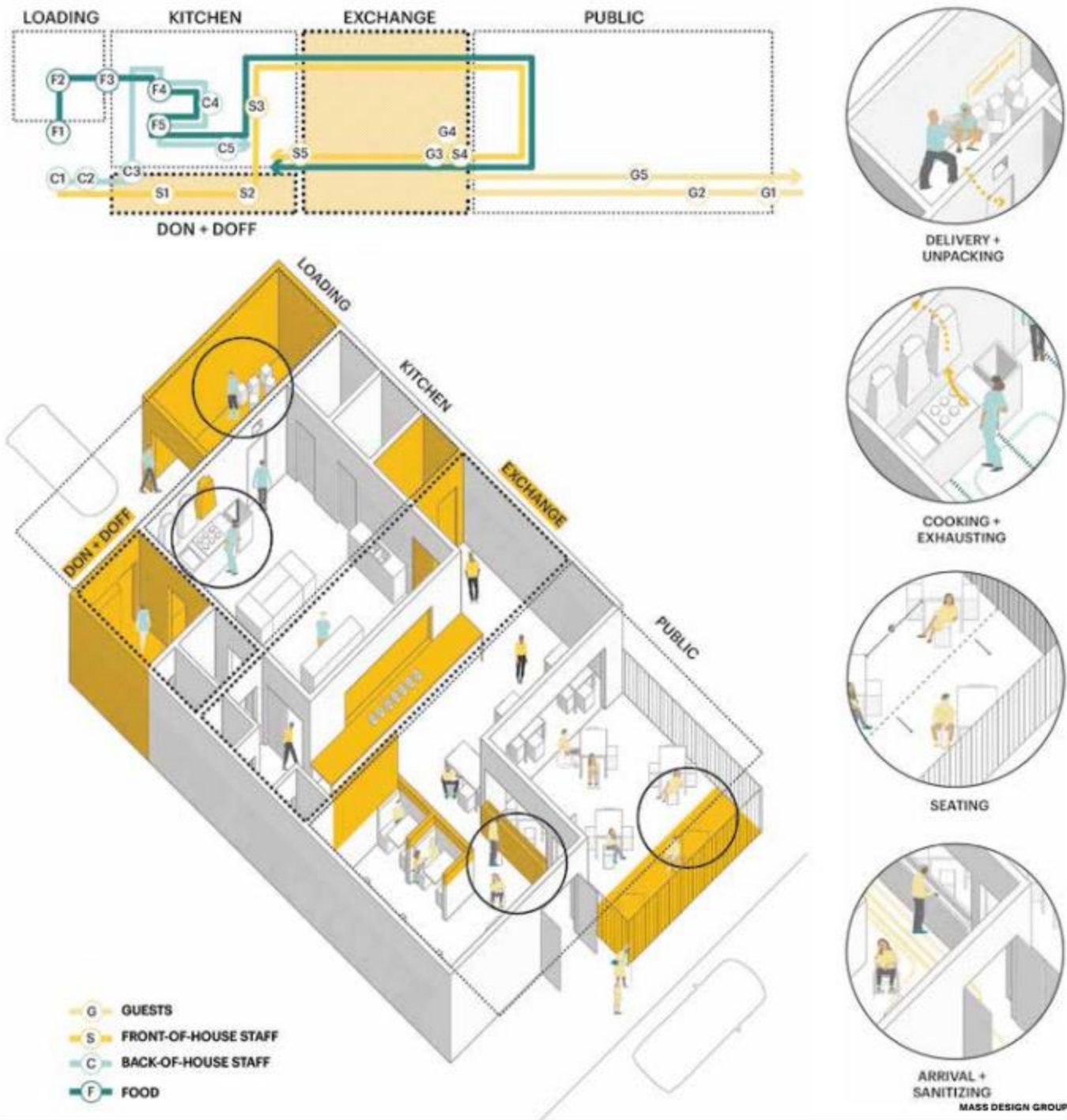
As evidence, Moatasim cited the temporary markings and retrofits seen in hospitals and shops and on streets and sidewalks in the wake of COVID-19. "The exciting thing is that sometimes these temporary measures can lead to a meaningful impact in the long term," she said.

Makeshift and experimental solutions, seen as prototypes, can drive better design in the future. Ideas can come from anyone or anywhere, but smart and equitable design research requires asking good questions, listening and observing carefully, and working collaboratively. If necessity is the mother of invention, it is also the progenitor of research, invention's quiet but indispensable sibling.



Another of MASS's reports offered several how-tos for reopening restaurants after months of lockdown. Above: It found that the six-foot standard recommended by the U.S. Centers for Disease Control and Prevention cannot be

applied to urban eateries, without resulting in a drastic decline in the number of diners. Below: It also urges restaurants to reconsider pathways for delivery, cooking and exhaust, and waiting and seating.



BOUNCING BACK

New York City's surfeit of office space will survive the COVID-19 crisis. But it might look a little different on the other side. By Matt Hickman



COURTESY RELATED+OXFORD

On March 11, 2020, Edge, a \$36-per-head cantilevered sky-deck attraction on the 100th floor of 30 Hudson Yards, opened to literal fanfare. Early that morning, a private grand opening ceremony kicked off with a brass band and concluded with a performance by aerial dancers, who leaped from the peak of the 1,300-foot-tall skyscraper and proceeded to twirl, twist, and flip high above the heads of the assembled crowd.

But uncertainty also hung in the air. A nascent health crisis continued to unfurl itself across the globe—first in China, then in Italy, then in Seattle, California, and eventually New York City. Prepared remarks from the architects and developer alluded to the fast-moving novel coronavirus, but people still shook hands. Like the amusement park in Pripjat, Ukraine, a few miles from Chernobyl, Edge was open only one full day before it was shuttered on March 13, in accordance with Governor Andrew Cuomo's restrictions on gatherings of 500 people or more, intended to curb the spread of COVID-19. (Unlike that ill-fated amusement park, however, Edge plans to reopen.)

In a way, the opening of Edge, a tourist attraction at the top of a skyscraper, capped off New York's commercial building boom. In September 2017, the New York Building Congress announced that new office construction in Manhattan had

reached a 30-year high and projected that 2.3 million square feet of office space would be completed that year, followed by 7.2 million in 2018 and 5.6 million in 2019, the year Hudson Yards opened. That is a total of 15.1 million square feet, much of it spread over glistening new towers designed by the likes of Rogers Stirk Harbour + Partners; Pelli Clarke Pelli Architects; and Skidmore, Owings and Merrill (SOM).

As of this writing, nearly three months after Edge's opening, these shiny office towers remain vacant, as workers who were not laid off or furloughed as a result of the COVID-19 crisis continue to carry on remotely. Although tentative reoccupancy plans are beginning to emerge for workplaces across the city, the future of commercial office space is still fuzzy, as companies reassess their policies and end-of-the-office hype continues apace.

In the view of architects and experts who spoke to *The Architect's Newspaper*, however, Manhattan's abundance of grade-A office space isn't going anywhere. The city itself, Hudson Yards and all, will bounce back. If anything, they suggested, the coronavirus pandemic will accelerate existing, employee-benefiting trends in the long term and lead to workplaces that are more social and healthier and offer greater flexibility.

"This whole crisis is potentially going

to be a catalyst for change," said Laura Ettelman, managing partner at SOM and a member of Mayor Bill de Blasio's construction and real estate reopening advisory council, one of ten sector advisory councils the mayor established to help with reopening and recovery efforts in the wake of the pandemic.

"The urban community is going to survive," Ettelman said. "Human beings are social creatures, and we thrive on the things that our urban centers offer to us. We will see people go back to the urban center in the same way they did after 9/11. It took some time, but people went back to building tall buildings, and people went back to flying on airplanes. And the city has been able to thrive since that crisis."

And it would seem that workers, social creatures that they are, are already itching to get back into the office—at least for some functions.

Gensler Research Institute recently asked more than 2,300 U.S. office workers if they wanted to work from home on a full-time basis. Only 12 percent said yes. Most of those who said no cited one reason: the lack of regular face-to-face interactions with colleagues. Put simply, they miss being around other people.

"Most people do want to return to the workplace," said Ben Tranel, principal at Gensler and author of "How Should Office Buildings Change in a Post-Pandemic

World?," an article published by the global architecture and design firm on its website as part of its ongoing series on design responses in the COVID era.

"As we're contemplating how we return to the office—and all kinds of spaces and built environments around us—I think what's top of mind for all of us is this: How do we make that an experience that's safe so that people will feel comfortable?" Tranel asked. "And also trying to assess what will be the longer-term, lasting changes that we make as a result of this experience."

He added: "A common theme that seems to emerge is that this type of event, a cataclysmic event like this, tends to be an accelerator of trends that were already in place."

Brent Capron, interior design director at Perkins and Will's New York office, believes that wellness-centered design will play into these longer-term changes.

"I would love to see us rethinking: Is there an architectural model that isn't a center-core building? It would be interesting to see if New York could start coming up with more interesting designs and bring wellness to the forefront," said Capron, referencing the Ford Foundation building as a precedent that deviated from the norm. "Can we find ways to cut more holes in existing buildings and turn nonatrium buildings into atrium buildings? And can

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Facing page: Edge, an attraction at the top of 30 Hudson Yards on Manhattan's Far West Side, opened in early March. The venue was open for one full day before being temporarily closed due to city-implemented safety measures aimed at combating the spread of the novel coronavirus.

Left: The opening of Edge capped off a yearlong victory lap for Hudson Yards, a paradigmatic example of contemporary corporate development in New York.

Below: Gensler has produced several studies about the impact the COVID-19 pandemic will have on corporate real estate and office design. The firm has met calls about the "death of the office" with skepticism, which it can back up with surveys.



we bring back operable windows?"

Added Capron: "If we have this glut of commercial office buildings, let's cut into it. Let's convert it and open it up."

Melissa Marsh, founder of social research and workplace strategy organization PLASTARC and senior managing director of occupant experience at global real estate services provider Savills, agreed that wellness, already a leading office design trend pre-COVID, will grow in importance alongside sustainability and what she calls "purposeful occupancy."

Wellness considerations, such as natural ventilation and lighting, biophilic design elements, and a workplace culture focused more on flexibility, self-care, and stress management, are "going to be as significant or more significant going forward," Marsh said. "Each of these things that we knew and were already pursuing have [gained] a new layer of meaning or relevance."

Marsh and Capron agree that if Manhattan's largest commercial leaseholders do bestow greater flexibility on employees, as is anticipated, vast, isolating, cubicle-dominated floor plates will need to go.

"It's more important than ever before that the places where we are coming together have an intense level of sociability and experience and importance, because that's the piece of the work

experience culturally—certainly physically—that you wouldn't get from the virtual version," Marsh said. "There isn't the advantage that people think there is of having one-to-one space allocations per person. The corporate campus should be about the corporate experience, not about a container for accommodating the specified head count, and that's part of this evolution from an industrialized version of work, which is 'Thou shalt report to a cubicle at 9:00 a.m. every day.'"

"We could have worked from home before this," said Capron. "But there's something about bigger cities—the pride of these cities—and the gorgeous urban experience that people are going to want to have."

Capron does note that there is the potential that some office space will be made redundant as employers adjust to new, potentially less physically expansive modes of working. And this could lead to other opportunities. "Maybe [redundant commercial real estate] converts to residential so we can spread out a bit more and aren't on top of each other in our apartments. And people can afford apartments again."

"It's an opportunity to create more live-work communities by shifting and changing some of the use of buildings," said Ettelman of the "interesting" prospect of converting commercial office space into

housing. "Thinking about how to improve the pipeline of delivering more housing is an important thing in the city." She does note that "there are many things we would also need to change in those buildings and adapt to shift an office building to a residential building."

Vishaan Chakrabarti, founder and creative director of Practice for Architecture and Urbanism (PAU), believes that aside from a "little bit of shrinkage" in the demand for office space, sweeping long-term changes to how and where we work simply aren't in the cards. He said that there will be no working from home in perpetuity or enclosing individual workspaces within plastic bubbles. He also referred to the influx of pandemic-related speculative designs as a result of people being "short-term histrionic," adding, "I think it's a weird vestige of the Corbusian architect-as-god model, and I saw this a lot after 9/11, too, where architects want to feel as relevant as firefighters. We're not first responders, we're second responders. Our responsibility is to really think about how to reimagine things in the aftermath of crises."

"Do I think there will be more of an emphasis on healthy workplaces coming out of the pandemic? I do," Chakrabarti said. "Do I think it's going to be because people are somehow going to think that even after a vaccine [is available], that

they're going to catch something from their coworkers? No, I don't."

Between the deep need for social interaction in the workplace and the intoxicating pull of large urban centers, it becomes clear that New York's office workers will return to their desks. Perhaps they'll be there a little less often. Maybe there will be changes and some bumps at first, as both the city and companies adjust. But Hudson Yards will survive. New offices will continue to be built across the city. Edge will reopen.

"There's a whole group of people who just insist on thinking that the only reason that we all live in cities is because we have to, not because we want to," said Chakrabarti. "And that's the piece that no one's getting about this—that this desire line is not going to go away because of a virus."

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The authors of a forthcoming book on quarantine discuss its past, present, and future.



The bones of a decommissioned quarantine hospital on Ellis Island, New York City



The Lazzaretto Nuovo is a medieval plague and quarantine hospital in the Venice lagoon.

Spatial investigators Geoff Manaugh and Nicola Twilley lapped the rest of the country on quarantine. The married couple were in the middle of drafting a book on the cultural, epidemiological, and spatial facets of quarantine—then titled *The Coming Quarantine*—when the first cases of the novel coronavirus were being discovered stateside. After Twilley returned from a business trip to Seattle in February, they both fell ill and voluntarily self-isolated in their Los Angeles home. “The next thing we knew California was under lockdown,” Manaugh recalled in a late-April interview with AN’s executive editor, Samuel Medina.

The quarantine Manaugh and Twilley anticipated—their interest in the subject goes back more than a decade—had arrived, and it’s likely to be with us for some time.

This interview has been condensed and edited for clarity.

AN: When did you begin drawing out the spatial implications of quarantine?

Geoff Manaugh: We were down in Sydney, Australia, for a temporary teaching gig, and we visited a quarantine hospital outside the city that had been converted into a luxury hotel. There was something really interesting about the fact that it had been maintained structurally and also converted into something new. The more we thought about it, the more questions we began asking ourselves: What *was* quarantine? Was it only a way of dealing with epidemic disease? Where did quarantine go, and what spatial fossils did it leave out in the world for us to explore? At the time that we

began looking into these questions, it still felt like a historical concern, but we soon realized quarantine is not outdated at all. Now, ten years later, with the novel coronavirus, quarantine is the only thing we have, in some ways, to protect ourselves from disease.

Nicola Twilley: We did a lot of traveling from there. For example, in 2010, we went to Geneva to talk to people at the World Health Organization. They almost laughed in our faces about the idea that quarantine would be a useful medical tool—that is, using large-scale quarantine as a nonpharmaceutical intervention—in the contemporary world. At the same time, we came away with the notion that quarantine was definitely not something confined to the history books.

AN: What outlets did you channel this initial research and travel into?

GM: As soon as we started becoming interested in [the subject], we saw that quarantine has resonances across many disciplines. For example, being in quarantine can be very interesting to a novelist, who can use the state of quarantine as the launching-off point for a novel. Or if you’re a game designer, quarantine presents a series of challenges and even [might imply] adversaries who may want to break out of quarantine. And then, of course, there’s architecture. Quarantine at its heart is an architectural, or spatial, undertaking. This became the basis for a 2010 exhibition at Storefront for Art and Architecture [in New York City] that we ended up calling *Landscapes of Quarantine*.

AN: From there, you continued to look at

quarantine in your own ways. Geoff, you went on to write and release *A Burglar’s Guide to the City* [2016], and, Nicky, you published several articles and curated an exhibition on the subject of refrigeration. What are the connections to quarantine, in each case?

GM: Both of us left the [Storefront] exhibition knowing that it deserved further exploration. Nicky was working on [the blog] *Edible Geographies* and investigations into food, architecture, and infrastructure, and I ended up writing the burglary book. There wasn’t too much about quarantine in that book, but ironically one of the things that has come up since—and which will be in the quarantine book—is that burglary has an interesting relationship to quarantine. Unlike the lockdown we’re experiencing now, quarantine historically took place outside of the house, so that when you were placed under quarantine you were sent to a lazaretto, or dedicated facility, and often, your house was even marked, indicating that you were in a state of quarantine....

AN: You’re referring to the bubonic plague, the example being medieval Venice, Italy.

GM: Right, but at other points of history as well. So what that means is people who had immunity to the virus or the plague or disease that was circulating at the time, made for ideal burglars. They could easily break into the homes of those being held in the lazaretto.

AN: This was the concern of museums [in recent months], whose lightly guarded collections, they worried, would be vulnerable to burglars, and [they] moved to hire

extra security guards to ward them off. Nicky, what’s the link to refrigeration?

NT: You would think there would be no overlap between refrigeration and quarantine, aside from in a macabre sense, with the refrigerated trucks that hospitals are calling in right now, or the ice-skating rinks that Madrid turned to when the morgues were full. But I also think there is a *conceptual* overlap with quarantine, in two aspects: One, refrigeration is the most recent step in our species-long war against the bacteria that want to eat our food. We have, across time, been fighting that war with all the weapons we have had at our disposal. Quarantine is our weapon right now against the invisible bacteria and viruses that want to kill us. Two, refrigeration is a technology that has enabled us to manipulate space and time in terms of our food supply [to create] the permanent global summertime on our supermarket shelves. Similarly, quarantine is this attempt to have a seamless global trade and flow of people and goods while maintaining a barrier of health. [Refrigeration and quarantine] are both weapons and preservative acts. Of course, once you start seeing the world through the quarantine lens, it’s hard to stop.

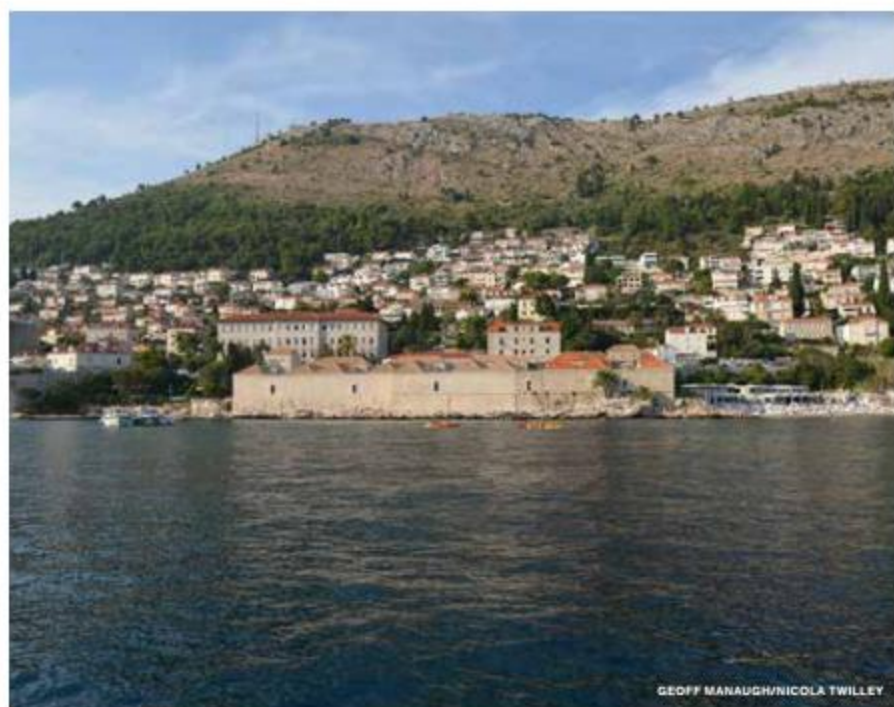
AN: I want to move us toward the field of architecture. I do get a sense that some architects tend to conflate the terms and the parameters of quarantine, so that it becomes synonymous with isolation or simply confinement.

NT: That conflation is one that we see all the time. But there is a difference, right? With isolation, once you are certain you have the disease, then you are kept away

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A former lazaretto (or lazaret, a hospital for containing contagion) complex in Dubrovnik, Croatia



The courtyard of a former lazaretto in Acona, Italy

from the rest of society. But with quarantine, there is only a *suspicion* that you might be infected or are a carrier for disease. There isn't certainty, and once there is certainty, then you're no longer in quarantine—you should be hospitalized. It's not only architects. Throughout our reporting, everyone we talked to saw quarantine through their own lens. So if they were medical doctors, they were inclined to see it one way, and if they were historians of public health, they were inclined to see it another way, and if they were NASA astrobiologists, they saw it in still another way and at a different scale.

GM: But I do think architects are very good at assuming that a topic is unique to their discipline, when that is not at all the case. I had a similar experience when I was writing the burglary book. If I talked to an architect about burglary, it immediately seemed like a topic related to building design, but when I mentioned to a security professional or a cop that I was writing about "the architecture of burglary," they tended to be surprised that architecture had anything to do with it. Similarly, when you talk to people about quarantine, they are surprised that there is an architecture side to it, because from their point of view it's about law enforcement or constitutional rights or it's about the bureaucracy involved in keeping people in their houses or even about the psychology of people and whether or not they can get through two weeks of extreme boredom staying at home. Architecture sort of stands right in the middle of all that.

AN: Now that we're up to speed on the history of both quarantine and your book project [which will be published by MCD Books in 2021], how will the current pandemic feature in the latter?

GM: Originally and still at the moment the book is called *The Coming Quarantine* [since changed to *Until Proven Safe*], because we imagined that quarantine really is the issue of our time. It turns out that when you take emerging diseases that don't have a vaccine or cure and add in international air travel and the flow of goods, you can spread those emerging diseases throughout the world in the span of a few hours. So, the one thing we have left is quarantine—it's the way we add a buffer between ourselves and everything else in order to protect ourselves. But the "coming quarantine" [that] we had projected into the future since beginning this

book has arrived. At one point [during the lockdown], the majority of the earth's population was in a state of quarantine. That is unprecedented in human history. The world itself made our book relevant, I guess you could say, because suddenly we're writing about the present; we're writing about something that will very likely be ongoing when the book comes out next spring.

NT: [From] our research into the historical instances of quarantine, we can see so many of the same themes today. Questions about racism and bias in how quarantine is applied. Questions about enforcement versus individual rights. Questions about inequality and what the state's responsibility is to provide for people in quarantine and whether or not that sets a precedent for further welfare down the line. We can see these same debates happening during the bubonic plague and the resonance of people now wiping down their groceries when they get back home. At the same time, there are noticeable shifts. For example, with the predictive modeling and tracking devices, quarantine can be implemented on a massive scale and in really precise ways.

AN: You mentioned Sydney and Venice. What other locales figure in the book?

NT: All sorts! One of the places I visited was Reading, outside London, where the international cocoa quarantine center is. For tropical plants, the buffer zone is a nontropical country. The world trade in cacao plants is an immensely valuable industry, so to prevent diseases' spreading from one region to another, all the world's in-transit cacao plants go and spend a little vacation in Reading, where there are no local pests that they can pick up. It's climatically quarantined. It's the wrong climate zone for them, so they're safe. There are a lot of weird places like that where you wouldn't think to look for quarantine, yet they illuminate aspects of trade and how these "disease buffers" are engineered.

GM: Along those same lines, we went to an agricultural inspection station for plant quarantine on the Arizona-California border. We even visited NASA and the European Space Agency. We've been to the first federal quarantine facility in the United States.

AN: I want to pick back up on the literary dimension, especially in regard to

BLDGBLOG [the loosely architectural blog Manaugh founded in 2004]. Geoff, I know in those early years, [the novelist J. G.] Ballard was a presiding presence over the blog. The descriptor "Ballardian" really seems to sum up the present dystopian moment.

GM: Definitely. Quarantine is, as we were talking about earlier, a spatial problem, but it's also a narrative problem. You're trying to prevent two things from influencing one another, and you're trying to keep two things separate. So right off the bat, there's a tension that sets up influence versus contamination, containment versus escape.

But in terms of Ballard, there is a great moment in his novel *Super-Cannes* [2000]—about a business park in the South of France—where one character says in a throwaway line that they've run a new simulation that requires them to set everyone's office chairs 16 inches farther apart than they were before, so as to avoid [workers] breathing in any diseases. In that example, Ballard puts diseases at the center of how we build and the way we inhabit buildings, so that something as marginal as spacing office chairs 16 inches apart might keep SARS or COVID-19 at bay.

AN: We can't talk about quarantine now without also talking about social distancing, which, I guess, is a sort of interpersonal "buffer," as you've put it. Initially, there had been a concern on the part of activists about relinquishing public space and, by extension, the right to protest. But, thankfully, that concern now appears to have been unwarranted.

NT: There was an amazing image of [the first] socially distanced anti-Netanyahu protests in Tel Aviv. In a weird way, it was all the more powerful because of the geometry of their distance. I also think the image of people lining up to vote in [the] Wisconsin [Democratic primary in early April], to exercise their civic responsibility despite the absolute ridiculousness of their elected representatives and still doing so in a socially distanced fashion, was incredibly powerful. So I think for every image of an Astroturfed protest [like those of late April that protested state and municipal lockdowns] there are counterimages showing that the occupation of space can be just as powerful as before.

AN: What about this time of quarantine has surprised you the most?

NT: Even while we were doing our research, people expressed some dubiousness that Americans would agree to measures like this. That is, they could see social distancing and other measures to prevent the spread of a virus being implemented elsewhere, but not here. I have been personally surprised that, apart from those Astroturfed protests, there has been a relatively large and unquestioning participation here.

GM: I agree. I was pleasantly surprised just how willing Americans were to go along with social distancing and stay-at-home orders. They were putting country before self, and that isn't much of a tendency you see in the United States anymore.

Following the protests across the country against police violence in late May and early June, AN followed up with Manaugh and Twilley for their response:

GM: In terms of the recent protests, both Nicky and I are resolutely in favor of police reform, against police brutality, and stand with Black Lives Matter. *Purely in terms of social distancing*, and not in terms of the protests' underlying cause, I am concerned that there will be a spike or surge in coronavirus cases coming from this. I am also worried that the perceived legitimacy of future lockdowns will have suffered a political blow, as groups might violate social distancing rules or quarantine orders if it is for an issue that they believe is more important than disease containment. The flipside, of course, is that if there is *not* a surge in new infections, then my worry, perversely, is that the medical establishment will experience an unparalleled crisis in public trust. Had they been wrong about social distancing and quarantine all along?

I think, more interestingly, we are perhaps seeing how COVID is transforming cities by opening up streets for people, not cars, and that this gives us an early glimpse of how urban transformations such as these might empower citizens to elevate their voices and participate directly in the governance of society; it does not seem to be a coincidence that these protests are at their most successful and widespread at the exact moment that cities are being redesigned, however temporarily, for better access to urban space.

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Barriers for the age of COVID-19

Windows & Walls

COURTESY 3FORM

The following pages showcase some of today's most impressive windows and walls—operable or not—installed in a variety of projects, including an outdoor office, a garage accessory dwelling unit, and a large college campus. Plus, special product listings featuring hygienic design solutions for the COVID-19 era, including physical barriers, automatic openers, and touchless hardware. By Gabrielle Golenda



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Postpandemic Practice

Leaders in the AEC industry discuss how COVID-19 has disrupted projects and the processes the industry was forced to alter or halt in response to state mandates. They describe what course correction looked like and how new practices might be retained in the postpandemic future. **By Gabrielle Golenda**



COURTESY PERKINS EASTMAN



COURTESY ROGERS PARTNERS



COURTESY GUARDIAN INDUSTRIES

Rob Rogers
Principal, Rogers Partners

These past few months, and the many months in front of us, have been testing the profession as we reimagine our workplace and work process. Moreover, it's about what we make. I think we are just beginning to forecast the lasting impacts to the spaces we share—for education, worship, recreation, and essential public gathering. Add to this the turmoil of recent days; in the best case, we gain a renewed understanding of how these spaces connect us and offer hope for the future.

As a practice, we are doubly committed to the *public* in the public realm and are striving to understand the essence of our social behaviors. The recent challenges have delayed openings of several major projects, like the St. Pete Pier, and we are exploring strategies for scaling occupancies to discover ways to protect, enhance, and expand fundamental opportunities and needs—for everyone.

We are nonetheless hopeful. Through this adversity we can begin to envision novel courses for our society and environment. The pandemic is a new lens through which we must learn new ways to see and think.

Eric Wroldsen
Director of Marketing – Americas,
Guardian Industries

Guardian Glass has stayed in close communication with our customers, partners, and employees as the pandemic has progressed. Regular contact means we can be responsive and helpful in addressing their needs to move us all through this crisis.

Like many companies, Guardian is utilizing digital tools. However, we've ramped it up to take advantage of our glass expertise and serve architects' need for continuing education credits. In May, we offered the course we planned to debut at the since-canceled AIA Conference on Architecture as part of a trio of live sessions. Continuing-education offerings on glass fabrication, the evolution of glass, and understanding the glass selection process saw great attendance and interaction thanks to promotion and sharing through social media and email outreach.

Guardian Glass is on schedule for commercial product launches in 2020. Digital communication will allow our architects to capitalize on these and all Guardian high-performance, low E-coated glass products for the next generation of projects.



COURTESY PERKINS EASTMAN



COURTESY PERKINS EASTMAN

**Shawn Basler, Nicholas Leahy,
and Andrew Adelhardt III**
Co-CEOs, Perkins Eastman

We made a smooth, almost seamless transition to working remotely. In addition to working from home, our teams are presenting proposals and winning projects, as well as collaborating with consultants and contractors on construction administration where construction has not been stopped. In some jurisdictions, of course, construction has been put on hold because of coronavirus-related restrictions.

While our staff is capable and efficient at working remotely, they do miss social interaction and look forward to seeing their peers in person. We are having many individual conversations, videoconferences, and virtual happy hours, as well as yoga classes, trivia nights, and so forth, to stay connected. We expect a much greater focus on health and wellness going forward and understand that remote working and learning will have a profound impact on how companies and institutions plan in the future.



COURTESY ASD | SKY

The opening of St. Pete Pier was delayed by nearly two months. The pier head is one of the public programs in the revitalized urban park.



COURTESY TECTONIC PHOTO

The Arquitectonica-designed Ellipse Luxury Apartments in Jersey City, New Jersey, includes Guardian SunGuard AG 50 coated glass.

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Andy Howard
Chair, Americas region, Arup

We work in an industry that relies on teamwork, collaboration, and strong client relationships to deliver exceptional projects from concept through to delivery. COVID-19 has impacted all project stages as we adapt and adhere to shifting public health guidance globally and locally. At the same time, our teams have demonstrated resilience and creativity, adjusting to social distancing requirements, for example, and staying close to our clients and design partners in new ways. This has been facilitated by the rapid expansion and embrace of cloud-based solutions and collaborating digitally on projects. A key challenge in the months ahead is understanding the pandemic's impact on the architecture, design, and construction industry—in other words, what the "next normal" will look like.

As the COVID-19 pandemic continues to impact the world, our commitment to the safety and well-being of our people, and to the uninterrupted delivery of exceptional work to our clients, remains unwavering. Responding to many of the challenging aspects of COVID has strengthened us, making us a more adaptable and efficient organization.

One of the things I cherish about Arup is that, through my more than three decades with the firm, we have always done our best to act in accordance with our values, striving to live up to our aims and means and to realize the positive outcomes we desire. As a firm, we've had to consider the many difficult decisions before us in light of our values and the three priorities we established as part of our COVID-19 response: (1) the safety and well-being of all our members; (2) the resilience and security of our business; and (3) our responsibility to continue to live out our commitment to shape a better world and to help society at large in any way we can.

Every day, we are finding new opportunities to be of service to our communities and clients as we navigate their needs and adapt to rapid changes across the built environment. Our collective action in tackling this pandemic has seen a surge in demand for urgent and effective solutions to new ways of living and working. We will continue to keep our values front of mind as we respond and adapt to the near- and long-term impacts of COVID-19.



Volunteers from Arup's Los Angeles office 3D printed face shields and masks to help local hospitals facing PPE shortages.



Emily Losego
Architectural Services Team Leader,
Vitro Architectural Glass

It's been challenging to connect with architects, who are now working from home on projects. Many of their office voicemails are full, creating a heavier reliance on email. Samples are another area that has been impacted. We've adjusted by sending samples to individual architects' homes, instead of their offices. In some cases, this has required us to send samples concurrently to multiple team members, which has been an unwelcome added expense.

Vitro had already made considerable investments in our own web-based infrastructure, so the transition to "work-from-home" and internal collaboration was seamless. Extreme western Pennsylvania weather gave us ample opportunity to test the system, and both the equipment and our people were ready when the company was early to institute work-from-home orders. It has also validated our corporate leadership's internal communications commitment and tools, such as companywide video town hall meetings and new e-newsletters, to create a climate of solidarity and transparency throughout the organization.

Some of the web-based communications tools we've developed, such as remote continuing-education webinars and live chat, will certainly be with us for the foreseeable future. They are a highly efficient means for connecting architects with important information. As circumstances have required us to find creative solutions, we've also discovered some hidden talents and skills of our coworkers, beyond the normal scope of their jobs. There is no doubt that as a new normal takes shape, these newly discovered capabilities will help us better serve our customers and designers.



Jacobs Medical Center at UC San Diego Health is enveloped by a Vitro glass skin.



Oliver Stepe
President, YKK AP America

Our COVID-19 task force has been working diligently to assure employee safety while maintaining operations in jurisdictions across the U.S. that have deemed the sectors in which we operate as essential businesses. We maintain operational status at our main manufacturing bases in the state of Georgia and at our subsidiary Erie Architectural Products in Lakeshore, Ontario. Teleworking has been deployed in some essential infrastructure roles and in unique high-risk cases. However, by and large, employees are working at company facilities under strict social distancing practices that meet or exceed CDC guidelines.

We have expanded cleaning and sanitizing measures, suspended business travel and nonessential visitation to all facilities, and actively enforced social distancing. The company conducts temperature screening upon entry at its main manufacturing bases in the U.S.

Additionally, YKK AP America and its sister company YKK (USA) have made a corporate donation that doubled the operating dollars available in the Employee Assistance Fund [EAF] shared by the companies. The EAF is an employee-funded program that offers grants to employees who face unexpected financial hardships, including losses resulting from COVID-19.



The Heights Building in Arlington, Texas, designed by BIG, features a cascading facade with YKK's unitized wall system.



Arte

Location: Surfside, Florida
Architect and designer: Antonio Citterio Patricia Viel
Window/wall system: Schüco HSS 65

Architect of record: Kobi Karp Architecture & Interior Design
Structural engineer: Thornton Tomasetti
Facade consultant: Giovanni Monti & Partners
General contractor: Americaribe & Moriarty Joint Venture (AMJV)
Window glass: Tecnoglass
Window frame coating: AkzoNobel Lexus Bronze TRI-ESCENT II ULTRA

Arte, a 12-story, ziggurat-shaped luxury condo building, stands on the beach of Surfside, Florida, like some kind of glossy totem. Slabs of travertine seem to float above one another with only large glass windows between them. The effect is both effortless and luxe, appropriate for this affluent stretch of the Atlantic coast between Bal Harbour and Miami Beach. The building's designers—Milan, Italy-based firm Antonio Citterio Patricia Viel (ACPV) and Miami-based architect of record Kobi Karp Architecture & Interior Design (KKAID)—drew on their respective backgrounds “to create an architecture able to perfectly adapt to the location, while preserving an Italian soul,” said Antonio Citterio. For Citterio, a cofounder of ACPV, the sea-forward lifestyle of the Mediterranean was a constant reference, while Kobi Karp, founder of KKAID, drew inspiration

from beach morphologies. “Specifically, sand dunes. That’s reflected in the stone colors and the pyramid shape,” Karp noted. Within each of Arte’s 16 units, living spaces spill out onto spacious, ipe-decked balconies, thanks to operable walls from Schüco. These are supplemented by a gridded window system that runs down the middle of the facade to create a bit more privacy for residents. Karp said that after studying three or four window systems, the designers chose the Schüco system because of its thin profile and operable and fixed options. The Tecnoglass windowpanes were impact-tested to ensure they could withstand hurricanes and tropical storms. The distinctive, knife-edged balconies were shaped by structural engineering and local zoning requirements. Pretensioned slabs help them cantilever from the facade without any vertical supports that might block the view, and setback regulations meant that every second floor needed to retreat further from the shore, creating a terracelike feel with plenty of shade. The building features many bells and whistles that cater to a rarefied market (a 75-foot indoor swimming pool, a rooftop tennis court, climate-controlled parking, lobby art by Olafur Eliasson, etc.), but it’s the giant sliding doors that really turn these condos into the stuff of fantasy as they open onto ocean, sand, and sky. **JBM**

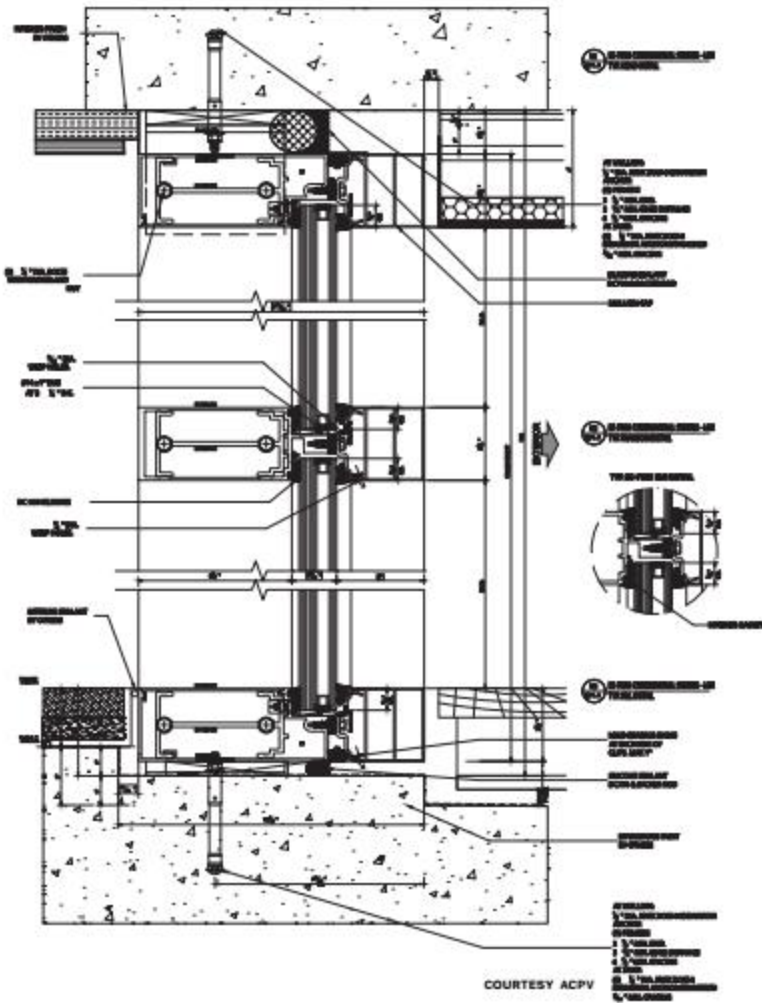


Top: Arte's windows and operable walls open onto balconies that overlook the South Florida shore.

Above: Balconies create deep overhangs that shade the building's glass walls.

Above right: The building's beachfront facade mixes gridded and single-pane windows to balance privacy and views.

Right: A typical detail of the curtainwall system.



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A photograph of the Vitrocsa Invisible Wall System, showing a modern building facade with large glass windows and doors. The system is designed to provide a seamless transition between the interior and exterior spaces.

Bird Friendly Glass Facades by Viracon

New York's Javits Center, with its well designed conference and exhibit spaces and beautiful interiors flooded with natural daylight, attracts millions of businesspeople every year. Fortunately, when it was renovated in 2015 its exterior glass was printed with a pattern that kept it from being attractive to birds, too. According to New York City Audubon, the center's new printed glass facade reduced bird deaths by 90 percent. Attractive to people and a deterrent to birds—that's great glass.

Glass facades deliver many benefits, including daylight, views, and dynamic aesthetics, but a downside is that birds do not perceive traditional clear glass as an obstacle in their flight path.

However, it is possible to balance glass's benefits with its adverse impact on birds by

selecting glass that minimizes the potential for bird-to-glass collisions. Research has shown that adding a pattern can increase birds' ability to recognize glass, reducing the likelihood of collisions. This awareness has led organizations, cities, and states to develop bird-safe building guidelines, laws, and standards.

Tested Products and Threat Factors

Scores from the American Bird Conservancy (ABC) tunnel test are utilized by ABC and the U.S. Green Building Council to assign a threat factor to materials. A lower threat factor means that the product deterred more birds in the tunnel test than products with a higher threat factor. Viracon has six products that have been tested by ABC.

2x4 Rule

Researchers acknowledge it isn't practical to test every pattern. To address this practicality, researchers have used existing studies to develop a guideline commonly referred to as the 2x4 Rule.

The 2x4 Rule is referred to in multiple bird friendly design guidelines and indicates that developing patterns with horizontal lines spaced no more than 2 inches apart or vertical lines spaced no more than 4 inches apart can deter collisions.

To learn more about bird friendly glass options go to viracon.com/bird-friendly/.

Further details about the testing and scoring of glass is available at Viracon's Bird Friendly

Tech Talk at viracon.com/wp-content/uploads/2020/03/VTT-014_BirdFriendlyGlass.pdf.

Project Examples

Viracon has participated in numerous projects that studied the use of printing to decrease bird collisions. These projects used patterns, many of them customized, to match the guidelines, standards, and laws specified by the project owner or design team.

Learn more at viracon.com/bird-friendly/.



The Jacob K Javits Center renovation/expansion features a custom silk-screen pattern that is in the New York City Audubon's Bird-Friendly Building Design guide 2015 updated version.

Hygienic Hardware

Who touched it last? To mitigate inevitable contact with bacteria, the latest hardware uses easy-to-clean materials, inherently bactericidal elements, and antimicrobial coatings. **By Gabrielle Golenda**



Prestige Series with Microban Antimicrobial Technology Baldwin Hardware

Available in the summer of 2020, Baldwin's Prestige Series Spyglass products feature a matte black finish with Microban antimicrobial protection. The treated hardware inhibits the growth of bacteria via a continuous coating that won't wash off or wear away from use or maintenance.

baldwinhardware.com



INOX MicroArmor Unison Hardware

Unison Hardware now offers a silver ion antimicrobial coating on its entire hardware catalog in three finishes: stainless steel, plated, and ceramic. MicroArmor latches, levers, and knobs are ideal for high-traffic areas, including in hospitals and schools.

unisonhardware.com



Kwikset with Microban Kwikset

Kwikset offers a variety of indoor and outdoor locks and handles protected by Microban's SilverShield silver ion coating, which helps to hinder the growth of bacteria. Applied in the manufacturing process, the coating has a lifetime warranty.

kwikset.com



Verdura Rocky Mountain Hardware

The Verdura collection is cast in CuVerro, a bactericidal copper alloy proven to kill bacteria with routine cleanings. Designed by multinational architecture firm HOK, the series comprises levers and door hardware offered in rose, silicon, and white bronze with brushed or matte finishes.

antimicrobialbronze.com



Arch Collection Sun Valley Bronze

Made from copper alloys, the Arch Collection is inherently bacteria-resistant. In keeping with the company's standards, no lacquers or coatings are applied, preserving the antimicrobial properties of the material. The collection is available in several finishes, including silicon bronze, white bronze, and brass.

sunvalleybronze.com



DL Sugatsune

Sugatsune America's DL series handles are popular for nurses' stations, diagnostic equipment, and hospital millwork not only because of their stainless steel, but also for their low projection—making them less obstructive in a medical environment.

sugatsune.com

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Accurate Lock & Hardware Introduces New Touchless Automatic Latch Retraction Mortise Lock

People now more than ever are concerned with protecting themselves from infection. Even when hardware is disinfected thoroughly between uses, it is important to remember that there is still a possibility for germs to spread through the touch and contamination of door hardware. With this in mind, it is only fitting that door entry features adapt by adding technology that reduces the frequency of contamination associated with touch.

Accurate Lock & Hardware introduces the

M9100ELR series, which allows touchless entry and hinders the spread of microbes. It uses an electrified motor drive to retract its latch and provide touchless entry when paired with a motion sensor or card reader. It is ideal for both commercial and residential environments, offering power-operated openings that facilitate accessibility and ADA compliance.

Similar systems have traditionally been used in commercial handicap exterior entries, which are typically composed of panic devices

incorporating a solenoid or motor paired with a low energy power operator. Recently, lock electrification technology has evolved to include a small-body stepper motor inside a mortise lock body, providing a more reliable method of latch retraction. These new locks can be retrofitted into a standard mortise lock prep. A motor drive lock requires low DC voltage power, making it energy efficient and cost friendly. Mortise locks provide security during power outages or fire alarm events.

The M9100ELR locking technology can also provide more aesthetic possibilities for residential applications. The electric latch retraction essentially eliminates the need for active trim on the exterior. Doors can be outfitted with a simple push plate or decorative pulls to make a minimalistic statement. Homeowners can present a credential such as a code in a keypad or use a fingerprint scan or key, and the door will automatically unlatch without the owner touching hardware.



Above: When the hands-free motion detector* is activated, the latch is retracted to open the door.
**Access control components by others*

The M9100ELR Mortise Lock can be paired with ligature resistant hardware and access control systems for implementation in healthcare facilities. The Ligature Resistant Crescent Handle removes the risk of ligature points while also eliminating the pooling of fluids on top of the handle. Access control prevents unauthorized people from gaining access and uses touchless hardware. A rigid crescent safety pull on the opposite side of the door is used to open the door. It is offered with an antimicrobial coating to reduce the risk of contamination.

For more secure entryways, hospital emergency departments are building holding rooms for psychiatric patients. These spaces are required by code to have no visible hardware on the interior room side. Implementing the M9100ELR hardware allows staff to key in and out of a room without visible hardware on the inside. The doors can also be equipped with an antibarricade function, allowing them to reverse swing into the hallway in the event of an emergency. Patient bathroom doors may also be specified without any visible hard-

ware. This allows staff to open the door for the patient by keycard or other access control method. An active patient safety lever trim inside the bathroom can be used for patient egress.

The M9100ELR series allows ease of access while still supporting full hands-free-technology for the full capability to help alleviate the spread of microbes. The touchless entry afforded by M9100ELR enhances infection control in highly populated areas.

The M9100ELR series is available with a variety of locking functions and finishes. It is ideal for pairing with a low energy power operator and is adaptable to new technology, allowing for a longer life, and is optimal for access control systems.

For more on the M9100ELR series, [click here](#).

The Bryant



COURTESY MATTIAS KUNZ/DAVID CHIPPERFIELD ARCHITECTS



COURTESY HFZ CAPITAL GROUP



COURTESY HFZ CAPITAL GROUP

Left: The Bryant is located next to landmarks like the New York Public Library and the American Radiator Building, whose masonry informed David Chipperfield Architects' design.

Above left: The grid-ded facade is built of precast concrete panels with a terrazolike aggregate. The minimal sightline of the window framing highlights their materiality and outward views.

Above: Each of the windows on the north and south elevations are operable and are fronted by a Juliet balcony.

Location: New York City
Architect: David Chipperfield Architects
Window system: Vitrocsa Invisible Wall system

Architect of record: Stonehill Taylor
Structural engineer: Severud Associates
Facade consultant: Vidaris
MEP: WSP
Project management: T.G. Nickel & Associates (now part of Consigli Construction)
Glazing manufacturer: Guardian Glass
Precast manufacturer: Gate Precast

Overlooking New York's Bryant Park, the residential tower The Bryant cuts a striking yet

austere figure in the crowded Midtown skyline. Designed by the primarily London-based firm David Chipperfield Architects (DCA), the 34-story high-end high-rise is notable for its perfect grid of oversize post-and-beam concrete slabs and operable window bays.

Bryant Park is bounded on three sides by office towers, done up in styles that span the better part of the 20th century. While mirrored glass and other conspicuous finishes that scream "the eighties" predominate, there is also the charcoal brick of the eclectic Gothic art deco American Radiator Building; the park's fourth edge is defined by the Beaux Arts New York Public Library, clad in milky Vermont marble. DCA, which has an extensive background with sensitive infill, devoted

considerable effort to pairing the tower with its neighbors, with particular attention to the building's material composition. Terrazzo-finished precast concrete panels—an effect achieved with an aggregate of white marble, quartz, and variegated limestone—frame generously sized glazing bays, into which nine-foot-tall floor-to-ceiling windows are set.

Operable windows are not in and of themselves novel features in the city's residential skyscrapers. However, the system used here, Vitrocsa's Invisible Wall sliding window doors, is notable for its remarkably slender 3/4-inch vertical sightlines, which pair well with the tower's crisp, rectilinear forms.

Manufactured at Vitrocsa's Culver City, California, plant, the operable windows appear on

the north and south facades and are fronted by Juliet balconies of black vertical pickets. Compared with a typical curtain wall, Vitrocsa's system is effectively structural glazing engineered to be operable at both ground level and tower heights. At The Bryant, the 7-foot-9-inch by 9-foot-7-inch modules are outfitted with the manufacturer's MODULAR or TH+ profiles, which are capable of handling greater wind loads. Each module comprises an external and internal insulated glass unit, both of which are operational, with tracks attached to an aluminate plate and water-proofed with silicone and a 1/8-inch sill pan.

The building is expected to open this fall.

Matthew Marani

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Rieder Facades for Visionary Paris-Saclay Eco-Territory



ZAC Moulon & Polytechnique ©Rieder Group

The Paris-Saclay campus employs geothermal energy for its heating and cooling network. For the facade, architects at Fricout-Cassignol specified concrete skin panels in polar white.

A scientific and technological hub to rival Silicon Valley is rising in the greater Paris region. The ambitious Paris-Saclay development brings together research buildings, educational and corporate campuses, and housing under the rubrics of innovation and sustainability. Architecturally, this virtual city prioritizes ecological construction methods and a future-oriented energy system at every level, right down to the energy facilities themselves.

Deceptively compelling

All of the Paris-Saclay development runs on geothermal energy that is distributed to the various "districts" via centralized facilities. Two of these facilities—one in the Moulon district, the other in the Polytechnique district—stand

out from their surroundings, thanks to the use of facade panels and formed parts by the Austrian glassfiber reinforced concrete (GRC) specialist Rieder.

The pair of buildings had no need for windows, which could have led to a monotonous design. But Hélène Fricout-Cassignol Architects used Rieder's new formparts.fab product to elevate the buildings beyond their utilitarian function. The resulting architecture is compelling and rhythmic, with GRC panels alternating with sharp-edged formed parts. The construction itself is exacting, and the uniform interplay of joints on the facade is remarkable. In another exciting architectural detail, at the Moulon facility the concrete facade elements give way to semitransparent segments; through gaps in the upper register

of the building envelope one can glimpse a green roof, which contributes to the architecture's sustainable mission.

Resource-saving innovation

Rieder's flat GRC panels, which are available in a variety of colors, surfaces, and textures, can be complemented by the new formparts.fab product. The latter offers a wide range of options for corners, edges, and front-mounted facade parts and as such is perfect for facades with challenging geometries.

Moreover, the GRC panels and the formparts.fab are made from the same robust and resource-saving GRC. All Rieder's products are "nontoxic," i.e., free of crystalline silica. Rieder has also reduced the energy it uses in

production to a minimum. And in line with its zero-waste policy, innovative technologies are deployed to reduce the number of offcuts as much as possible. When waste is produced, it is diverted to other areas—for example, into Rieder's eco-products, which are made nearly entirely of waste cuttings.

Rieder continually strives to develop sustainable concrete products. In this way, it hopes to make an active contribution to the energy revolution, such as what's happening at Paris-Saclay.

For more information about Rieder, visit www.rieder.cc.

RIEDER NORAM INC.
N3840 2nd St. Weyerhaeuser, WI 54895, US

Office Partition System

Enforcing boundaries to protect personal space and reduce unwanted exposure, the latest workplace dividers facilitate social distancing. By Gabrielle Golenda



Flek 3form

Flek is aptly dubbed for its terrazzo-like texture, which it gets from its core material: recycled trim edges encased in new panels. The collection is offered in six colors in 48" by 96" and 48" by 120" sizes.

3-form.com



Enclose Haworth

This partition system comprises unitized, factory-assembled panels and requires little to no setup upon arrival. Once installed, any panel or door can be removed or replaced without dismantling the entire system—making it progressively adaptable for changing work arrangements.

haworth.com



KOVA Commercial Glass Wall System KOVA

KOVA's glass partition system can be reconfigured and reused to serve different functions—from conference rooms to office fronts to partitions. The glass is offered in clear, opaque, or tinted treatments with optional custom ceramic printing.

kovaproducts.com



Velaria Rimadesio

Featuring shimmering mesh glass panels, this built-in and wall-fixed rail system provides veiled transparency for privacy. Custom-made in both height and width, Velaria moves smoothly along Rimadesio track systems, even in the largest configurations.

rimadesio.it



Residence Work Spacestor

Virtually soundproof, Residence Work creates a quiet haven within open offices. It is available in sitting or standing versions, with either glass or solid backing.

spacestor.com



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Air³ Orangebox

In a clever pairing of insulated glass and soft acoustic paneling, Air³ furnishes physical and auditory privacy in open-plan layouts. Orangebox's sizable library of interchangeable panels allows for easy design adjustments like changing colors or swapping fabrics.

orangebox.com



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Screens and Desk Dividers

How do you address social distancing measures in the office? These new screens and desk dividers can be easily reconfigured or moved, limit the passage of air between workspaces, and provide acoustic absorption. By Gabrielle Golenda



Ridge
Arktura

This partition system is made up of modular panels that piece together in multiple configurations to create semi-enclosed workspaces. Fashioned from either lightweight, antimicrobial felt or corrugated fiberboard, Ridge provides privacy in shared environments.

arktura.com



Discovery Space
Artemide

Artemide plans to install Discovery Space panels between desks at the company's headquarters, outside Milan, Italy. When installed vertically, the light fixture offers an inventive solution for separating workstations. Thanks to its varying degrees of transparency and different color options, all of which can be adjusted through an Artemide app, it fits diverse environments.

artemide.com



Nomad Screens
Nienkämper

These mobile screens are designed for office areas that need to adapt quickly. Available in acoustical or upholstered options, the system supports private and collaborative work and is easily paired with elements like digital screens, whiteboards, and storage cabinets.

nienkamper.com



Clear Freestanding Protective
Acrylic Shield
Poppin

Made of lightweight acrylic panels, this three-sided separation solution functions as a sneeze guard or portable shield. Offered in four easily movable sizes—27", 43", 48", and 58"—the self-supporting system can comfortably protect individual space in group meetings or provide separation between desks.

poppin.com



Shell
Uhuru

Retrofit desks or workstations with privacy panels that can be easily added and removed without damaging existing furniture. Single and group dividers are available in 18" or 24" heights and two materials: clear, frosted, or smoked acrylic, for a transparent or semitransparent look; and Zintra, a flame-retardant felt that reduces noise reflection.

uhurudesign.com



MixMax
Unika Vaev

This accordion-like screen folds in a jiffy for flexible configuration in ever-changing open office layouts. The system is covered in 100 percent wool felt available in over 30 colors.

unikavaev.com

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Harvard Business School Schwartz Pavilion



Above: View through upper canopy space that connects to the open space of the Schwartz Common on the campus of Harvard Business School.

Far left: Detail view of sliding and folding panels at west end of lower canopy space at Schwartz Pavilion.

Left: A detailed elevation and section of the pavilion's oversize glass doors.

Architect: REID architecture
Location: Boston

Landscape architect: Reed Hilderbrand
Design collaborator/artist: James Carpenter Design Associates
Civil engineer: Nitsch Engineering
Geotechnical engineer: Haley & Aldrich
Structural engineer: schlaich bergemann partner
MEP engineer: Vanderweil Engineers
Lighting design: Dot Dash
Construction manager: Consigli Construction

Steel fabricator/installer: Josef Gartner of Permasteelisa Group
Glass suppliers: CRICURSA, Sevasa
Oversize glass door fabricator: SUNFLEX Wall Systems
Oversize glass door installer: Modern Glass & Aluminum
Light fixtures: Inter-lux, Insight Lighting

Tucked beneath a stately London planetree in Harvard Business School's new quadrangle, in the Allston area of Boston, is a 4,168-square-foot contemporary structure that brings a laid-back, informal sensibility to a famously buttoned-up, McKim, Mead & White–designed campus.

Outfitted with a gas-powered fire feature, a bar, and Adirondack chairs aplenty, the Schwartz Pavilion functions as a breakout space for large events held at the neighboring 1,000-seat Klarman Hall, completed in 2018. More regularly, it provides an inviting alternative to the typical venues (e.g., drab, confining conference rooms) where student groups might meet.

Featuring a sheltered terrace and a glass-enclosed space framed by two soaring, overlapping steel canopies of different heights, the Schwartz Pavilion's design resonates during a time when natural light, air circulation, and the ability to spread out are

urgent considerations.

Efforts to maintain comfortable distances and bring the outdoors in are made easier with metal and laminated-glass operable doors, including frameless, top-hung sliding panels on the south side and at the northeast corner and folding/sliding doors on the west side. Fabricated by SUNFLEX Wall Systems, the lightweight deployable doors can be easily refigured, depending on privacy needs, event size, and weather conditions. (The structure relies on passive heating and cooling and is sited to account for that.)

During initial meetings with the school's campus architects, "our pitch was that it's not a building, but more of a landscaped space," explained architect Reid Freeman of Brooklyn, New York–based REID architecture.

Completed over two phases, with the final phase wrapping up in the spring of 2019, the pavilion was a close collaboration between REID Architecture, Cambridge, Massachu-

setts-based landscape architecture practice Reed Hilderbrand, and cross-disciplinary New York City–based design firm James Carpenter Design Associates.

The design also took student preferences into account: Freeman noted that students strongly requested a distinct character for the pavilion during working sessions. "They're always looking for opportunities to meet and hang out but not necessarily go off and make a commitment," Freeman said. "They really wanted a kind of backyard hangout space, just a place to informally socialize. And this informal aspect was just as important as programmed and planned events organized by the school." **Matt Hickman**

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Union Station: A Pilkington Spacia™ Restoration Project

A century ago Winston-Salem was the largest city in North Carolina. In the 1920s the tobacco market was thriving, and the need for a centralized building catering to travelers and industry became apparent. Tasked with designing what would become Union Station, architecture firm Fellheimer and Wagner looked to create an impressive and opulent space. (The firm even specified the same marble flooring found at Grand Central Terminal in New York City.) Natural illumination was a key design priority—Union Station featured more than 1,500 windows.

Over time, however, the demand for train travel decreased and the station was eventu-

ally decommissioned and sold. The structure deteriorated until it was repurchased by the City of Winston-Salem in 2012 and subsequently restored to its original elegant and classic look.

The building's original ¼-inch windowpanes were inefficient in regulating its heating and cooling needs. But glass technology has dramatically improved in the past 100 years: Most windows are now made with two pieces of glass that feature an air space in between—what's called an insulated glass unit, or IGU. When combined with low e-coating, IGUs are excellent at maintaining the temperature inside a building.

In restoring Union Station, Walter Robbs Callahan & Pierce Architects wanted to preserve the aesthetic of the original windows, including the metal sashes made for ¼-inch glass—much thinner than a typical 1-inch IGU. Pilkington Spacia™, the world's first commercially vacuum-insulated glazing, was the perfect fit. Made with two pieces of thin, low e-coated glass around a vacuum core, it has a thickness of around ¼-inch and the same thermal insulation of a standard IGU. What's more, it matched the original window sashes.

In addition to providing high-performance insulation and a thin profile for the sash, Pilkington Spacia™ is available in custom

sizes. (At least a dozen were used in the Union Station restoration project.) And because it is already a custom product, there are no added costs when different sizes are needed.

Compared with other restoration options, Pilkington Spacia™ is cost-effective and has an ideal thickness for window sashes in historic buildings. It also provides the thermal efficiency required in today's environmentally conscious world.

For more information on this project, check out the video here: <https://www.youtube.com/watch?v=Nduw5IQXAwU>.

Commercial Partitions

These durable, transparent barriers facilitate safe interaction in commercial areas. They address issues in a variety of environments, including offices that need cubicle dividers and hair salons that need barriers between chairs, and represent the latest partition systems to promote healthy workplaces. *By Gabrielle Golenda*



CRL Portable Protective Barrier Posts
C.R. Laurence

Perfect for supporting glass or acrylic barrier screens, this system has an easily deployable, freestanding design. Posts are available in standard heights of 24" and 36", with an optional center beam to connect multiple panels.

crlaurence.com



Cardinal SHIELD Glass Barriers
HMI Cardinal

Factory assembled for quick installation, these partitions are available in various premade arrangements to suit different applications. Made with Cardinal 10, a protective surface treatment, the system is easy to clean and resists scratching.

hmicardinal.com



glassSCREENS>Shield CARVART

Available as fixed or sliding screens, CARVART's adjustable shields allow users to control their level of exposure. In response to social distancing guidelines, CARVART developed a frameless version for maximum visibility and portability.

carvart.com



be! Clear Clarus

This sneeze guard on wheels features a cutout for taking temperatures or exchanging money, albeit at a distance. Made from antimicrobial, nonporous glass, the surface inhibits the growth of microorganisms and can easily be wiped clean.

clarus.com



Invisiguard GAMCO

This standing barrier system is an easy way to add clear tempered glass partitions to counters and desks. The nonporous panels have a hydrophobic coating, which repels oil and water (and respiratory droplets) to allow simple cleaning.

gamcocorp.com



PPE - Sneeze Guards Plexi-Craft

Manufactured in New York City, each of these acrylic partitions is cut and glued to custom specifications. Possible configurations include trifold screens, desk partitions, and screen covers—all of which are convenient to pick up and move around.

plexi-craft.com

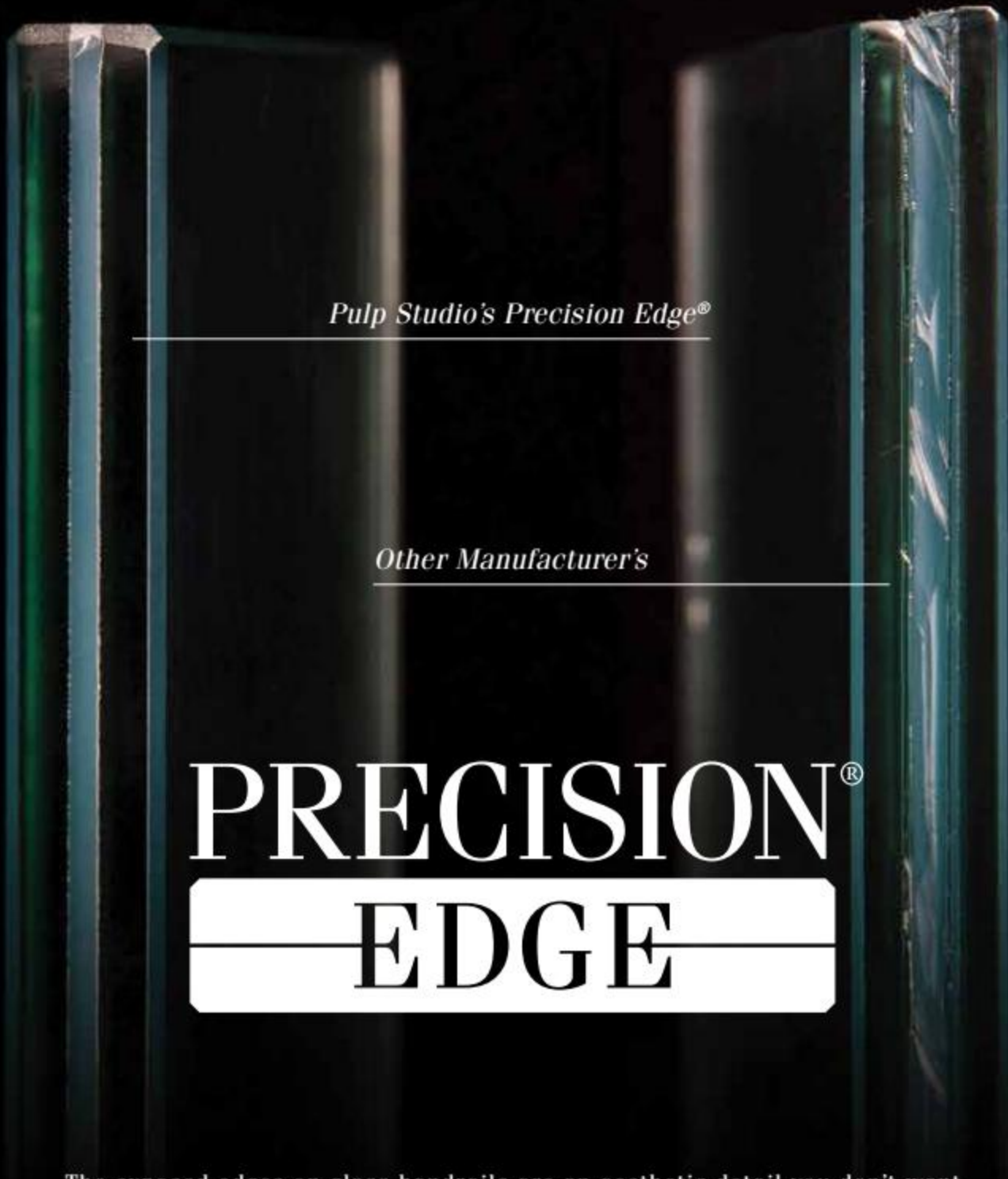
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Case Studies in Brief

These projects demonstrate innovative applications of windows and walls across building types as diverse as ADUs and sports stadiums. By Gabrielle Golenda

123 North Wacker Chicago

Architect: Wright Heerema Architects General contractor: Leopardo Companies	Product: NanaWall SL70 folding glass wall systems to provide daylight and ventilation. The glass doors open to reveal nearly invisible glass railings; visitors can step right up to panoramic views of the cityscape beyond.
--	--



COURTESY WRIGHT HEEREMA ARCHITECTS

Riverdale Country School The Bronx, New York

Architect: PBDW Architects Glass consultant: Forst Consulting and Architecture Acoustic consultant: Longman Lindsey Audiovisual consultant: Cerami & Associates	Construction manager: Shawmut Design and Construction Glass installer: Diversified Glass & Storefronts Product: Custom faceted monolithic glass panel assembly with DuPont SentryGlas interlayers
--	--

In the Bronx, New York, at the Riverdale Country School, Manhattan, New York-based PBDW Architects designed The Egg, an elliptical 400-square-foot meeting space nestled in the center of a lobby. The Egg, which contains an array of LED monitors visible to passersby, is fashioned from 18 uniquely shaped floor-to-ceiling glass panels. Each panel comprises two half-inch-thick, heat-strengthened, low-iron laminated glass pieces with a 0.09-inch-thick Dupont SentryGlas interlayer with a custom ceramic frit. The frit pattern is illuminated by floor LED strip lighting, accentuating the structure's geometry.



COURTESY FRANCIS DZIKOWSKI PHOTOGRAPHY

Landscape Forms Headquarters Outdoor Office Kalamazoo, Michigan

Designer: Landscape Forms internal design team Glass installer: StruXure	Product: Landscape Forms Upfit adaptive outdoor structure system
---	---

Outdoor furniture purveyor Landscape Forms wanted to give employees at its Kalamazoo, Michigan, headquarters a place to work outside during the few warm months of the year. The resulting space features semi-enclosed work areas shaped with the company's Upfit adaptive structures, which are made of base units that measure 16 by 16 by 10 feet and support a set of interchangeable wall panels, tables, seating, roofing, power modules, and lighting. Wall and roof panel options include louvers, slatted glass, and mesh growing panels with integrated weather sensors. Landscape Forms outfitted the 903-square-foot arrangement with interstitial partitions to create a comfortable and quiet alternative to the open floor plan inside.



COURTESY PETE MCDANIEL, STUDIO DVDP

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San Diego Garage Conversion

San Diego

Designers: Modern Granny Flat and Prismatic Architects
General contractor: Treadlight Construction
Installer: California Coastal Garage Doors

Products: C.H.I. Overhead Doors, Dixieline Lumber and Home Centers windows, custom sliding doors

In order to provide a flexible space that could accommodate a family's in-laws, Prismatic Architects collaborated with Modern Granny Flat to renovate the existing garage of a newly purchased home into an accessory dwelling unit. The team designed custom sliding walls to divide living areas that surround the central

kitchen and bathroom. Mobile panels open up or close off the bedroom, and a Murphy bed integrated into a bookcase converts the living room into a guest bedroom. Meanwhile, mobile islands allow for different configurations of the kitchen.



COURTESY MODERN GRANNY FLAT

Alley Cat

Seattle

Architect: SHED Architecture & Design
Structural engineer: Todd Perbix

Products: LaCantina aluminum lift slide door, Andersen E-Series windows, FAKRO center pivot skylights

Seattle-based studio SHED Architecture & Design was approached by a local couple to design a detached accessory dwelling unit with an open floor plan and primary functions on one level to accommodate aging in place. Named Alley Cat, the project is located on the east side of a Seattle lot, nestled between an alley-facing garden and a parking space. Shaped like a cat ready to pounce, the gable

is scaled to adjacent buildings with an asymmetrical ridge oriented to maximize sun exposure. In an upstairs space, four parallel skylights provide daylight. Downstairs, strategic privacy openings include a bathroom awning window and a peekaboo window along the kitchen counter. A sliding door opens the living space to the garden and patio while providing afternoon sun.



MARK WOODS

Phoenix Law Group

Phoenix

Architect: Studio Ma

Products: Arcadia windows and doors, VELUX skylights, custom glass partitions fabricated by Studio Ma

Phoenix Law Group approached Phoenix-based firm Studio Ma to convert an existing building into an environmentally sustainable workplace that could foster company culture. "The reimagined building needed to feel and operate as one large open office with strong visual connections among staff members, while also accommodating private offices where the firm's lawyers conduct sensitive, confidential work," said Christopher Alt, cofounder and principal of Studio Ma.

Custom interior glass partitions acoustically isolate enclosed offices and conference rooms while providing transparency to encourage collaboration. Daylight from skylights as well as the large glass windows and doors that line the building's exterior filters in throughout. For ventilation, the operable skylights let fresh air into work areas while venting hot air to the roof. A skin of Kebony wood louvers envelops the structure and shades it from the desert sun.



COURTESY STUDIO MA

Twin Cities Orthopedics Performance Center

Eagan, Minnesota

Architect: Crawford Architects
General contractor: Kraus-Anderson
Engineer: Henderson Engineers

Installer: Overhead Door Company of the Northland
Products: Custom Schweiss bifold liftstrap doors

Kansas City, Missouri-based Crawford Architects designed a new facility for the National Football League's Minnesota Vikings and the team's official orthopedic provider, Twin Cities Orthopedics. Located on 35 acres outside Minneapolis, the site comprises four practice fields, a 6,500-seat outdoor stadium, and a 98-foot-tall field house. A weight room features two floor-to-ceiling Schweiss bifold

glass liftstrap doors that open to outdoor practice fields. To allow players quick access to the weight room from the field, the designers included custom doors measuring 20 feet by 14 feet that create an 11-foot-tall opening when the doors are folded up. The access point is outfitted with sensors for automatic opening, as well as manual latch systems in case of a power outage.



BERGERSON PHOTOGRAPHY

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Touchless Openings

Public bathrooms, offices, healthcare facilities, and even homes are full of doors that might require gripping, pushing, or pulling. These solutions supplant hand-operated, germ-spreading mechanisms to enable automated opening even in high-traffic areas. *By Gabrielle Golenda*



6300 Series Low Energy Operator Norton Door Controls

Featuring a slim profile, this automatic door system fits discreetly on standard frames. The wi-fi-compatible operator is outfitted with sensors and offers wave-to-open switches as well as obstruction detection, power close, and latch assist functions.

nortondoortcontrols.com



Autoslide automatic doors Autoslide and EVO Systems

Retrofit existing patio, pet, and pocket doors with this teethed-track opening system. Its easy installation entails plugging the motor system into a wall outlet and positioning a cog that interlocks with its tracks.

autoslidebyevo.com



ESA100 Sliding Door dormakaba

Intended for commercial applications, ESA100 doors are furnished with a self-monitoring control system and overhead safety/activation sensors. The series is available with narrow or medium stiles and a transparent or dark bronze anodized finish.

dormakaba.com



Elevator Call System Mitsubishi Electric

This smartphone application enables users to call a compatible elevator from anywhere in a building by tapping the screen. To help waiting passengers, the app displays the assigned elevator's location in real time and notifies the user when it arrives.

mitsubishielevator.com



Theatrica Pirnar Doors

With a hingeless design, this door seemingly disappears into the wall. It uses facial-recognition technology to automatically unlock and open for registered users without any physical contact.

pirnardoors.com



Dura-Glide 2000/3000 STANLEY Access Technologies

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stanleyaccess.com

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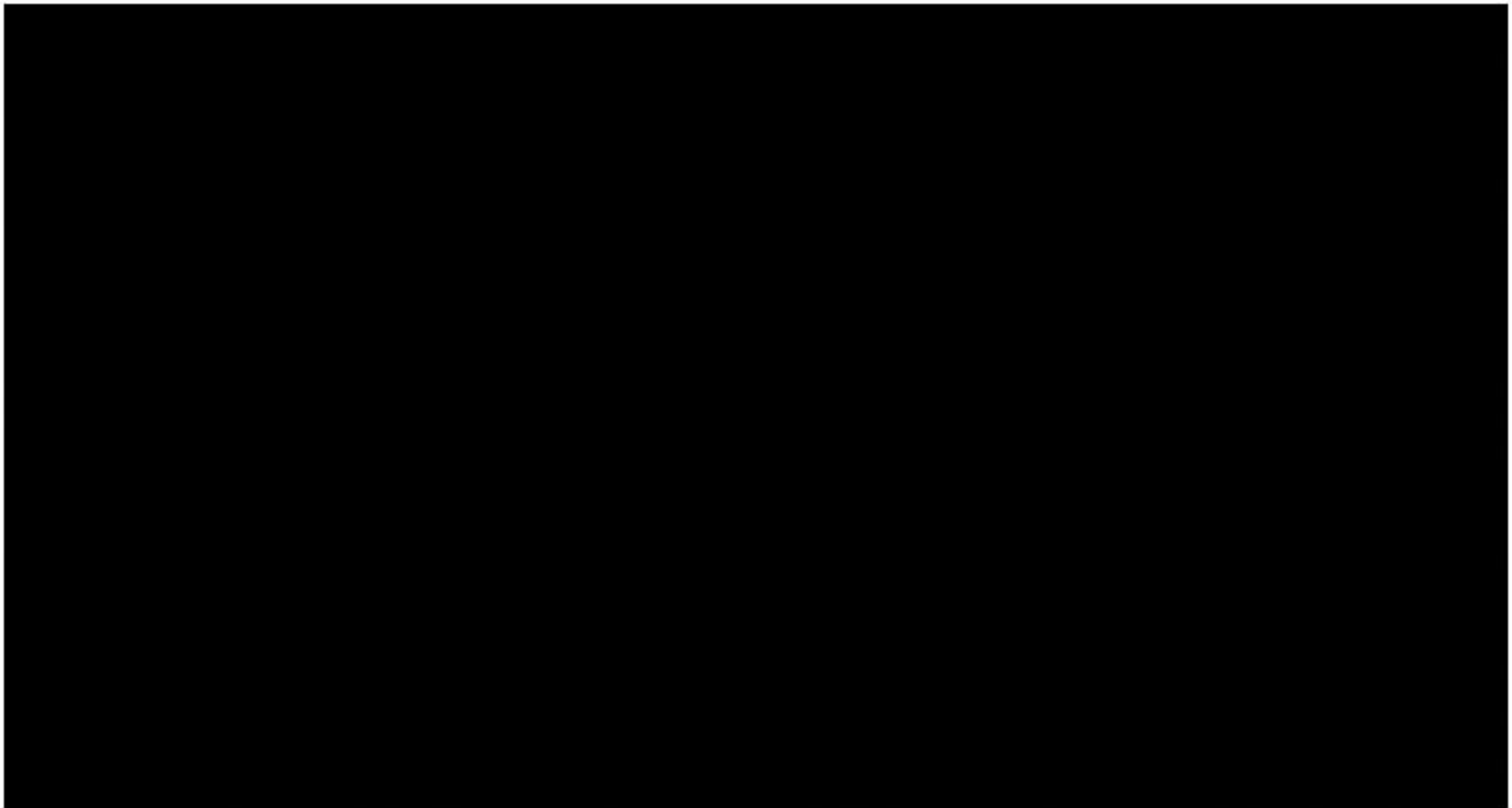
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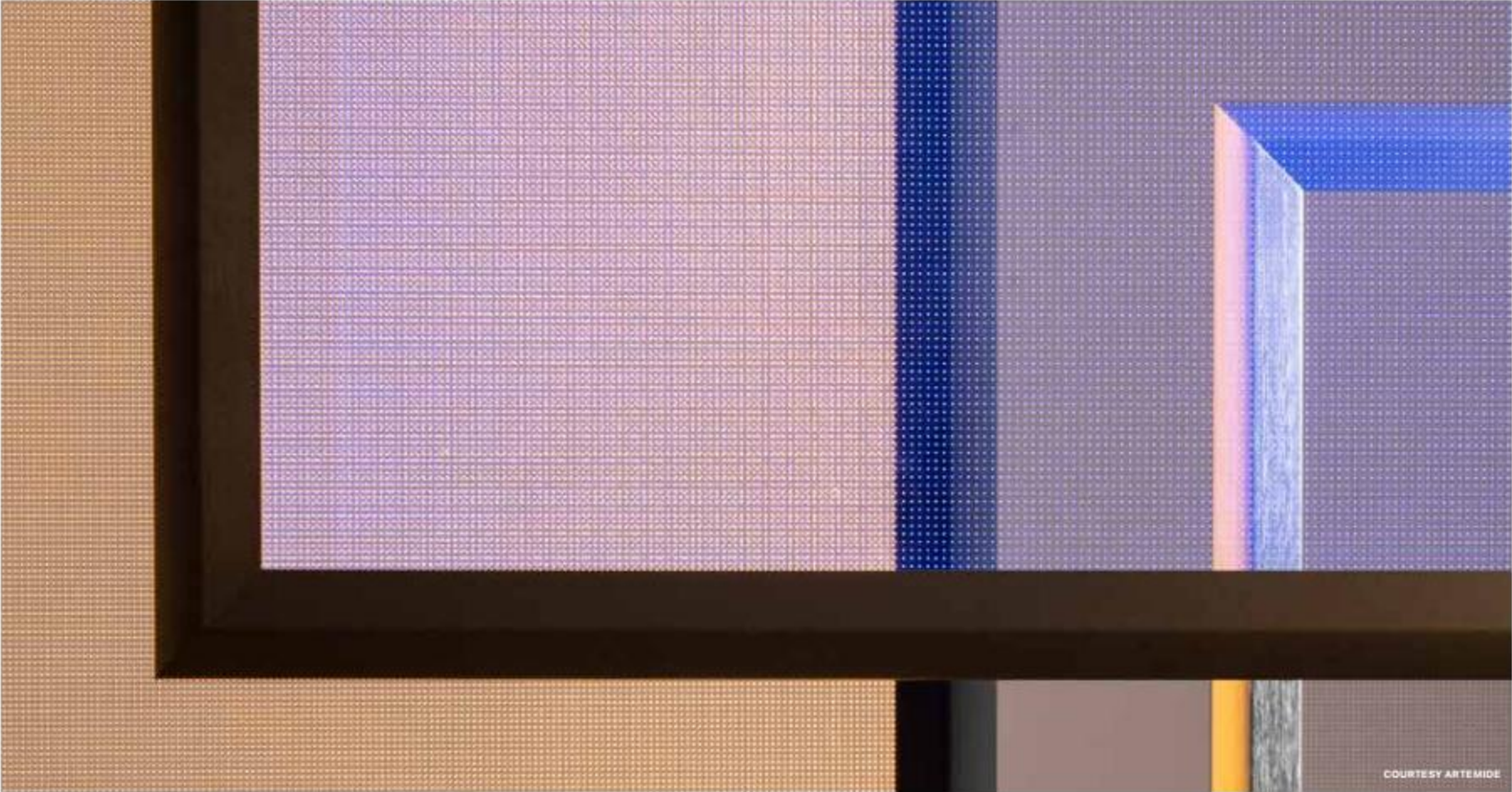
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East

The Design Festival NYC

Online event
thedesignfestival.nyc

Programming beginning online and around
NYC on July 15



Last year, media conglomerate SANDOW announced that it would be taking over the organization and operation of NYCxDesign in place of The New York City Economic Development Corporation (NYCEDC). Jean Lin—founder of the designer co-op COLONY and Tribeca Design District—opted to leave the steering committee after management changed from a city-run organization to a private media company. In favor of independent designers over expansion, Lin established The Design Festival NYC, a dynamic platform for the local design community.

Beginning July 15, the platform will introduce new digital content and an itinerary of

walking and biking tours that will highlight outward-facing designs in neighborhoods throughout the city’s five boroughs.

Content, both digital and physical, will be generated by the festival’s board of curators, which includes: Paola Antonelli, MoMA; David Alhadeff, The Future Perfect; Elizabeth Roberts, Elizabeth Roberts Architects; Malene Barnett, Black Artists + Designers Guild; Gabriel Stulman, Happy Cooking Hospitality; Annabelle Selldorf, Selldorf Architects; Karen Wong, The New Museum; and Wendy Goodman, *New York* magazine. **GG**

East

Neri Oxman: Material Ecology and Judd

The Museum of Modern Art
11 West 53rd Street
New York/Online
moma.org



The Museum of Modern Art (MoMA) might still be closed to the public, but thanks to its Virtual Views series of digital tours, every Thursday night “visitors” can check out what’s going on at the museum.

Through a combination of video, high-resolution images, audio guides, gallery tours, and interviews with curators and artists, MoMA has managed to digitize much of its current seasonal offerings. Of particular note are *Neri Oxman: Material Ecology*, a retrospective of the architect, designer, and material scien-

tist’s work with the MIT Mediated Matter Group, and *Judd*, a blowout survey of sculptor Donald Judd’s installation work, furniture, and legacy.

Now, from the comfort of one’s lockdown lair, visitors can enjoy audio guides of Oxman herself walking guests through the design process for four individual pieces, interviews with Judd’s son Flavin and three of (the elder) Judd’s former studio assistants, and a reading series of Judd’s writings. **JH**

East

FiDi Arsenale

Online event
fidiarsenale.org



For two weeks this past winter, an abandoned Irish pub called The Barleycorn in Manhattan’s Financial District (FiDi) played unlikely host to an art exhibition. The through-block space, at the bottom of one of the neighborhood’s remnant tenement buildings, still bears traces of its former tenant: signage is etched on plate glass windows and mirrors, and the chintzy decorative wood joinery remains in place, as does the extraordinarily long marble-topped bar (rumored to be the longest in the city). But what appealed to curators Bika Rebek, Matt Shaw, and Collin Clarke were the forlorn Barleycorn’s unusual proportions—narrow and deep—which recall

the Arsenale, a former shipyard turned art venue in Venice, Italy. Leaving all the Eireann signifiers untouched, the trio installed works by the Brooklyn artist Joshua Citeralla and architect Leah Wilfman, among several others, in situ.

FiDi Arsenale was open for all of two weekends (appointments made necessary) when COVID-19 put New York City under lockdown. Rebek, who operates the curatorial agency Hot Air with Shaw (who is also an *AN* contributing editor), made a digital scan of the space, art and all. The strange one-off experiment is preserved online in perpetuity. **Samuel Medina**

West

San Francisco Design Week

Online event
sfdesignweek.org

Through June 25



The 14th edition of the San Francisco Design Week is going virtual. This year’s event, which opened on June 15, comprises a series of live webcasts of panels and lectures, as well as virtual studio visits with Bay Area designers. Alana Washington, senior design program manager at Uber Freight, kicked off the event with a keynote address about the “recent social unrest and how it affects Black designers.” In two discussion series, design editors Zahid Sardar and Diane Dorrans

Saeks will conduct interviews throughout the week with designers and architects such as Takashi Yanai of Ehrlich Yanai Rhee Chaney Architects, landscape architect Andrea Cochran, and Stanley Saitowitz of Stanley Saitowitz | Natoma Architects. Other happenings will focus on a variety of topics, including design in a post-COVID-19 world, the climate crisis, empowering Black and Latinx designers, sexual health, and abortion access. **JBM**

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Spaceship Earth

Directed by Matt Wolf | Streaming on Hulu



A "Biospherian" assembles a scale model of the sprawling Biosphere 2 campus in Arizona. The saga of the failed social and ecological experiment is told in the new documentary *Spaceship Earth*.

It may not surprise that *Spaceship Earth*, the new documentary about Biosphere 2, directed by Matt Wolf and available now to stream online, is replete with references to science fiction. Biosphere 2 was, after all, an experiment in high-tech, closed-system, sustainable living in the Arizona desert, intended by its designers to be a literal dress rehearsal for habitation on Mars or the moon. But the 1990s-era project was also an exercise in both spectacle and speculation. Its initiation was branded a "launch." Eight people calling themselves "Biospherians" embarked on a "mission," attempting to live inside the three-acre facility for all of two years. In a revealing scene in the film, the project's PR strategist, Larry Winokur, is not afraid to go right to *Star Trek* metaphors when he talks about his ideas for drumming up media interest in the launch. "We had to 'beam them up' somehow," he tells Wolf's camera.

The vessel of the film's title is twofold. *Spaceship Earth* is a concept first captured in those terms by economist Barbara Ward, in her 1966 book of that title. The phrase was made popular by the architect and engineer Buckminster Fuller, whose influential 1969 book *Operating Manual for Spaceship Earth* makes an early appearance in the film, as part of the future Biospherians' library. Earth, in the story that the film tells, is Biosphere 1. But Biosphere 2 is conceived as a spaceship whose interior conditions were meant to replicate as many of those of its predecessor as possible. Rather ambitiously, its creators hoped that the project would offer lessons applicable in saving the original from ecological breakdown.

The structure of Biosphere 2 was designed by Peter Jon Pearce, a former assis-

tant of Fuller's, and its triangulated geometry owes much to the latter's famous domes and to large-span space-frame systems originally developed by Alexander Graham Bell. Inside these latticed vaults, roofs, and domes, Biosphere 2's ecologists placed several "biomes": a desert, a grassland, a tropical jungle, a mangrove swamp, even a small ocean, complete with a coral reef. This was the set of "wilderness" places, but there were more cultivated human spaces, as well, including dwellings, labs, farms, and extensive technological underground infrastructure. During the initial two-year mission, nothing was to enter or leave Biosphere 2 except energy, sunlight, and information, the latter transmitted by video and audio uplinks.

This may sound like the perfect place for self-isolation, especially with the stay-at-home orders of recent months in mind—but not much ran smoothly during Biosphere 2's quarantine. What started as a set of utopian experiments intended to improve life on Earth and in space ended up coming apart at the airtight seams. *Spaceship Earth* shows how the story of Biosphere 2 is ultimately not about the past or the future but the present.

The idealism of the group that led the construction of Biosphere 2 had its roots in the 1960s counterculture, and their trajectory is a familiar one. The filmmakers gloss over the extraordinary levels of privilege and social mobility that enabled all of this, and some of the backstory now sounds like a message from another world. One founding member of the group remembers that she didn't want to be a "typical New England wife" and was desperate to "figure out what the heck I was going to do."

"Let's do all of it," her co-conspirators decided, following the lead of their charismatic figurehead, John Allen. The collective created a DIY institution in San Francisco, part drama club, part group therapy—dubbed the "Theater of all Possibilities"—and then left the city in 1969 to found a commune in New Mexico called Synergia Ranch. From there, things only got weirder. This group of "Synergists" (another term borrowed from Fuller) somehow chanced upon an opportunity to build their own oceangoing ship—the *Heraclitus*—and spent the next several years sailing around the world, performing and founding institutions on every continent and convening scientific conferences on each of the biomes, which would later form the miniature world of Biosphere 2.

The key to this seemingly infinite expansion of potential for the future founders of the Biosphere—besides the boundless self-confidence of entitled white North American members of the baby boom generation—was the intervention of Texas oil billionaire Ed Bass. He bankrolled the group's expeditions, and their property acquisitions, in the hope that they would do "something amazing" with the investments, thereby increasing their value. In the film, the extant Synergists repeatedly call the construction of their ship, and all of the rest, a performance. One former member of the group says that the genius of their director, Allen, was that he helped people realize "it's all theater."

So the *Star Trek* aesthetics of Biosphere 2 are part of that theater. When the first mission breaks down, technologically and socially, the group pushes even harder to make sure the show goes on. They smug-

gled in supplies and air and then lied about it; they got into conflicts with each other and, with the help of their "mission controllers" on the outside, covered it all up. Even though Biosphere 2 was made of glass, transparency was an illusion, and even though the envelope was meant to be airtight, there were inevitable leaks to the media.

The underlying narrative about how the science-fictional idealism of the Biospherians was exploited by Allen—he held the line on maintaining the experiment for the entire two-year period—is frustratingly left as a subplot. The story of their heartbreak is a tragedy, but elsewhere things take a more comedic (and cynical) turn. Allen's funder Bass upstaged him, directing another set of made-for-TV productions that undermined Allen's scientific credibility and ultimately his claim to this pocket world.

Bass had hoped that the development of "eco-technics" in Biosphere 2 would be educational, but also profitable, and that these technologies of world-making could be licensed to future entrepreneurs in outer space. Saving the world turns out to be just another real estate investment scheme. To recover his sunk investments, Bass eventually brought in Steve Bannon, movie producer and future adviser to the reality television star turned president. If all of this miniature world is a stage, then the players themselves ultimately got played. No spoilers, but one of the lessons of the story of Biosphere 2 is that there's always a bigger showman waiting in the wings.

Fred Scharmen teaches at Morgan State University and is the author of the 2019 book *Space Settlements*.

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Unresolved Legibility in Residential Types

By Clark Thenhaus | Applied Research and Design Publishing | \$35.00



Rendering of Mountain House, a proposal for a dwelling in Utah by Endemic Architecture, Clark Thenhaus's firm

The new book from California College of the Arts assistant professor of architecture Clark Thenhaus, *Unresolved Legibility in Residential Types*, is an idiosyncratic rumination on ten different types of American residential architecture, their histories, and the rich content and compositional operations they offer students to lift from. Each chapter follows a structure that begins with a definition and description of a vernacular type (log cabin, Queen Anne, Federal, ranch, shotgun, etc.), moves on to diagramming the type's formal variations, and ends by extracting principles to generate a set of design speculations. This format allows a measure of unpredictability in how each type is handled but always includes insightful essays, historical reportage, drawings of found buildings, analytical diagrams, and renderings of the author's own projects.

The purpose of the book's diversity of content, tantalizing in different ways, can be difficult to apprehend at times. *Unresolved Legibility* both shares and deviates from the approaches of other well-known architecture books. Like Robert Venturi's *Complexity and Contradiction*, it is a collection of essays penned by a single author (Thenhaus) involving the formal analysis of buildings. However, because the many formal principles are subsumed under typology, one is unsure if these principles are forever tethered to their host type or if they can be decoupled as itinerant drivers of new design activities. Also, like Preston Scott Cohen's *Contested Symmetries*, the book contains both analytical case studies and the author's original designs. *Contested Symmetries* quarantines Cohen's own projects to

the last chapter, leaving an interpretive gap between the content of analysis versus design. *Unresolved Legibility* presents both side by side, which makes for a more direct and uncomfortable juxtaposition. As Thenhaus acknowledges, appending his own projects under his office's moniker, Endemic Architecture, does not mean that his designs are the conclusive outcome of each chapter's analytical readings, just that they are somehow situated in proximity to them. Still, by including his work this way, the book leaves the reader wondering about forms whose sources and motivations can't be situated within the boundaries of each chapter. And finally, Peter Eisenman's metaproject of architectural literacy (where design is a process akin to reading and writing) looms large here. Happily, Thenhaus chooses not to be shackled by Eisenman's project of autonomy; *Unresolved Legibility* celebrates the cultural politics of building practices and the many audiences that exist beyond the navel-gazing expertise of architects. Thenhaus devotes a considerable number of pages to sociocultural descriptions, content not found in Eisenman's *Ten Canonical Buildings*. In sum, though the book's priorities and organizations are sometimes inscrutable, there are plenty of delights throughout.

One such delight can be found in the chapter "Kit Homes & the Mathematics of the American Foursquare," which demonstrates how an overlooked tradition in American architecture can have renewed relevance in dialogue with today's obsessions. Thenhaus situates the American Foursquare within a succession of theoretic-

cal discussions on compositional ordering systems passed down through Rudolf Wittkower, Colin Rowe, Peter Eisenman, and Greg Lynn. He suggests that if Lynn was interested in the manipulation of an object's "anexact" geometry by way of an expanded field matrix, the evolution and genealogy of the Foursquare can be understood in reverse: as an object's local effects on a larger material and cultural field across space and time. He goes on to underscore the freedom of stylistic expression and configurable adaptation of the kit house as a nonideological fulfillment of democratic universality that modernists aspired to but could never achieve with their own dogmas of standardization. These points, taken along with Thenhaus's speculative drawings of wildly recombined kit houses, begin to imagine the kit home as a progenitor of a new aesthetic regime based not on postmodern semiotics, nor on parametric morphology, but on an emergent recognition of internet media and its effects on cultural forms that are deeply recombinant and developed collectively across platform-specific protocols. While my reading may be indulgent and overly determined in this instance, this chapter is an example of where Thenhaus's unique combination of description, analysis, and design speculation overcomes its overly specific concerns and becomes an overture to shared cultural inquiries.

While this book is admirably conversant with and extends upon current topics, terms, and forms familiar to those in certain corners of the architectural academy, it remains vague in its advancement of a contemporary project. The author makes sever-

al self-conscious statements about what the book is not: It is "not a guidebook ... not a monograph ... not an advocacy project for the quotidian ... [but instead] welcomes the proliferation of alternative conceptualizations." Although this negative expression is a common critical maneuver, it is important to speculate on how this book can make a positive claim for what it might be. To claim it is not a guidebook, pattern book, or monograph suggests that it could be something new. If anything, *Unresolved Legibility* is another example of work by an emerging generation of academically minded architects who are explicitly experimenting with the admixture of historical forms and digital processes. To be sure, this is not a revivalist approach to architectural design, but a project to stimulate the open-ended evolution of content and form—architecture renewed by a reciprocal exchange with culture and society. In the book's final essay, "Disciplinary Whimsy & Darlings," Thenhaus stakes his claim on the importance of bridging the perceived divide between the internal (formal, disciplinary, novel) and external (social, political, environmental) motivations of the discipline. And while his book clearly demonstrates the payoff of a practice engaged with both formal invention and contingent realities, it is perhaps more noteworthy that the most radical claim a young architect can make today is one that is all too reasonable.

Max Kuo designs with ALLTHATISSOLID and teaches at the Harvard Graduate School of Design.

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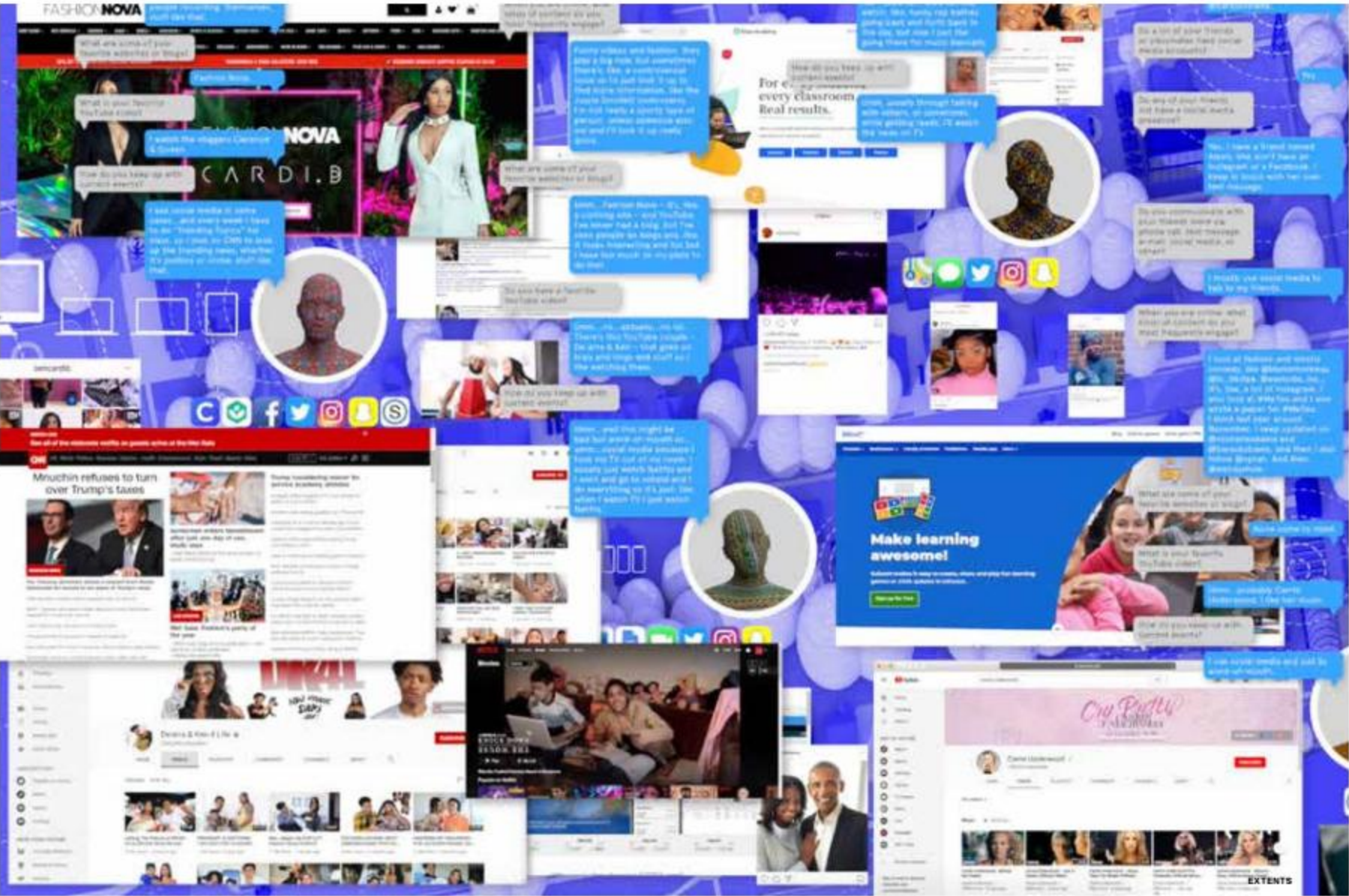
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Your Internet Connection Is Unstable

The pandemic put a strain on our telecommunication infrastructures, especially in underserved communities.



As part of EXTENTS' Online/On-site project, the author conducted numerous interviews with Detroit teens about their use of the internet.

Much has been made about the physical separation necessitated by the novel coronavirus. But the pandemic has also laid bare the digital divide separating communities across the country. Over the past few months, millions of Americans have had to shift their daily activities online with the help of web-based applications, productivity tools, and videoconferencing platforms. Everything from concerts to classes, office work to commencement ceremonies, was either canceled or expected to seamlessly transfer to the digital sphere until further notice, making many people more reliant on residential broadband.

This unprecedented surge in traffic has put a strain on our telecommunication infrastructure, especially in underserved communities. While the infinite expanse of cyberspace has made our social circles feel bigger than stay-at-home orders have physically permitted, not everyone has access to affordable high-speed internet or the privilege of working remotely. With even more pandemics of the current sort on the horizon, our ties to society—our interactions with loved ones, employers, teachers, news media, retailers, and even medical professionals—depend on the availability and strength of our internet connections.

The pandemic has also emphasized how

internet access is a spatial and material enterprise. For example, mapping is a spatial practice, but the maps used by the Federal Communications Commission to allocate funding for telecom services continually bungle data and misrepresent need, leaving residents in marginalized neighborhoods with few options for broadband. In a sense, these inaccurate maps justify inequity, excusing the lack of investment in places that would clearly benefit from it. The sudden appropriation of neglected urban space in these communities has only served to highlight the below-par connectivity available to them. Parking lots serving schools, libraries, sports arenas, and drive-through restaurants have been transformed into safe zones for people seeking free or fast wi-fi. Additionally, school districts across the country have converted buses into mobile hot spots and issued thousands of tablets to help children without reliable internet complete their homework. This distribution of devices is part of a larger network of digital technologies transferring above-average quantities of information through fiber-optic cables and energy-intensive servers housed in data centers around the world. At the building scale, seemingly tertiary considerations—the placement of a router, the number and proximity of devices, or the

type of wall finish—could impact wireless signal propagation and data transmission.

In my practice, EXTENTS, I've been investigating how these spatial and material elements can be designed to promote digital equity. Focusing on Detroit, a municipality with one of the lowest rates of internet connectivity in the United States, my work combines publicly available spatial data with local insights—gathered from interviews with government officials, nonprofit organizations, creative professionals, and high school students—in order to map digital access and exclusion across the city's neighborhoods. I asked Detroiters how the internet influences their sense of belonging, daily routine, and wishes for the city. In these conversations, it became clear that they share a desire for resilient digital infrastructure that allows everyone to go online, but they sometimes have conflicting opinions about how to achieve that goal.

Based on these observations, I'm exploring how municipally subsidized community mesh networks can support new public spaces, landscape strategies, ownership models, housing types, and other urban design elements. Distinct from traditional hub-and-spoke internet networks, mesh networks connect distributed fields of routers, leveraging the bandwidths of multi-

ple points of internet connectivity to create broad territories of wireless access. The dispersal of routers in a mesh network, often attached to residential balconies or rooftops, reveals a latent social network and, like the aforementioned parking lots, prompts us to rethink how public infrastructure can enable public assembly. More recently, I've been collaborating with a faith-based organization in Detroit to develop strategies that convert a church into a wi-fi access point for the community, while also affording educational and social programming.

The internet is inextricably linked to contemporary urban space. As the pandemic intensifies the demand for affordable broadband, designers must come up with more inventive ways to connect both physically and virtually, especially for lower-income minority and rural communities that are most in need. As for myself, physical distancing has complicated my public engagement work—I am having to think creatively so I can hear from people unable to get online—but I'm also motivated by the current situation. We all should be.

Cyrus Peñarroyo is a partner in the Ann Arbor, Michigan-based design practice EXTENTS and teaches at the University of Michigan's Taubman College.

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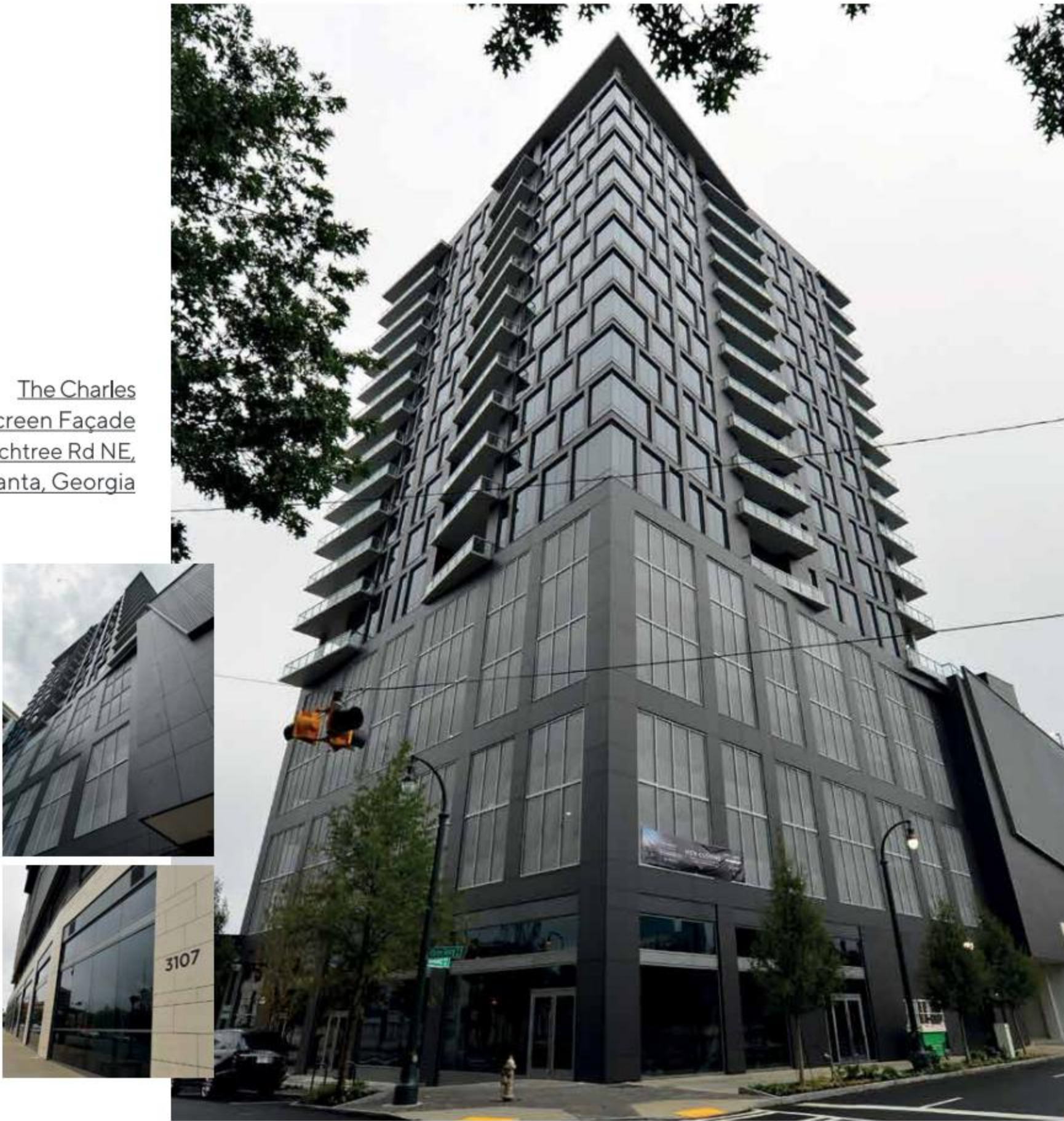
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