

# MASS

A firm that got its start building hospitals sees architecture as a medium for healing, not just through its public-health expertise but also by reimagining the spaces of everyday life.

BY JAY CHESHES PHOTOGRAPHY BY MARKN

# DESIGN GROUP

**A**S THE SPREAD of Covid-19 reached pandemic proportions last spring, MASS Design Group—a nonprofit architecture-and-design collective based in Boston and Kigali, Rwanda—began, almost immediately, fielding requests for emergency assistance. The Boston Healthcare for the Homeless Program, a social-service agency providing medical care to thousands of homeless Bostonians, asked for help erecting a treatment tent for Covid-19 cases. Doctors at New York’s Mount Sinai Hospital, slammed by the outbreak, called for advice on developing new spatial protocols. MASS quickly mobilized, creating its own Covid Response Team.

After more than a decade working in epidemic hot zones, designing hospitals and clinics focused on reducing the spread of infection in cholera-plagued Haiti and Ebola-ravaged Liberia, among other countries in crisis, MASS architects were in familiar territory when the worst global health crisis in more than a century hit home.

Instead of mapping out long-range plans, though, the team was suddenly responding in real time to

crisis scenarios, applying lessons learned in the developing world to American hospitals, restaurants, school systems and nursing homes, all struggling to keep the virus at bay. At Mount Sinai, they conducted a “quick and dirty study,” as MASS founding principal and executive director Michael Murphy, 40, describes it, working with doctors strapped with GoPros. The results were published in April as the white paper “Redesigning Hospital Spaces on the Fly to Protect Healthcare Workers.” Among other recommendations, the paper suggests adding “simple visual aids and design nudges” that convey “risk zones” and setting up “clearly marked donning and doffing areas” at entry points to Covid wards.

MASS consulted with the Institute of Contemporary Art in Boston on reopening safeguards and, with chef Jody Adams, a member of its board with six restaurants in Boston, on her pivot to takeout and serving front-line workers. “They helped us set up different zones—clean zones, dirty zones—and distancing and labeling,” explains the chef. The discussions with Adams informed another paper, “Spatial Strategies for Restaurants in Response to

Covid-19,” released in May, featuring detailed configurations for optimal social distancing and a wish list of safety measures, like washbasins for guests at check-in, isolated areas for food deliveries and “exchange tables” separating kitchen and waitstaff.

“It was really interesting to be in this position of, Oh, yeah, we’ve been studying the relationship between architecture and human health for a decade, studying the way the architecture of a building can make people sick or make people healthy—we might already have something meaningful to contribute here,” says Caitlin Taylor, a MASS design director assigned to the Covid Response Team.

We don’t often think of architects as first responders, but when the built environment contributes to making us sick—Covid-19 spreads like wildfire through enclosed, poorly ventilated spaces—good design might be elemental. Since its founding 12 years ago, MASS, short for Model of Architecture Serving Society, has built striking life-sustaining spaces across the developing world that abandon the hermetic markers of modernity in favor of more fundamental design solutions.

**COLLEGE LEVEL**  
The African Leadership University campus in Kigali, Rwanda. “Even before Covid, we had designed it from inception to be a very technology-enabled university, where students are doing a combination of online learning, but also a lot of peer-to-peer learning, where they learn from each other,” says ALU founder Fred Swaniker.



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—MICHAEL MURPHY



#### WORK STUDY

Left: A quiet area at the African Leadership University's Kigali campus. Right: Members of MASS's Rwanda team at ALU, from left: Jean Paul Sebuhayi Uwase, Amie Shao, Jean Paul Uzabakiriho, Bethel Abate, David Saladik, Noella Nibakuze, Christian Benimana, Nicki Reckziegel, Yvanie Kamikazi, Rosie Goldrick, Symphorien Gasana. Opposite: Nyarugenge District Hospital, in Kigali.



Started as a pro bono side venture when Murphy and his co-founders, David Saladik and Alan Ricks, were still students at Harvard's Graduate School of Design, MASS focuses on “architecture that promotes justice and human dignity,” as its mission statement says.

The collective has been consulting on infection control with public health specialists and doctors in the field since its first project, the Butaro District Hospital in rural Rwanda, completed in 2011. Working with limited resources in a region where tuberculosis spreads through windowless hospital corridors and power grids often fail, MASS developed elegant approaches to improving air circulation, with outdoor hallways and big windows that open onto manicured green space. “We couldn't actually afford large-scale, high-velocity, heavily maintained mechanical systems,” says Murphy. “Because we couldn't afford it, we designed the hospital inside out.”

MASS's health care-design strategies, which helped earn it a National Design Award from Cooper Hewitt, the Smithsonian's design museum, three years ago, borrow innovation from early epidemics, revisiting the past to create something new. “The ideas of natural ventilation and architecture go back to the last century really,” says Ricks, 37, MASS's chief design officer and a founding principal. “You can look at old hospital design—high ceilings, big windows, thin floor plates—to naturally cross-ventilate.”

Funded by a mix of fees and philanthropy, MASS operates largely outside the marketplace. And while many firms do pro bono projects, few are as singularly focused on noncommercial work as MASS is. The group is often a partner in its own projects, involved in fundraising and in early discussions of what form they might take. “They're not just saying, How do I build a building?” says Murphy of MASS's clients. “They're asking the question, How do I solve this problem, and what spaces do I need to solve it?”

Though MASS's built projects often provide

essential services to embattled communities—those struggling with poverty, natural disasters, wars and pandemics—the structures have always been designed to be beautiful, too. “In the argument about beauty there's been this debate that beauty is only available to those that can afford it,” says Murphy, “that beautiful things are purchasable, instead of the idea that the search for balance and regeneration and cultural change is what's beautiful.”

In Africa, MASS often works with local artisans to use indigenous building materials, an approach that started with the Butaro Hospital, which was made from the abundant underutilized volcanic stone around it. “It was basically a material with zero value in the region but also super emblematic [of the area],” says senior principal and managing director Sierra Bainbridge, 47, a landscape architect who worked on New York's High Line before becoming MASS's first salaried employee in 2009.

Along with hospitals and clinics, MASS designs schools and universities, affordable housing and urban master plans. In recent years the collective has begun working on monuments and memorials, too—grappling with gun violence, incarceration, the legacy of racial violence in the American South.

Last year, in partnership with the artist Hank Willis Thomas, MASS won the commission for a memorial to Martin Luther King Jr. and his wife, Coretta Scott King, sponsored by the privately funded nonprofit King Boston. It will be built on Boston Common, where King led a freedom march in 1965. The winning proposal, *The Embrace*, features an enormous bronze sculpture of disembodied arms locked together, surrounded by a rippling landscape. “It's based off a photograph of Martin Luther King and Coretta Scott King holding each other at the reception of the Nobel Prize,” says Thomas. “As I looked at it, I saw he was holding her so tightly and she was really under him, felt like she was holding him up, this kind of beautiful embrace.” MASS designed green space around it that

contributes to “this idea of a ripple of hope but also the ripple of love that went around the world as a result of their companionship and partnership,” says Thomas.

The new memorial, still a few years out from completion, follows on MASS's work for crusading human rights lawyer Bryan Stevenson's Equal Justice Initiative. MASS, which served as the architecture firm for EJI's National Memorial for Peace and Justice, was one of several collaborators on the memorial dedicated to the victims of lynching, which opened in Montgomery, Alabama, in 2018. (Brought together by EJI, MASS and Thomas had their first creative encounter there, with Thomas contributing a sculpture, focused on police violence, to the site.)

“It occurred to us early on, if we're going to address this question of healing through design, it happens on multiple scales,” says Murphy. “It happens in our body, breathing better; it happens regionally through better structural systems—fair labor, fair wage, fair material use—and then it happens on a national scale in terms of national trauma, national identity, national truth-telling and reconciliation. And that seems to manifest spatially through monuments, memorials, the public realm.”

Along with the King memorial, the MASS team of 140 architects, engineers, builders and craftspeople has a busy pipeline of other work underway, none of it sidelined, so far, by Covid-19. They're continuing discussions that began before the pandemic with New York chef Dan Barber on reimagining what his Stone Barns complex outside the city might become, mapping the evolution of its pioneering mix of fine dining, sustainable farming and educational programming. Next year they're starting construction on their biggest health-care project to date, a 500-bed teaching hospital in Dhaka, Bangladesh, one of the densest cities on earth, for Nobel Prize-winning social entrepreneur Muhammad Yunus. A second big hospital, years in the making, is halfway to completion outside Liberia's capital, Monrovia.

In Rwanda, the firm's original Butaro Hospital is now part of a sprawling MASS-designed medical campus with more than a dozen buildings, including an oncology support center that opened last year. Two more Rwandan hospitals are also almost done, along with a conservation center for the Dian Fossey Gorilla Fund in northern Rwanda.

Though the Kigali campus MASS designed for Ghanaian educational visionary Fred Swaniker's African Leadership University was largely completed before the pandemic, it might have been conceived with the outbreak in mind. "Even before Covid, we had designed it from inception to be a very technology-enabled university, where students are doing a combination of online learning, but also a lot of peer-to-peer learning, where they learn from each other," says Swaniker.

ALU's hilltop campus, the second in a planned continent-wide network, delivers a critique, says Murphy, of the "very expensive and overbuilt" Western university. Its student body will come from some 40 African countries when it fully opens next year. "The end goal," says Swaniker, "is a network of institutions that develops three million leaders for Africa by 2035."

A second MASS-designed university, the Rwanda Institute for Conservation Agriculture, or RICA, is under construction south of Kigali, conceived and funded by the American philanthropist Howard Buffett's foundation, in partnership with the Rwandan government. It may have the most sustainable campus in Africa when its timber and rammed-earth buildings, surrounded by pristine woodlands, are finished next year. "We're replanting this indigenous rainforest to be its own carbon bank," says Murphy.

MASS, which published its debut monograph, *Justice Is Beauty*, last year, also has a pair of museum shows planned in the coming months. The first, a broad survey at the National Building Museum in Washington, D.C., originally slated to open last spring, was pushed back by the pandemic to early 2021. "When we do open, the sharp light of the acute situation we're in is going to make their work resonate even more," says the show's co-curator, Susan Piedmont-Palladino. "It's not that these issues weren't present before, but now we can't turn away."

Among other artifacts, the exhibit will feature a prototype for a new national memorial to the victims of gun violence, developed by MASS in partnership with Thomas, who lost a close cousin to a shooting 20 years ago; Chicago nonprofit Purpose Over Pain; and other nonprofit organizations. The project, featuring small glass houses filled with keepsakes donated by grieving families, builds on ideas Thomas first explored back in 2003, when he created a sculpture out of bullets as his own gun violence memorial. "We are the client to some degree...we're raising the money, we're doing the design work," says Murphy. "It's challenging, because it's not how an architecture firm works. But why not work this way?"

The partners hope eventually to cover the National Mall with 52 of the glass houses displayed in prototype form at the museum—a temporary installation in the early planning stage—with the ultimate goal of building a permanent home for them elsewhere. "It's 52, representing the number of weeks in a year, so people are able to quantify the number of Americans

killed every week, and also the 50 states and...D.C. and Puerto Rico," says Jha D Williams, the architect heading the gun violence project at MASS.

A second museum show on the history of health-care design—including the Spanish flu of 1918 and our current 21st-century pandemic—opens later next year at Cooper Hewitt. "We completely changed the concept to reflect, really, what's a breaking story," says Ellen Lupton, Cooper Hewitt's senior curator of contemporary design, who has been working with MASS on the show. "Usually museums study things that happened [long ago], or something contemporary, it could be 1980. We're looking at things where we talk to the designers, 'Did you do that in March or in April or in July?' It's pretty unprecedented."

Murphy, MASS's charismatic frontman, spent the last days of summer finishing up a companion book to the Cooper Hewitt show, updating ideas he's explored onstage at the TED Conference and in classes he's taught at Harvard and Columbia universities.

His 2016 TED Talk, on "architecture that's built to heal," starts with the emotional story of his awakening to a career as an architect. Murphy grew up in a 19th-century Arts and Crafts house in Poughkeepsie, New York, that his father, a local politician, often spent weekends fixing up. "Every weekend for as long as I can remember," his TED Talk begins, "my father would get up on a Saturday, put on a worn sweatshirt, and he'd scrape away at the squeaky old wheel of a house that we lived in. I wouldn't even call it restoration; it was a ritual, catharsis."

A few years after Murphy graduated from the University of Chicago with an English degree, his dad received a cancer diagnosis that gave him three weeks to live. Murphy moved home to be with him. Weeks and then months passed. His dad's health steadily improved. Soon father and son were standing side by side restoring the family home, together tackling years of unfinished work. Eighteen months later, Murphy told the TED audience, "there was my father, standing with me outside, admiring a day's work, hair on his head, fully in remission, when he turned to me and he said, 'You know, Michael, this house saved my life.'"

Murphy enrolled in architecture school at Harvard the following fall, in 2006. A few months into his first semester there, he stole away from final reviews to take in a lecture, by Harvard physician Paul Farmer, that would change his life. Since the 1980s Farmer's nonprofit, Partners in Health, has fought to bring the benefits of modern medicine to some of the poorest, most marginalized people on earth. Murphy approached Farmer after his talk, wondering if there were architects involved in his humanitarian work. Farmer turned the question back on the student. "He said, 'Why haven't the architects reached out to us?' recalls Murphy. "'Why haven't you all come to us to see how you can be of service?'" That night, Murphy followed up with an email offering to do just that.

Murphy's father eventually succumbed to cancer, in the spring of 2007, and Murphy spent that summer in Rwanda, volunteering with Partners in Health. "He started right away just doing things that we asked him to, like redesign a laundry shed," says Farmer. "Of course, you knew this is not what inspires architects, to do other people's bidding." Murphy worked



CLOCKWISE FROM TOP LEFT: MASS DESIGN GROUP (6); IWAN BAAH (9); MASS DESIGN GROUP; IWAN BAAH; MASS DESIGN GROUP (8); IWAN BAAH (PORTRAIT); MASS DESIGN GROUP



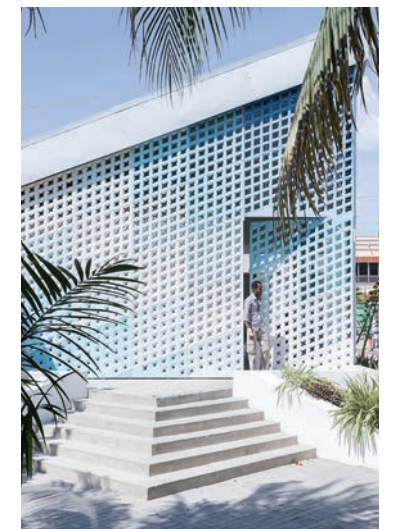
**CRITICAL MASS**

Clockwise from left: Sierra Bainbridge, Michael Murphy and Alan Ricks, three of MASS's 17 principals; Ilima Primary School in the Democratic Republic of Congo; the Equal Justice Initiative's National Memorial for Peace and Justice in Montgomery, Alabama, which opened in 2018; a sculpture by artist Kwame Akoto-Bamfo at the National Memorial for Peace and Justice; a rendering of *The Embrace*, a memorial to Coretta Scott King and Martin Luther King Jr., designed with artist Hank Willis Thomas, to be built on Boston Common; the Family Health Center at Virginia Parkway in McKinney, Texas.



**PROJECT OVERVIEW**

Clockwise from left: Butaro District Hospital; a rendering of a new teaching hospital being built in Dhaka, Bangladesh; the Gun Violence Memorial Project at the 2019 Chicago Architecture Biennial; the GHESKIO Tuberculosis Hospital in Port-au-Prince, Haiti; the GHESKIO Cholera Treatment Center, also in Port-au-Prince; Maple Street Housing, in Poughkeepsie, New York.





**SCHOOL WAYS**  
 Left: The Umubano Primary School in Kigali. Right: Claudine Mukamana and Joseph Nsengimana, farmers working next to the campus of the Rwanda Institute for Conservation Agriculture, or RICA, south of Kigali. Opposite: The RICA campus, with outdoor gathering spaces.



closely with the head engineer there. “He was just excited to have someone to work on [projects] with him,” Murphy recalls, “and I got to see things that I worked on get built in a matter of weeks. It was a profound experience.”

Murphy and Farmer kept in touch when Murphy returned to Harvard in the fall. A few months into the new school year, Farmer asked for help with a district hospital he was planning in northern Rwanda, near the Ugandan border. Murphy found a handful of classmates eager to brainstorm ideas. “It was a group of us, a number of our friends, that saw this as a great opportunity to have some meaning, to use design to do some good in the world,” says Ricks, who sat across from Murphy in their studio class. To have something official to stamp on their plans, they came up with a name for their informal clique, the acronym MASS, telegraphing their good intentions.

But being far removed from the building site, working in Cambridge off grainy Google Earth images, the novice designers struggled to come up with a workable plan. Nonetheless, Murphy and Saladik flew to Rwanda in the summer of 2008 to present their ideas to Farmer and his team. They ended up bunking with the future hospital’s doctors. “We spent the summer basically redoing all the work we had tried to do the previous year,” says Saladik, 37, now a senior principal, “because none of it made any sense when we got to the site.”

Murphy and Saladik responded to input from their housemates and to a challenge from Farmer to deliver a functional and beautiful space. “The question I kept asking them,” says Farmer, “was why the worst tourist hotel in Rwanda is still better than the best district hospital.”

At the end of the summer, Murphy decided to stay on in Rwanda, taking a year off school. The Butaro District Hospital opened almost three years later, a few months before he finished his architecture degree. By his graduation in the spring of 2011, MASS had

officially launched, with offices in Boston and Kigali, and a new team member, Sierra Bainbridge, with real-world experience, bringing a landscape dimension to every project they took on. “I see public space and landscape as a way people can access the healing properties of nature and the environment,” she says, “as a way of thinking about how design can heal.”

Bainbridge, who’d replaced Murphy in Rwanda to see Butaro through, set up a pipeline for growth there when, at the government’s behest, she helped establish the country’s first school of architecture, embedding the MASS approach to design into the launch curriculum and eventually hiring many of the school’s graduates. “When we started, we were a small group, six to eight people,” says senior principal and managing director Christian Benimana, 38, one of MASS’s first local hires, who started as a design fellow in 2010. Benimana, who studied architecture in Shanghai, now oversees a team of 111, as head of MASS’s Kigali office. In the 10 years since he started, he says, “we’ve been demonstrating [that our approach] is possible everywhere, under almost any circumstances, under any structural arrangement.”

Even before Butaro opened, the project had the global health community talking. The young architects at MASS got very busy, very fast. They started working in Haiti after the 2010 earthquake. They were developing a tuberculosis hospital there when cholera began spreading through the country’s drinking water. MASS responded with a cholera treatment center that processes its own wastewater on-site. “What is most amazing to me is nothing is impossible with them,” says Dr. Jean William Pape, the firm’s client in Haiti through his GHEKIO organization.

And MASS was working in Liberia in 2013, consulting with the government on its health infrastructure plans, when Ebola began to cripple the country. The deadly outbreak unleashed a flood of aid funding, enough to finance the new hospital they designed for Monrovia, opening next year. “It’s this fully open-air

hospital, this restorative place,” says Murphy, “working with local artisans, local materials—the brick block you see everywhere in Liberia—a place of research and education, so not just a place of death.”

Though MASS started out working almost exclusively abroad, for the past five years the firm has been on a push to expand its American footprint. “We were always hoping to find that opportunity to work in our own communities at home,” says Saladik. “It just took a bit longer to get there.” The group set up a satellite design studio in Santa Fe—focused in part on Native American issues—and another in Murphy’s hometown, Poughkeepsie, that’s become a sort of case study on postindustrial urban renewal.

The Poughkeepsie work started with an email from a Murphy family friend, Brian Doyle, who heads the Family Services nonprofit there. “You’re doing all this work all over the world,” he wrote, according to Murphy, “why don’t you come back to your hometown and do some work here?” “It really hit me,” he says, “not that I didn’t ever think there was work to be done, but no one had asked.” MASS recently completed its first ground-up project there, an affordable housing complex, and is at work on a sustainable food hall and a new urban trail along the Fall Kill creek.

Lately, the MASS team has been exploring what work life might look like after Covid-19. Their new Boston headquarters, designed during the pandemic and opening next year, will embody “the highest aspirations of a healthy environment,” says Murphy, “with enough air changes per hour so people could be in there during flu season and not contaminating each other, as a showpiece of what’s possible.”

With the world more attuned than ever before to the spread of infection indoors, the MASS expertise ought to be in demand for a while. “Working with them on anything to do with safe spaces in the middle of a pandemic would be a breeze,” says Farmer, “because they have a literacy you don’t find even in the medical community.” ●

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—SIERRA BAINBRIDGE

