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Beyond the Glass

BRINGING NEW LIFE TO A HARLEM ICON WITH HELP FROM PELLA ARCHITECTURAL SOLUTIONS.

Boys & Girls Club of Harlem | Dattner Architects | New York, NY

After 30 years of vacancy, Public School 186 was on its last leg. Built in 1903, the school was known for its Italian Renaissance Revival architecture and needed to be preserved for listing on the National Register of Historic Places. The Boys & Girls Club of Harlem called upon owner Dattner Architects and the Pella Architectural Solutions team to save the historical landmark while adding the innovation and performance of a new build.



JARON VOS Manager, Architectural Solutions

INNOVATING SOLUTIONS

"Preserving history is one of our greatest passions. So when Dattner asked if it was possible to give these windows a performance upgrade while maintaining historical accuracy, we got excited knowing our products offered the solution," explained Jaron Vos, Manager of Architectural Solutions at Pella.

Original photographs, on-site trim remnants and extant school drawings helped the team envision and recreate the building's period look while they added a few upgrades. Pella* Architect Series* aluminum-clad wood products – with custom trim – met the criteria for historical accuracy while still delivering low-maintenance exteriors and other modern-day innovations.

RECREATING HISTORY

One of the more complicated projects was recreating the building's fourth-floor windows. They had curve-top exterior openings and rectangular-top interior openings, requiring a special outside-to-inside transition. The windows were monumental in size, with some



as large as 5' wide by 10' high, making a complicated task even more challenging. Pella created new custom-designed aluminum extrusions for the vertical and horizontal mullions to go between and around windows. This solution matched the original wood trim while adding a new level of durability. Acoustics were addressed with a unique glazing assembly and glass panes of varying thicknesses for better sound transmission resistance.

EXPERTISE THAT DELIVERS

The insights and innovation brought to the table by Pella experts made this project possible. And after four years, Public School 186 was transformed from a run-down building to beautiful, affordable housing and headquarters for the Boys & Girls Club of Harlem.

"It was incredibly rewarding taking fragments of history and bringing it back to life with innovations that will stand proud for generations," said Vos.

CUSTOM ARCHITECTURAL SOLUTIONS IN EVERY CORNER

Aluminum-clad wood Curve-top/rectangular-top windows Sound-attenuating windowpanes Custom aluminum trim





Preserving the past, building the future.

As Public School 186 in Harlem, New York, eclipsed 30 years of abandonment, its iconic architecture was in serious jeopardy. Dattner Architects and the Pella Architectural Solutions team worked together to bring new life to the building with custom solutions for complicated needs. Using old photos and architectural remnants found inside, Pella preserved the historical accuracy while adding modern innovations and durability.

FROM REMNANTS TO RESTORATION.



pella.com/historicalsolutions



Volume 10g, number 4. April 2020. On the cover: Countryside, The Future, by Rem Koolhaas and Samir Bantal of AMO at the Guggenheim Museum in New York City; Photo by Connie Zhou

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Rem Koolhaas may pose some timely questions in his *Countryside, The Future* exhibition at the Guggenheim, but the show fails to measure up to the magnitude of the current moment.

Volume tog, number 4. April 2020. ARCHITECT® (ISSN 1935-7001; USPS 009-880) is published monthly by Hanley Wood, 1921 5th Street NW, Suite 750, Washington, DC 20005. Copyright 2020 by Hanley Wood. Opinions expressed are those of the authors or persons quoted and not necessarily those of The American Institute of Architects. Reproduction in whole or in part prohibited without written authorization. All rights reserved. Printed in the USA. Periodicals postage paid at Washington, DC, and at additional mailing offices. POSTMASTER: Send address changes to architect. P.O. Box 3494, Northbrook, IL 60065, Canada Post Registration #4067;2608/(G.S.T. number R-12033738, Canadian return address: IMEX, PO. Box 3542, London, ON NGC 6B2. For subscription inquiries, address changes, and single-copy sales (\$10 in the US., \$15 in Canada, \$20 for other countries, payable in advance in U.S. dollars) write to ARCHITECT, PO. Box 3494, Northbrook, IL 60065, Canada Post Registration #4067;2608/(G.S.T. number R-12033738, Canadian return address: IMEX, PO. Box 3542, London, ON NGC 6B2. For subscription inquiries, address changes, and single-copy sales (\$10 in the U.S., \$15 in Canada, \$20 for other countries, payable in advance in U.S. dollars) write to ARCHITECT, PO. Box 3494, Northbrook, IL 60065, Canada Post Registration #407;252,529;50 or that event to advance in U.S. dollars) write to ARCHITECT, PO. Box 3494, Northbrook, IL 60065, or ather countries, payable in advance in U.S. dollars) write to ARCHITECT, PO. Box 3494, Northbrook, IL 60065, or ather countries, payable in advance in U.S. dollars) write about companies in which its parent organization, Hanley Wood, has an investment interest. When it does, the magazine will fully disclose that relationship. PRIVACY OF MAILING LIST: Sometimes we share our subscriber mailing list with reputable companies we think you'll find interesting. However, if you do not wish to be included, please call us at 888,269,8410.

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THE SURPRISING STORY BEHIND FLORIDA'S FIRST NET-ZERO HIGH SCHOOL

NeoCity Academy breaks the mold with a 20 energy use intensity, six-year payback, and affordable tilt-up concrete envelope.



If God is in the details, then NeoCity Academy, Florida's first net-zero public high school, may be blessed with a touch of the Divine.

The \$13.2 million, 44,820-square-foot magnet school opened in the fall of 2019 to greet Osceola County's top STEM students. The 500-student facility is also a masterclass in the power of construction detailing.

Just ask the lead architect, Philip Donovan, AIA, LEED AP BD+C, and studio principal of Little Diversified Architectural Consulting's Community Practice. Working closely with the project's general contractor, Gilbane Building Company, Mr. Donovan and the project team achieved a remarkable set of energy distinctions:

 20 energy use intensity (versus a national average of 68 EUI)

- \$115,000 in annual energy savings
- 76% less energy used than a typical Florida school
- Generates 365 kWh and consumes only 346 kWh, a net energy surplus

The good news for school leadership and county taxpayers: The cost came in *below* the state's tightly prescribed budget system.

HIGH PERFORMANCE, LOW COST

Mr. Donovan credits extreme detailing of the tilt-up concrete envelope for much of the school's stingy energy use. Tilt-up concrete construction is popular with Florida school officials for its economy, durability, and installation speed. The mass of the concrete panels is also an effective barrier to central Florida's notorious heat and humidity.



"Concrete is the best air and water barrier money can buy. It's the most durable for the cost, time, and schedule," says Mr. Donovan. But could a comparatively low-cost, tilt-up solution offer the kind of envelope performance expected of a net-zero energy structure?

PROVEN MEANS AND METHODS

"We couldn't come in with a bunch of new systems. We had to work with proven means and methods everyone understood," Mr. Donovan explains. The architect had seen the effect of careful detailing on a couple of net-zero school projects in Virginia. Maybe an even more rigorous approach to NeoCity Academy could yield similar or even better results.

To put his ideas to the test, Gilbane constructed a three-sided building mockup with

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BUILD WITH STRENGTH

a roof representing every material connection spec'd for the project, each joint redundantly sealed up to five times with common, inexpensive materials. "We're 40 miles from the Space Coast. We didn't send a man to the moon with just one system, right? We had redundant systems. If one failed the others ensured success. We took a similar redundancy approach to each joint," Mr. Donovan says.

BREAKTHROUGH RESULTS

Expectations were high that this extra measure of TLC around the doors, windows, roof, and panel joints could be productive. The results startled everyone. "Building code requires that air leakage must not exceed 0.4 CFM. We specified 0.15 CFM. The testing equipment registered just 0.027 CFM. The testing guys thought their equipment was broken. They had never seen such a low CFM." Mr. Donovan says.

The architect is quick to point out many other factors that contributed to the building's miserly energy use, from the distributed arrangement of 38 heat pumps to the photovoltaic rooftop array that minimizes thermal bridging. Today, the students, faculty, and staff of the academy are delighted with a building that not only supports an immersive, hands-on learning experience but also demonstrates surprisingly affordable netzero building performance.

SIX-YEAR PAYBACK

Marc Clinch, chief facilities officer for the Osceola School District, the building's owner, is delighted. "NeoCity Academy proves there is a more cost- and energy-efficient way to build schools. This represents a less than six-year payback on our investment. That's phenomenal for a building that will serve the community for many decades."

The possibilities with tilt-up concrete construction has made a believer out of Mr. Donovan. NeoCity Academy is his first tilt-up concrete project. "The school expects to save \$115,000 a year in energy expense. That's equivalent to two or three teachers' salaries." For school officials, the lessons of NeoCity Academy are like an answer to a prayer.

To learn more about designing with tilt-up concrete, visit BuildWithStrength.com.

Project: NeoCity Academy High School, Kissimmee, Fla. Owner: School District of Osceola County Architect: Little Diversified Architectural Consulting General Contractor: Gilbane Building Company MEP/Fire Alarm Engineer: CMTA -Landscape Architect: Redmon Design Civil Engineer: Hanson Walters Photos: Mark Herboth





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Picture Perforated

The first academic building to open on Cornell Tech's Roosevelt Island campus, the **Emma and Georgina Bloomberg Center** aims for net-zero energy performance, a mission that drives its advanced aesthetics. Designed by **Morphosis**, its facade of pixelated perforated aluminum and curved glass provides both thermal protection and inspiration for a new generation of research. Read more about it in **Metals in Construction** online.



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Super Mario

The Tappan Zee Bridge, revolutionary in its day, was well past the end of its operational life. Replacing it with the new Governor Mario M. Cuomo Bridge, a span of more than three miles across the Hudson River, required erecting a structurally complex cable-stayed design with careful attention to the river ecosystem. The resulting "smart bridge" takes an active role in monitoring its own performance while carrying traffic-a triumph that will benefit the Hudson Valley for generations to come. Read more about it in Metals in Construction online.



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CATEGORIES

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Entries will be judged for their R+D methodology and documentation, impact on the building industry, and potential to advance the aesthetic, environmental, and social value of architecture.

RECOGNITION

Winners will be featured in the July issue of ARCHITECT with expanded coverage online at architectmagazine.com.

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The awards are open to architects, designers in all disciplines, engineers, manufacturers, and researchers. Full-time academics (faculty and students) receive a discounted registration rate.

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Utopias Aren't What They Used to Be

Designs for Different Futures, a traveling show organized by the Philadelphia Museum of Art, the Walker Art Center in Minneapolis, and the Art Institute of Chicago, is one of the best compendia of utopian thinking I have seen in a long time. Like all good utopias, it evokes nostalgia and dread as much as it inspires us to dream of a better future. Despite the promise of inclusive and empowering communities, tools for people with disabilities (such as the Phoenix Medical Exoskeleton, shown), and alternatives to the depletion of natural resources, it seems as much an elegy for the human body and the planet as a celebration of what is possible. —AARON BETSKY



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Farrell and McNamara Win Pritzker

A celebratory pint of Guinness seems in order, as Yvonne Farrell and Shelley McNamara have been named the 2020 Pritzker Architecture Prize laureates. Partners since 1978, the two are having a particularly good year, as their Dublin-based office, Grafton Architects, has also received the 2020 RIBA Royal Gold Medal. Farrell and McNamara graduated from University College Dublin in 1974, where they have both taught regularly since. They curated the 2018 Venice Architecture Biennale with the theme of "Freespace," describing it as "a generosity of spirit and a sense of humanity at the core of architecture's agenda." —EDWARD KEEGAN, AIA

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Henry Cobb in His Own Words

Pei Cobb Freed & Partners founding partner Henry Cobb, FAIA, passed away last month at 93. Born in 1926, Cobb earned his M.Arch. from the Harvard Graduate School of Design in 1949, and chaired the architecture department there from 1980 to 1985. His well-known John Hancock Tower in Boston received AIA's Twenty-Five Year Award in 2011. In an interview with ARCHITECT marking the occasion, he observed, "If I was going to say, "What have I contributed as a professional in my life?" I would say the idea of a contingent building. That is to say, a building that is not autonomous, not self-referential, but which is shaped by its place." —MADELEINE D'ANGELO

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The Rules: Understanding the CCPA

TEXT BY TERRI PETERS

Your firm's website does many things: showcase your best work, attract prospective clients and consultants, connect colleagues, and recruit talent. But is it also collecting information about your visitors? And how is that data being stored or used?

Concerns about user privacy are nothing new, but as of this past January, architecture firms must determine if their website, data collection practices, and online exchanges with clients, consultants, and employees need to comply with the California Consumer Privacy Act.

The CCPA was enacted to let state residents know what personal data is being collected about them, whether that data is sold or shared, and how to request its deletion, among other rights. Personal data, as defined by the CCPA, includes visitor name, machine IP address, email address, and even biometric information and geolocation data collected from IoT devices, such as smart thermostats and appliances.

"Gone are the days of collection and use under a simple privacy policy," says Tom Kulik, a Dallas-based partner at the law firm Scheef & Stone. "Architecture firms will need to specify categories of personal information they are collecting along with how it is being used and shared. The hardest step for [them] will be implementing such data governance practices as they have not needed to do so in detail until now."

Architecture firms must comply with the CCPA if they are for-profit companies and meet any of the following threshold requirements: they provide services to, or collect personal information from, California residents, including, for example, asking visitors to sign up for updates, query human resources, or complete a Contact Us form; the firms collect the personal information of at least 50,000 users, households, or devices; or they have gross annual revenues exceeding \$25 million. (The CCPA also applies to businesses that derive more than half of their revenue from selling user data.)

Qualifying firms must, at minimum, adopt and publish a clear privacy and data collection policy that states what personal data is collected and how it is used, sold, or shared. Their sites must also display a prominent opt-out button. Legal counsel will be necessary to adopt changes to websites and contact forms.

The penalties for noncompliance are significant. California residents whose non-encrypted or non-redacted information is stolen, hacked, or otherwise disclosed may at minimum sue to recover damages of at least \$100 to \$750 per instance of noncompliance that is not addressed within 30 days. "Consumers may file class action suits for privacy losses under the CCPA without requiring them to show any evidentiary loss of property or money," Kulik says.

The CCPA, Kulik believes, emerged in response to the European Union's General Data Protection Regulation (GDPR), which already required many



international firms to update their policies and websites. St. Louis, Mo.based HOK assistant general counsel Donovan Olliff, AIA, says the CCPA requires additional action by firms due to its distinctions from the GDPR. While they share objectives relating to an individual's rights over their personal data, their basis of consent differs: CCPA requires users to opt out, whereas the GDPR requires users to opt in.

The broad language in the CCPA nearly guarantees future revisions, and firms will need to keep up. Given the absence of federal legislation, other states will likely take similar protection measures for their residents. Kulik recommends all firms, regardless of whether they meet the qualifying criteria, to review the act in order to "adopt good data governance practices to ensure they aren't caught off guard by changes to the CCPA or other forthcoming state laws" that may require their compliance. "It's not just sound data practice," he adds. "It's sound business judgment."

> This article kicks off The Rules, a new monthly series covering important regulations in a clear manner. Read more at bit.ly/ARtheRules.

Architectural Lighting: 2020 Product Call Highlights

TEXT BY MURRYE BERNARD, AIA

Meticulous conception and design, technical advancement, and versatility are commonalities among the 22 products selected, out of 198 entries, in this year's ARCHITECTURAL LIGHTING + ARCHITECT Product Call.



Enlighted One, Enlighted

The capabilities of this out-of-the-box wireless lighting control system include daylight harvesting, task-tuning, and vacancy detection, resulting in energy savings of up to 65%. Lighting behavior can be programmed from the switch. An optional upgrade enables access to a suite of IoT applications, such as smart energy management, without modifying installed fixtures. *enlightedinc.com*

Pin, Vibia

This wall-mounted fixture by Tokyo-based industrial designer Ichiro Iwasaki can double as art when arrayed in multiples across a surface. Its adjustable, rotatable shade contains a polycarbonate diffuser that can create ambient glow or provide dedicated task lighting. A steel rod extending from a 4"-diameter Zamak base connects to a 24"-diameter aluminum dome shade. Offered in a black or cream matte finish and with a 153" arm, 272" arm, or a combination. *vibia.com*





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Architectural Lighting: 2020 Product Call Highlights



Purolinear 360, Sonneman-A Way of Light

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This modular system comprises linear tubes of LEDs set within surfacemounted cylinder connectors that rotate 360 degrees to direct light. The direct/ indirect luminaire can vary illumination across large and narrow planes, and transition between wall and ceiling mounting. Available in 24", 36", and 48" lengths and in end, linear, corner, T, and X styles. sonnemanawayoflight.com

Light Column RGBW Bollard, Forms+Surfaces

These bollards offer programmable color that can be customized, animated, and switched to dynamic white; daisychained fixtures can be controlled simultaneously. An optional powder-coat finish on the stainless-steel profile offers branding and wayfinding opportunities. Uses a programmable DMX512 protocol and Cree RGBW LED chips. forms-surfaces.com





Rize, Lumenwerx

Designed with input from medical professionals, Rize provides ambient, examination, and reading light for health care settings. Available in many color temperatures—2700K, 3000K, 3500K, 4000K, BIOS lighting, tunable white, and dim-to-warm—with a color rendering index (CRI) of 80- or 90-plus, and in three standard finishes or a custom finish. *lumenwerx.com*



Glowball, OCL Architectural Lighting

This 4¹/₄"-diameter pendant can hang alone or grouped together in large-scale installations. The spherical fixture features a die-cast, powder-coated or brushed aluminum body and a durable, injection-molded, silicone diffuser that will retain its shape if flexed or bent, easing installation and maintenance. Available with static white, tunable white, or RGBW light sources. *ocl.com*



Commercial Integrated LED, Solatube International

By incorporating an LED fixture in a tubular daylighting device, this hybrid, minimalist ceiling fixture transitions seamlessly from day- to nighttime use. The LED automatically dims to supplement the available daylight, and can deliver 3,250 to 10,000 lumens at 4000K and a CRI of 80. With a zero-to-10V dimming option. *solatube.com*



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inter-lux.com/linealight





The 20 Linear profile is a versatile architectural lighting tool developed to allow designers the freedom to work with light in an instinctive way. Utilizing the small form factor, the range includes a family of profiles all based around the same high-performance linear LED technology, developed by Whitegoods specifically for this product line.

20 Linear Plaster Trim



20 Linear Perimeter Regressed Bezel Trim



20 Linear Flush Grid Trim

inter-lux.com/whitegoods

Architectural Lighting: 2020 Product Call Highlights

Eclipse, ERCO

The Eclipse range of spotlights offers enough sizes, optics, hues, connectivity options, and accessories to create 28,000 illumination possibilities, according to the manufacturer. A bayonet mount connects interchangeable lens units to the slender cast-aluminum fixture. The optics create their specific light distribution using non-reflective, dark-light lenses that produce a nearly indiscernible beam path that is free of spill light. The rotationally symmetric light distributions range from narrow spot (5 degrees) to extra wide flood (80 degrees). Available in five sizes, four color temperatures from 2700K to 4000K, and CRIs of 82 to 97. erco.com



WAC InvisiLED CCT SELECT 30 0 2700K-5000K BJ 1 101

InvisiLED CCT Color Temperature Adjustable Tape, WAC Lighting

This wall- or ceiling-mounted, architectural-grade tape light can illuminate coves or provide task lighting in dry or damp locations. Delivering up to 660 lumens per foot in five color temperature options, the tape can be cut and reconnected every 4", with uniform brightness for the full run, which can reach up to 100'. waclighting.com

Cliff, Eureka Lighting

This wall-mounted luminaire can be installed angling upward or downward, and in a single- or dual-light direction. With an aluminum housing and sealed integrated driver, Cliff is IP65 and UL Wet rated. Offered in 3000K, 3500K, or 4000K, and in a textured black or white finish. Phase dimming and zero-to-10V dimming are available. *eurekalighting.com*







WGD9, A-Light

Recessed 3" into ceilings, the WGDg wall washer produces a 7-degree beam of light that accentuates wall textures. Featuring a reflector optic technology and clear acrylic diffuser, the light evenly grazes the wall with minimal hot spots or dead zones. Available with a regressed gypsum or T-bar installation option, and in 4', 8', 12', or custom lengths to the nearest foot. *alights.com*

BeveLED Mini Cylinder, USAI Lighting

Available as a cable-suspended or solidstem pendant, surface-mounted fixture, or wall washer, these architectural luminaires are housed in extruded aluminum with a 3½"-round or -square profile, at 8" or 10" long. Delivering up to 2,025 lumens, the fixtures are available with USAI's proprietary dimming standard and tunable white LED technologies. *usailighting.com*



Knit-Wit, Made by Hand

The traditional Chinese rice lamp and the craft of knitting served as inspiration for this family of lamps by Iskos-Berlin Design. The fixtures are made using CNC-controlled 3D knitting technology, and by stretching their flame-retardant polyester shades over powder-coated aluminum rings. In four sizes, from pendants to tabletop and floor fixtures, and in 12 colors. madebyhand.dk

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Architectural Lighting: 2020 Product Call Highlights



A flexible LED strip embedded with wall-washing or wall-grazing (shown) optics, DuraFlex Optics provides consistent color in both indoor and outdoor applications, particularly in areas with unique architectural curvatures. The strip can be field-cut for custom lengths. The collection includes a range of accessories, profile choices, and multiple dimming options. DuraFlex Optics is Title 24 compliant and IP66 rated. The strip is available in static white at 2700K, 3000K, and 4000K color temperatures, and a CRI of go-plus. *targettiusa.net*

Smart 1.9, Modular Lighting

Each 1‰"-diameter downlight in this collection can deliver more than 300 lumens. Combine with a square or rectangular finishing plate to form a recessed luminaire. Fixtures and plates, or masks, come in black, white, and gold. A single housing can hold one or two fixtures. In 2700K, 3000K, or 3500K color temperatures. *supermodular.us*

Instruments

Lumencore, Lumenpulse

This extensive family of LED downlights in 2³/4" or 4" diameters can generate thousands of configurations. Options include fixed, adjustable, or wall wash, as well as a range of bezel depths, trims, optical distributions, and finishes. A spring-loaded core mechanism allows for on-site additions or swaps after initial installation. The dimmable line can be wired or controlled digitally using Lumenpulse's Lumentalk technology; it is also control agnostic. The Lumencore family includes products that are IP54, IP55, and UL Wet rated, as well as Title 24 compliant. *lumenpulse.com*



SpectraClean, Hubbell Lighting

Combining a disinfection solution with a commercial lighting product, SpectraClean is a portfolio of troffers and vapor-tight and strip-light luminaires that combines white and narrowband 405nm light to provide continuous, unobtrusive, and chemical-free disinfection, according to the manufacturer. The line combines high-intensity narrow-spectrum (HINS) technology with integrated wireless control support to support four modes of operation for occupation and/or cleaning: blended, blended plus, independent, and dedicated. Available with multiple standard lumen packages. *hubbell.com*



PGL8, Kim Lighting

This low-profile parking garage luminaire is the first drop lens, edge-lit luminaire to offer 200 to 600 lumens of uplight with no additional wattage needed for visual comfort and optimal performance, according to the manufacturer. The IP66-rated, 16"-diameter fixture features four distribution types, including a Type V square distribution for maximum luminaire spacing and uniformity. Available with integral battery backup, ULg24 bypass options, and a variety of control solutions. *hubbell.com*



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Architectural Lighting: 2020 Product Call Highlights





Da Flayo, Archlit

This outdoor wall- or ceiling-mounted linear fixture angles at 15 degrees as standard; custom angles and stem lengths are possible. Da Flayo consists of an aluminum LED tray sealed with black polycarbonate end caps and O-rings. A diffusion film smooths illumination from the LEDs. Mounting canopies can be shared for runs. The IP66K-rated fixture offers zero-to-10V dimming, a symmetric or asymmetric lighting distribution, and color temperatures of 2700K, 3000K, 3500K, and 4000K. *archlit.com*

Profile Mini, Fluxwerx

At 2" tall and 2%" wide, this diminutive linear LED pendant can be installed as a single fixture or as a continuous lighting system. It delivers more than 115 lumens per watt from a sub-1½", hollowed aperture that creates a U-shaped cross-section. Available in 4'- to 24'-long runs and with an up-down lighting control option that provides fully dimmable or switchable control. End caps can be flat, bevel, capsule, or square; fixture finish options are clear anodized; powder-coated black, metallic silver, or white; and custom colors. Available in 3000K, 3500K, or 4000K with CRI of 80-plus. *fluxwerx.com*



Elliptipar S230 Fully Recessed Wall Washer, The Lighting Quotient

This luminaire delivers uniform top-tobottom illumination using a proprietary optical system that shapes the light into an asymmetric beam with a primary reflector while a refractive lens softens and eliminates striations. An internal baffle shields the LEDs. Available in three sizes, six lumen packages, and with a lowprofile trim flange or flangeless option. thelightingquotient.com



Madre, Foscarini

Madre was conceived by designer Andrea Anastasio as a poetic object with overtures to mythology, statuettes, the movement of heavenly bodies, and the alternation of day and night. An internal vessel made of frosted borosilicate glass in the 14%"-tall, 13%"-wide body serves as a vase; the base conceals an LED light source. Heat-resistant glass protects living contents, while a center aperture allows in ambient light. *foscarini.com*




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Opinion: We Can Save the World

TEXT BY AMANDA STURGEON, FAIA



I've championed sustainability in the architecture profession for the last 20 years, the last half of which I spent at the International Living Future Institute, in Seattle. As I depart from my four-year tenure as the ILFI's CEO—and as we fall chaotically into a new decade with the realities of climate change made clear through the Australian bushfires—I can't help but wonder: Did I achieve anything? Was the fight worth it?

Being on the innovative edge of any issue requires a wealth of grit and determination along with a handful of foolishness. In the past decade, I have been told hundreds of times that manufacturers would never disclose their products' ingredients, and that zero-carbon buildings were not possible. I was talked over, talked down, and dismissed because my bold vision for our collective future threatened the status quo.

It certainly would have been easier to accept that the industry is slow to change, that short-term economic gain—rather than the health of the planet and its people—is the focus of development. Arguing that economics and the environment could go hand in hand only got me so far. For design professionals, criticizing from the sidelines was more common than joining forces to envision how we could scale healthy, zero-carbon buildings. Taking incremental steps allowed the prevailing corporate model to remain preserved and unchanged.

Over time, I discovered that economic arguments can help motivate owners to commit to some proactive measures, such as eliminating toxic materials from their offices. Initiating policy changes that introduced incentives for forward-thinking businesses also helped.

But education proved to be the most vital ingredient. By increasing awareness about healthy, zero-carbon buildings among literally thousands of architects, designers, and builders, I helped to establish a groundswell of support for high-performance environments. I was no longer alone in advocating for significant change.

A few built examples that demonstrated that zero-carbon projects were possible also helped. Gradually, owners and policymakers stepped up to help implement a new vision for buildings and cities—and, importantly, enough architects and designers took a leadership role to make that happen.

Momentum continues to build. In January, Microsoft committed to becoming a zero-carbon company, referencing the ILFI's Zero Carbon Certification as a goal. It joins other major companies across sectors— Google, Salesforce, and Kingspan—that have previously made carbon reduction commitments with the ILFI. Despite the struggles, the fight has been worth it.

Now the reality of global climate change is setting in, and the urgency to change our built environment has increased. Fewer and fewer architects and building owners can ignore it as each month goes by. We have about a decade left to turn the global building and infrastructure sectors around, or life as we know it will change drastically.

For meaningful change to happen at the pace necessary, the built environment sector will have to transform holistically. We will have to shift our fundamental relationship with nature to make a whole systems change. Only then can we restore a positive and thriving relationship with the world. Only then can we solve the climate crisis.

In the next decade of my career, I now know that I want to influence the systems, government policy, and social fabric that can help the building and infrastructure sector shift quickly, on a global scale. I am inspired to take the lessons from nature and the natural systems that surround us and apply them to the built environment.

If I can offer architects one lesson from my past two decades, it's this: Before you start your next project and try to cram in every sustainable strategy that you can muster, take a step outside and just ask, "What would nature do?"

> Amanda Sturgeon, FAIA, is the former CEO of the International Living Future Institute. She lives on Bainbridge Island, Wash.

> To read more opinion pieces by thought leaders in the design community, visit bit.ly/AROpinion.

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Next Progressives: CO-G

EDITED BY KATHARINE KEANE

Location: Boston Year founded: 2018

Firm leadership:

Elle Gerdeman, AIA, and Kyle Coburn, AIA



Education:

Gerdeman: BFA, Miami University; M.Arch., Harvard Graduate School of Design; Coburn: B.Arch., Miami University; M.Arch., MIT

Firm size: Two to three

How founders met:

In a history of architecture class at Miami University

Origin of firm name:

It's a collection of our names, but we also like how the prefix "co" is associated

with collective, collaborative, coconspirator, co-opt, even company. It is at once a classic dual-name architecture firm and an acronym that takes on more identifiers. We don't see our office as being fully formed, but our names unlike our ideas about architecture won't change in the future.

Mission:

CO-G is a collaboration. We like to test many variations of a thing. We produce architecture that is simultaneously familiar and unusual—even mischievous—through a typological drift, a material misreading, a primitive process, and imaginary origins. We're also into mirages, furriness, and lore. We think architecture can wear many hats and be described by any number of adjectives, so we aren't interested in being too absolute. We prefer to approach each project with a curious experimentation and let things develop from there.

Favorite project:

Brookline House is a reframing of contemporary domesticity via a surgical "hack" in the floor plan and circulation sequence, and a complete repositioning of the house's massing and façade.

Second favorite project:

Plum Island House has a simplicity to it that makes it seem like a found artifact. While it draws on one of the most conventional building techniques in Boston—wood-framed cedar shingleit is averse to being categorically Bostonian. We were interested in the volumetric properties of the shingle, wrapping both orthogonal and curved perimeters, and seamlessly blending them to cause an uncanny sense of typological familiarity.

Modern-day architecture hero:

Lately, it is Amsterdam-based Studio Anne Holtrop for its use of molds, casting, or shaping to create forms that are impossible to draw or represent. In its work, we see a proposition for architecture to be less defined.

Special item in your studio space:

We have a little box of odd materials that is filled with unspecifiable items like foamed metal, lava rock, squishy silicone, bismuth, glow-in-the dark sand, and reflective beads for highway paint. Construction always favors products that are easily specified and found in catalogs. This box is a reminder to search for things outside of what is readily known or available.

Biggest design challenge you've overcome:

Acknowledging that we can't do everything, or else risk doing nothing. We are trying to learn to manage schedules in a way that is reductive rather than additive, such that we have time to prioritize a conceptual pursuit.

A design trend to revive:

Adolf Loos's furry bedroom

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COURTESY CO-G









1. CO-G's reimagination of the 1940s catalog Brookline House includes introducing dark modern cladding and axial windows to define interior spaces. 2. Living areas in the 1,280-square-foot Plum Island House in Newburyport, Mass., are defined by three curvilinear volumes clad in cedar shingles. 3. The 2,140-square-foot Carr Residence in Johnstown, Ohio, features "discrete volumes, arranged around two triangular circulation nodes," according to the firm. 4. Each wall of this five-sided artist studio in Tesuque, N.M., features a cutaway that aligns with the roof, creating irregular window apertures. 5. The Dimple Chair combines traditional handcraft with milling technology to create a seat with irregularly exposed grain. 6. The Serriframe walkway canopy proposal uses laser-cut weathered steel to replicate the form of bricks with mortar joints. 7. The walls of this salon for cancer patients in Dublin, Ohio, are covered in ornamental polyurethane spray foam, which also serves as an acoustical finish.

Residential: Denizen Bushwick, by ODA

TEXT BY EDWARD KEEGAN, AIA

Denizen Bushwick is an immense complex, filling two city blocks in Brooklyn with 1.2 million square feet of mixed-use residential development. Long before craft beer and maker culture came to the borough, Rheingold—the city's most successful beer through the mid-2oth century—was brewed in a sprawling complex that included Denizen's site. The brewery's buildings were demolished in 1981 and have been replaced piecemeal by rather desultory residential development, until now.

Denizen Bushwick, designed by New York City firm ODA, centers on a linear park that follows what had been an internal service street in the Rheingold complex. "We thought of it as an opportunity to propose a different urban formula, which is to rearrange the priority of mobility, accessibility, and pedestrian," ODA executive director Eran Chen, AIA, says. "We'd like to test the idea of an enclave surrounded by traditional streets."

This experimental approach extends into the layout of Denizen's two buildings, which flank the linear park and contain g11 studio, one-, and twobedroom units. Instead of the standard doughnut configuration that brings light and air into units through a single central courtyard, here, ODA created five courtyards by developing interlocking wings which vary between single-loaded corridors and the more typical double. The buildings have two cores apiece, and there are four public lobbies.

The façades of the two buildings are



The north façade has retail at the base.

Project Credits

Project: Denizen Bushwick, Brooklyn, N.Y. Client: All Year Management Architect: ODA, New York Structural Engineer: McNamara • Salvia Structural Engineers MEP Engineer: MG Engineering Civil Engineer: Philip Habib & Associates Façade Consultant: LaufsED Elevator Consultant: Jenkins & Huntington Excavation Consultant: FNA Engineering Services Art Consultants: ArtBridge; The Bushwick Collective; OPEN Curtain Wall Contractor: Schüco Concrete Contractor: Azzarone Contracting Corp. General Contractor: NYEG Corp. (amenity spaces); Apt Developers (apartment units) Size: 1.2 million square feet Cost: Withheld





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Residential: ODA

reminiscent of old masonry warehouses in their weight and bulk, with deeply recessed rust-colored windows punctuated by diagonal cross-bracing. ODA doubled the typical spans of the conventional concrete frame at the ground level and clad the neighborhoodfacing façades in large gray concrete masonry units that read as more refined brick. "It reduces the impression of scale and makes it seem a little bit more manageable," Chen says.

Other amenities endear the project to neighbors as well: In addition to a ground-floor mix of retail and community facilities, the linear park is open to the public, and appears as a street to neighbors; two of the five interior courtyards are promised to be open to the public as well. "Those courtyards have food-and-beverage and a supermarket," Chen says. "The scale is very intimate, but there's a diversity of types of activity and details, each one with its own character."



Typical Unit-Level Plan





Ground-Floor Plan



COURTESY ODA





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Residential: ODA

The complex's most distinguishing features are the courtyard-facing murals that span the height of the eight- and nine-story buildings and enliven these public/private spaces. "Bushwick prizes the idea of mega-murals," Chen says, noting that grassroots artists have painted exterior walls in the neighborhood for generations. ODA's Public Engagement in Neighborhoods (OPEN), a nonprofit organization associated with the firm, was involved with the murals' design and execution.

By cladding the exterior wall of the single-loaded corridors in window wall, the architects gain multiple benefits from the murals, which brighten typically drab apartment hallways while creating monumentally scaled pieces that can be viewed by tenants and the public. And the murals are likely to outlast most public artwork since the actual painted surfaces are on the corridor walls where they're not subject to nature's whims.

Open space is reprised at the top of the complex, with each roof having about 30,000 square feet of open landscape with a variety of experiences, including urban farming, lounge areas, fireplaces, barbecue grills, and a mini-golf course. The rooftops provide expansive views of the city, with Manhattan's skyline just 4 miles away.

Ultimately, Denizen Bushwick's success as a design exercise needs to be tested for its applicability as a community building in Brooklyn. "There's a leap of faith here," Chen says, admitting that privately owned public spaces come with some inherent community tension. "Denizen means 'people' in Dutch, and [the project] was always about the idea of diversity." With Bushwick thriving more than three-anda-half centuries after the original Dutch colonists relinquished control to the British, time would seem to be on the side of the project's residents.







 Large-scale murals line Denizen's five courtyards to activate what could otherwise be very dark gathering spaces.
The studio, one-, and two-bedroom units feature open kitchens.
Mailboxes from A.F. Florence in one of the four public lobbies are outfitted with moss gardens and sit under Vibia pendant light fixtures suspended from a supergraphic ceiling mural.



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Typology: Library and Park by RDH Architects

TEXT BY ALEX BOZIKOVIC



"Palaces for the people." That's the phrase that Andrew Carnegie used to describe the public libraries that he helped establish in the United States and Canada, and the idea is more relevant than ever. Today's libraries are places to study and read, but also to make things, connect with social services, and hang out with neighbors.

The new Springdale branch of the Brampton Public Library fills those roles in a diverse suburban city near Toronto. And the library's new building, designed by Toronto-based firm RDH Architects, hits another goal: "We work to introduce serious architecture into public libraries," says RDH design director Tyler Sharp, INTL. ASSOC. AIA. "The aim is to give a level of detail, finish, and resolution that is in keeping with museums and other civic buildings."

To create palaces, in other words, in a modern design language. At the 26,000-square-foot Springdale branch, this means an exercise in rigorously detailed glass and steel. The building's outer façades are 70% glazed, and treated with vertically striped ceramic frits that were arranged using parametric design to manage solar and heat gain. (The building is aiming for LEED Gold.) The frits' vertical lines rhyme visually with narrow steel exterior columns, which support a thin roof plane of lightly polished stainless steel.

All this stands out visually on what Sharp accurately calls "a very typical North American suburban site." The

Project Credits

Project: Springdale Library & Komagata Maru Park, Brampton, Ontario, Canada *Client:* City of Brampton *Architect/Interior Designer:* RDH Architects, Toronto · Tyler Sharp, INTL. ASSOC. AIA (design principal); Bob Goyeche (managing principal); Sanjoy Pal (project manager); Shelley

Vanderwal, Carlos Tavares, Juan Caballero, Soo-Jin Rim, Gladys Cheung, Lisa Sato, Simon Routh, Anton Freundorfer (project team)

Structural Engineer: WSP Canada ME Engineer/LEED Consultant: Jain Consultants Civil Engineer: Valdor Engineering Landscape Architect: NAK Design Strategies Water Features Consultant: The Resicom Group Specifications: DGS Consulting Services Size: 2,418 square meters (26,000 square feet) Cost: \$16.67 million, Canadian (\$11.52 million)

NIC LEHOUX

Typology: RDH Architects

library is surrounded by new, quasi-Victorian row houses, an arterial road, and a strip mall. But branch manager Lexi Black says patrons have welcomed the contemporary design: "The feedback on the building has been almost entirely positive," she says.

But the architecture also has to work hard: Springdale's local area has more than 100,000 people, about half of them immigrants, predominantly from South Asia. There are many multigenerational households, and the community "takes learning extremely seriously," Black says. This means that story time is always packed; and so are the study spaces, with college students during the day joined by high schoolers in the evening. The librarians' cylindrical service desk sits at the center of the floor plate, where they can offer advice to a student, or a new immigrant, or a job seeker.

Inside, the material language is more hospitable but still restrained. The floors are predominantly a gray polished concrete, the few walls are back-painted glass, and the ceiling is a white-painted textured drywall, which absorbs sound and conceals almost all the mechanicals.

The triangular plan is divided into three wings: a children's area, a study space, and a community room, and glazed partitions allow near-total visual connection between them. "We're using transparency in order to encourage people to come into the building, but also allow them to understand the architecture in a clear way," Sharp says. Yet in section, the interior is full of





surprises; both the floor and what Sharp calls the "roofscape" rise and fall. At the middle of the plan, the ceiling rises upward to an oculus that measures 13 feet across and is expressed on the exterior as a large mound wrapped in a green roof. There's another oculus in the children's area, where a thin-edged oval of drywall extrudes down from the ceiling, creating a half-enclosed area between the sky and the greencarpeted floor. "There's an organic, fluid geometry," Sharp says, "We're thinking of the building as a landscape."





COURTESY RDH ARCHITECTS







1. An aerial view from the south shows how the library's triangular plan maximizes green space on the suburban site. 2. The terraced contemplative gardens to the west of the site offer the best view of the mounded green roof, which is planted with a variety of sedums. 3. A thin, stainless-steel canopy creates a covered play area at the northern edge of the site, and picnic tables provide seating for parents and caregivers. 4. The varied ceramic frit pattern on the glazing at the northwestern end of the building shields the children's reading area, while still offering views out to the landscape and play area beyond.

- 1. Park play area
- 2. Contemplative gardens
- 3. Green roof
- 4. Entry courtyard
- 5. Lobby
- 6. Quiet reading atrium
- 7. Adult collection
- 8. Active reading atrium
- 9. Children's collection
- 10. Multipurpose room

0 10 20

NIC LEHOUX

Typology: RDH Architects

The site itself, once farmland, was basically featureless. The architects changed that, designing a park that surrounds the library building in collaboration with Toronto landscape architects NAK Design Strategies. A set of linear paths and reflecting pools buffer the library from the road to the southwest. To the northwest, a play area is organized around text: Elements of the plan and sculptural letters spell out the word "imagine"—fitting for a project that spurs exactly that in its visitors.



1. Super-thin steel columns help support a stainless steel canopy at the eastern edge of the building; a courtyard provides green space in front of the main entry (at center). 2. At the western edge of the site, terraced concrete walkways and benches with a series of pools create a buffer between the library and the street.













1. The lobby features polished concrete floors and a customer service desk where patrons can speak to a librarian. A retractable glass partition can divide the space. 2. Textured drywall lines the ceiling and the walls that slope up to the 13-foot-wide oculus over what the library calls the active reading atrium; the drywall helps to absorb sound reflected up from the polished concrete floor, which continue throughout. 3. The children's reading area is a carpeted space at the northwestern corner of the building; vertical ceramic fritting on the curtain wall helps to limit solar gain and glare, and to help the building meet targets for LEED Gold certification.



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Renewing an Essential Resource

When it comes to water, architects are well-suited to be problem solvers.

David Hertz, FAIA, has made sustainability central to his practice since the 1980s, and his eponymous firm aims for the highest sustainability standards in both residential and commercial projects. More recently, he started considering issues of resilience as they relate to water, and what he—and other architects—can do about it. In 2018, Hertz and a team of collaborators won \$1.5 million in the Water Abundance XPrize, sponsored by the Tata Group and Australian Aid. The two-year competition aims to alleviate the global water crisis with energy-efficient technologies that harvest fresh water from artificial clouds.

As told to Katherine Flynn

In Los Angeles, where I've been practicing, we've had six years of sustained drought. I became more and more aware of how our buildings respond to water, how they collect it, and how they conserve it. There's about six times more water vapor in the planet's atmosphere than all the rivers combined, and it renews itself on a weekly basis. I began to think about abundance rather than scarcity. There's the same amount of water there's always been—it might be getting dirtier, but it's just moving around in different states. How can we capture water vapor efficiently in terms of energy?

Is water a fundamental human right? Or should it be privatized and sold to us in little plastic bottles? The XPrize looked at an international challenge to address water; specifically, at amassing technology for water accumulation. The challenge was, who can make 2,000 liters of water in 24 hours, from air, using 100% renewable energy at a cost of less than 2 cents per liter? There were more than 100 teams that competed from 27 countries. What I invented was a process that mimics the way clouds are formed: it takes in warm air, which hits cold air and forms droplets of condensation that can be used as pure drinking water. A simple way to think of it is a tropical rainforest in a box.

What we developed can be rapidly deployed to communities around the world that face water scarcity or don't have infrastructure, and it's antithetical to large systems that are subject to failure. So if we're talking about more extreme events like hurricanes or earthquakes, as we've seen in Puerto Rico, it's inherently more resilient to have multiple systems that are local. It's about decentralization; it's about giving communities control over their own utilities. We have a resilience lab as part of my architecture firm that is focusing on systems solutions to develop nascent technologies in the face of these global challenges. We're very interested in the model of being ready for a much more extreme future.

It's interesting because other architects will say, "I don't understand how water is part of architecture." I think architects are uniquely well-suited to be creative problem solvers. AIA

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AIANow

Urban Planning: 2020 Vision

Two of AIA's 2020 Regional & Urban Design Awards showcase forwardthinking plans for a city and a university.

By Dominic Mercier

Kabul Urban Design Framework

The Kabul Urban Design Framework, recipient of a 2020 AIA Award for Regional & Urban Design, was designed by Sasaki to set a vision for the city that is sustainable and resilient, helping to realize the promise of a burgeoning democracy.

Influenced by the intersection of cultures, ecological systems, and political currents, Kabul has long developed organically, leaving many without access to infrastructure or services.

Organized around a citywide framework for urban development and growth, as well as corridor designs for two of Kabul's iconic roads, the plan tackles a host of issues facing the city. In addition, it stretches beyond physical design to affect Kabul's social fabric, addressing women in the city, higher education opportunities, and the conservation of its culture.

The design-driven agenda faces significant challenges at the metropolitan scale due to the city's informal development and its population growth of more than 2 million people in just 10 years. The plan's ambitious growth strategy shifts development away from environmentally sensitive aquifers, restores an agricultural belt, and identifies new locations for education and economic investment. Shaping any development is a series of typologies the team developed that offer context-sensitive design guidelines for the whole city. This blend of site-specific design and guidance affects other areas of the plan, including ways to integrate the informal settlements that exist beyond the city's borders.

Plans for commercial corridors along Darulaman Road, Afghanistan's most symbolic road, and Massoud Boulevard, which connects the city to its airport, respond to the surrounding context and cultural history. Along Darulaman, the team repositions the important 6-kilometer corridor as an urban boulevard with three distinct districts, each with their own streetscape and programmatic focus. Given its status as the gateway to the city, Massoud



The Kabul Urban Design Framework sets a vision for the city that is sustainable and resilient.

Boulevard represents a change to demonstrate that investment in social infrastructure and the preservation of social anchors can quickly regenerate neighborhoods.

In total, the plan lays out a vision for the sustainable and resilient city Kabul can become. Its implementation represents boundless opportunities for millions of Afghans for generations to come.

Cornell Tech Campus Framework Plan

This master plan for Cornell University's applied science program, designed by Skidmore, Owings & Merrill in partnership with James Corner Field Operations, also won a 2020 AIA Award for Regional & Urban Design. Envisioned as free of discrete academic departments, the plan establishes an open and collaborative community of designers, engineers, and scientists on a boundary-free, 12.4-acre site woven into the green space of New York's Roosevelt Island.

The plan emerged from a 2010 competition launched by the New York City Economic Development Corp. that explored whether the creation of an institution could spur economic development. The ambitious challenge carried city-owned land and a \$100 million budget. Cornell was one of 27 institutions to respond, ultimately winning with its proposal to create a \$2 billion, 2 million-square-foot campus where open spaces would eliminate the boundaries between the academic and commercial worlds.

The campus is organized around a central pedestrian boulevard called Techwalk, which connects the island's Main Street with Four Freedoms Park. Buildings and outdoor rooms line Techwalk and offer a number of uniquely programmed spaces to support a diverse mix of uses. Every outdoor room boasts views of the Midtown Manhattan and Queens waterfronts and is optimized for its intended use. Apartments, workspaces, restaurants, and outdoor amenities are all mixed together in the plan, while parcels of land shaped by pathways provide ample space for future expansion informed by design briefs that support new program requirements.

Given its location, sustainability was a driving force behind the plan for the campus, and the team took a holistic approach to its design. To protect the campus from rising sea levels, Techwalk rises 5 to 7 feet above the 500-year flood plain elevation. A central utility plant, which includes renewable energy sources such as fuel cells, provides the campus's electrical spot network system and sits on the site's highest ridge.

By fundamentally rethinking 21st-century pedagogy, this plan lays out a vision for a new type of educational institution that is fully engaged with the community and surrounding industries. Pedestrian-oriented, dynamic, and sustainable, the envisioned campus is a microcosm of the city itself. AIA

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Can LA Become a Green Leader?

Both the City of Los Angeles and LA County have released comprehensive sustainability plans. Will they lead to action? By Steve Cimino

If California were a nation, it would boast the world's sixth largest economy. It's also one of the most forward-thinking of the 50 states, setting new standards in efficient design and renewable energy that are exemplified by its most populous city, Los Angeles. A combination of progressive leadership and citizen buy-in has led LA to produce both county and city sustainability plans aimed at making this major metropolis into a worldwide leader in going green.

Take a closer look, though, and you'll realize how badly the region needs an overhaul. LA is a land of contradictions: its residents voted for two major ballot measures to provide millions for homeless housing, yet the number of people experiencing homelessness continues to rise. Billions are being spent on public transit, yet people refuse to give up their cars. And while the steps proposed in these two sustainability plans are unprecedented for a metro area of this size and stature, they're still just proposals.

"LA is made up of silos," says Angela Brooks, FAIA, principal at Brooks + Scarpa, "and that's been a big part of the problem. As we move forward, I can see the ship turning, but very slowly."

Brooks wrote her master's thesis 30 years ago at SCI-Arc on suburbia's problems, all of which the LA area has faced in some capacity. Despite three decades of purported progress, it hasn't done very much to solve them.

"I knew a long time ago that low-density suburban planning was killing us," she says. And while the issues these plans wrestle with—energy, pollution, transit—are not LA-specific, conquering them will require both the city and county to prove that all this enlightened posturing can produce definitive action.

10 Million Residents, One Ambitious Plan

On Aug. 6, 2019, the Los Angeles County Board of Supervisors unanimously adopted the OurCounty Sustainability Plan. The report itself was an ambitious 220 pages, compiled by a consultancy team made up of 14 partners and five anchor community-based organizations.

"It was a real collaboration," says David Herd, managing partner at BuroHappold Engineering, lead consultant on the project. "It's rare that you see that."

Along with several centers and schools at UCLA and the Liberty Hill Foundation—one of LA's preeminent social justice organizations the team at BuroHappold set out early to tackle the county's sustainability concerns from an ambitious perspective.

"A lot of the topics we wanted to address in the plan—from water and energy systems to housing markets—didn't necessarily conform to any boundaries," says Chris Rhie, sustainability strategist at BuroHappold.

As such, Herd, Rhie, and their partners wanted to approach the plan as a holistic set of cross-cutting goals, rather than start from the top down and regard each discipline as a separate entity. Fortunately, the county had funded the project appropriately and given them 18 months to complete it. That meant they were able to spend the first three to four months speaking with the county's sustainability office—led by Chief Sustainability Officer Gary Gero—and figure out how exactly to structure such a plan.

"It's daunting because you don't start off by saying, 'OK, we'll be net-zero carbon by 2040,'" Herd says. "You say, 'How can we become a fossil fuel-free county? And what are the social and equitable implications of that choice?'"

LA County is the most populous county in the United States, with 10 million residents spread out over 88 cities, and the team wanted as many of those people and places as possible to feel represented. That meant a remarkable amount of outreach; more than 125 different community-based organizations were involved in developing the plan. One of those was AIA Los Angeles.

"Our conversation with them was one of the most wide-ranging we had," Rhie says.

"We encouraged a plan that would be actionable and also address the county's operations," says Greg Verabian, AIA, principal at HKS and 2020 AIA|LA president. "The idea being that, if it's a model plan, other cities within the county would be able to pick up on it and have something to aspire to."

Ultimately, the plan outlined a series of strategies that include sourcing 80% of water

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locally by 2045 and achieving countywide carbon neutrality by 2050, with distinct targets tied to advances in building design.

"They're focusing on pilot programs to promote and elevate buildings that go beyond LEED Gold," adds Jed Donaldson, AIA, principal at Johnson Fain and 2020 chair of AIA|LA's Committee on the Environment. "LEED Gold is mainstream; not many buildings go beyond to LEED Platinum. But to get to where we need to be, we have to go even greater than that. Living Building Challenge, Passive House, certifications of that sort: We need to adopt some really far-reaching goals."

How Real Is the City's New Deal?

As for the city's Green New Deal, Rhie noted that there was "close coordination with that team on aligning targets and some of the most impactful actions," including a transition plan to give up fossil fuels. "While the scopes were slightly different, they are not inconsistent," he says.

Announced on April 29, 2019, the plan effective immediately at the time—required all new municipally owned buildings and major renovations to be all-electric. It also set targets around renewable energy, wastewater recycling, tree planting, and green jobs to be accomplished by various deadlines, the earliest being 2021 and the latest being 2050. It's the follow-up to Mayor Eric Garcetti's Sustainable City pLAn, which was released in April 2015 and—according to the mayor's office—led to LA becoming the "number-one solar city in America."

"As part of the 2019 plan, we really wanted to identify where we needed to reduce greenhouse gas (GHG) emissions," says Dominique Hargreaves, deputy chief sustainability officer in the mayor's office. "In tandem with a local design firm, Arup, we did a decarbonization pathway analysis to determine the industries responsible for the GHG being produced. We found out that 41% of our emissions citywide were from buildings."

The plan addresses this accordingly; it accelerates targets around reducing building energy use per square foot 22% by 2025 and 44% by 2050. All new buildings must be netzero carbon by 2030, and 100% of buildings overall must be net-zero carbon by 2050.

To the mayor's credit, he hasn't let the deal sit quietly since its announcement. On Feb. 10, 2020, he signed an executive directive to help push the plan forward; it specifically mandated that all new construction, major upgrades, and retrofits of municipally owned buildings must "demonstrate a pathway to carbon neutrality" while also amending the city's Green Building Code to ensure all new and renovated roofs are cool roofs—which incorporate light- and heat-reflecting materials and can lower temperatures by up to 50 F. The city also became the first local government to formally adopt the state's Buy Clean California Act, in which California's Department of General Services will assess the "global warming potential" of building materials and require all materials used in civic projects be under a certain limit.

Unsurprisingly, AIA|LA has been counseling the city on matters like these for years now. "In 2013, we began engaging with Matt Petersen, LA's first chief sustainability officer," Verabian says. "We eventually created a 10-point plan for designing the future of Los Angeles. It advocated for the mayor to initiate a vision plan, incorporating the goals that eventually became the city's Green New Deal."

Some of Garcetti's proposals can be enacted through code changes and executive orders; others won't be so simple. For example, the mayor wants to see the nearly 60 million miles driven within city limits per day come down 13% by 2025 and 39% by 2035. This will require a distinct change in how Angelenos think; a recent USC study found that LA County residents are still hopelessly committed to their cars and find local public transit to be both unsafe and inconvenient.

And the plan itself is not without its critics. Sunrise Movement, an advocate of the national Green New Deal, has stressed that the 2050 deadlines in LA's version will not meet the 2030 target deemed necessary by many other groups, including AIA's 2030 Commitment.

"With Mayor Garcetti's current plan for net-zero emissions by 2050, Los Angeles is on track to be 20 years too late," the Sunrise Movement wrote in a publicly released statement. "That is not a Green New Deal."

The Problem With Plans

The biggest problem with these plans seems to be that they're just that: plans. While they can certainly set a tone for architects, engineers, and elected officials within the region, turning them into tactical strategies is far more complex.

Brooks feels the issues within LA go deeper than just trying harder to build green; she thinks the framework in which buildings are designed and constructed in the city is woefully outdated. As currently constituted, LA's general plan does not allow for housing to be built in industrial areas. As a result, a current project that will add 323 units on top of a working wholesale flower market—not exactly heavy industry—took 3¹/₂ years to get approvals. Delays like these have led more than a few architects and developers to give up.

"There's no one at the city who is looking at the region and saying, 'What will this look like in 100 or 200 years?" she said.

She listed off the Green New Deal's housing and development goals: End homelessness by 2028. Increase new housing construction to 275,000 units by 2035. Ensure the majority of new housing is built within 1,500 feet of transit by 2025.

"That all sounds great," she says. "But that's just a wish list. How do we get that done? The only way is by fixing our zoning."

"We're making baby steps," she adds. "We just put 2 megawatts of solar on the roof of the LA Convention Center. We're making strides, but we have to look at the big picture if we really want to solve the problem."

From his perspective, Verabian wants to see if the plans will provide practical benefits for those who wield the checkbooks.

"There have to be incentives," he says. "Something like, 'If you meet a higher threshold of energy conservation and water reduction, we'll give you 10% more density.' Developers aren't going to say, 'I'll spend twice as much to give you want you want.' At the end of the day, it's a business."

Donaldson emphasized a similar point: These plans aren't laws. "They're documents that strongly suggest strategies and standards to adhere to," he says. "As an architect, I can't force my clients to do anything. But at the same time, LEED was never a law either."

"LEED demonstrated a better way of building," he adds, "that the general public has come to understand as producing a higher-quality place to work and live. It helped elevate the performance of buildings, which in turn elevated their profitability. It reinforced that the two are linked, and most clients are sophisticated enough to understand that."

Beyond that, stakeholder buy-in is essential. "The fact that all of these jurisdictions are aligning is very positive, and we should be encouraged," Herd says.

He points to the City Services Building, which his firm is finishing in Santa Monica. It is aiming for Living Building Challenge certification, and he hopes it'll set the bar high for similar local endeavors.

"Then it becomes incumbent on all of us to continue to raise that bar." AIA



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The American Institute of Architects A gate bane assist in a P.C. (and Steel) state (a being a community together.



SHoP Architects Get Their Hands Dirty

A pro bono project in a D.C. food desert aims to bring a community together.

By Katherine Flynn

Designer Daniel Toretsky of SHoP Architects was familiar with DC Greens, a Washington, D.C.-based urban farm and food justice organization, because he had spent time volunteering there as a high school student, collecting and weaving branches for a Patrick Dougherty-designed archway at a local elementary school. DC Greens, which has been around since 2009, aims to enrich an underserved part of the city via its urban farm and a community wellness space. New Yorkbased SHoP Architects, whose recent D.C. designs include the Midtown Center, a 14-story mixed-use office, dining, and retail complex **64** arranged around a large new public plaza, took on the project on a pro bono basis.

When Toretsky heard that DC Greens needed to find a new home because its current site was being turned into a substation for the local power company, he saw an opportunity for his firm to get its hands dirty designing a new home for the organization and the important community-building that takes place at its urban farm site. While SHoP doesn't have hard-and-fast rules about taking on projects on a pro bono basis, they aim to focus their efforts on work with a strong community connection. Stakeholders hope that The Well at Oxon Run will change the narrative around urban farms and community health hubs by being a space where elders and youth can engage in healthier living, artistic expression, cultural transmission, and community connectedness.

After two years of brainstorming sessions with partners, community leaders, and neighbors, SHoP unveiled a plan for a new DC Greens site in early 2020, in partnership with The Green Scheme, the D.C. Department of Parks and Recreation, and the D.C. Department of Energy and the Environment. The farm site will occupy 50,000 square feet, providing space to grow up to 150 varieties of fresh produce, herbs and edible flowers for community use.

SHoP worked in conjunction with WDG as the local architect and SK&A Structural Engineering Consulting. We chatted with Toretsky and his co-designer on the project, Minyoung Song, about the process behind designing a site that was more down-to-earth than the firm's usual fare.

What was the collaborative design process for this project like?

DT: The place that really seemed best [for the farm] was this neighborhood in Ward 8, in Southeast D.C., where there's really a food desert—there are no grocery stores nearby. It was kind of a perfect place, and there's a beautiful patch of open park there that [DC Greens] has done a lot of community outreach around. They ascertained that this was wanted by the community.

MS: The client hadn't ever worked with an architect before, so it was a process for us to



SHOP Architects took on the design for The Well at Oxon Run, an urban farm and community wellness space in Washington, D.C.'s Ward 8, on a pro bono basis

educate them on how we could contribute, other than just fulfilling their programmatic needs. We drew up our past work on a similar scale, including a community park in Greenport, N.Y., with a carousel and camera obscura. We walked them through what architecture can contribute to this sort of program that, in and of itself, will be a contribution to the community. We just completed a building in downtown Washington, D.C., and we are working on two others in the area. We had sort of built a Rolodex of other design professionals in the area and got them to volunteer their services for this. It filled up the design team and then kicked it off as a real project.

DT: We're really committed to making the city that we work in better for everyone, and we've done a number of high-profile projects. This project fit our interests really well, and this was a way to reach other communities.

MS: Our first meeting with the client and the community was a super informal one.

DT: We went to the site, sort of holding off rain the whole time. The wind was blowing and there wasn't any picnic table or anything, so we set up a folding table and chairs. Community members came, and one even brought her kids, these two little infants. We put them on the table and they prevented the drawings from blowing away. That set the tone for the whole process, really. We were very serious about what we were doing, but there was also a high level of inclusion and [of] taking people's ideas really seriously. One way that manifested was through people in the community getting really excited about this idea of the Front Porch and thinking of it as this connection between the family and the community.

When did the design process for this project start?

DT: July [2019]?

MS: It was hot. It was really hot. [Laughs.] It was a really fast process. The client is on a deadline to move out the space and to get all the plants out of the ground. DT: There's a whole orchard of fig trees.

MS: The community members were on subsequent conference calls with the client for the design presentations. We were trying to find inspiration from local heritage. There is a strong go-go music culture, there are graffiti walls, stuff that's very vibrant, and they were trying to incorporate that into our language for the buildings.

The clients had an aversion to certain types of materials, and we were trying to keep it down-to-earth and more familiar.

DT: One of the client's interests was turning a grove of trees into a memorial for people who had died of gun violence.

Can you tell us more about the clients having an aversion to certain materials?

DT: Certain materials signify some gentrification that's happening in that area right now, and the clients had mixed experiences previously collaborating on certain projects.

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AIAVolunteer **AIA**Perspective

There was a failed effort to build an amphitheater that never got used by the local community. There have been a few successful community libraries that have been very considerate designs; they are very actively being used. There were some other examples of so-called community facilities that are not open to the community; they were skeptical of funds going to projects that were going to be kept behind closed doors.

What were the most challenging parts of this project?

DT: There was the issue of the fence, which we knew we would have to have from the beginning. Urban farms always have a fence, for safety, just to make sure the resources stay under their control. We knew from the beginning that would be at odds with the mission of our project, which was to be inclusive and community-minded.

So the fence was almost a driver, where we divided it into a bunch of sections. Parts became porous art walls, and parts became what we called "amulets"-pavilions along a chain that would allow for programs like a classroom and a gathering space, a lending library, and a farmer's market. These things start to activate the space, and the community would have 24-hour access to these pavilions.

MS: The whole fence surface is like a canvas. The whole project, depending on fundraising and budget constraints, is very scalable. In the future, they could add more amulets if they needed to-it can keep growing. We also designed it with materials that could be easily maintained-we used very available and workable materials.

We knew we had to design to a certain budget, but the client is a good fundraiser and thought she could raise more money. It's a functioning farm, too, so we had to be sensitive to certain rules we had to follow in terms of how the plants grow.

DT: They don't just have plants growing, they have kids coming in [for programs]. Horticulture is a really big driver of everything.

MS: The farmer [Kate Lee, farm director at DC Greens] has very specific ways she works. We had to consider all these traffic patterns.

DT: Right, we hadn't considered the turning radius of a wheelbarrow. AIA



A Year of **Climate Action**

Taking stock of AIA's efforts on the 50th anniversary of Earth Day.

This month marks 50 years since Earth Day was first observed in 1970. It's a good opportunity to take stock of our efforts-as individuals and as a profession-to answer humanity's collective call to climate action. As the global impact of the COVID-19 crisis reminds us, we're all in this together.

I'm pleased to report it's been a productive vear of action for The American Institute of Architects.

Since our members overwhelmingly approved a resolution last May making climate action our top priority, we've been working to turn policy into action-marshaling all our resources toward reducing carbon in the built environment and adapting buildings to the change already happening.

I'd like to highlight just a few of the actions we're taking.

Most significantly, we've developed a new Climate Action Plan designed to set out actionable, measurable steps toward achieving net-zero emissions in the building sector by 2050. The three overarching goals are: mitigating the sources, adapting to the impacts, and catalyzing architects to act.

We have a number of long-standing programs to build on.

Through the Framework for Design Excellence-formerly known as the COTE Top Ten-we're ensuring sustainability goals are fully actionable.

Another resource is the 2030 Commitment-a program that's workable for firms of all sizes. Ten percent of the firms reporting employ fewer than 10 people, and they are achieving an average predicted energy use intensity (pEUI) reduction of 60%; 37% of the firms reporting have more than 100 people with the average pEUI reduction of 46%. Collectively, pEUI reductions recorded by the reported projects translate to estimated reductions equivalent to 17.7 million metric tons of CO2 emissions.

That progress goes to show that the 2030 Commitment is not for the 1%. It's for everyone.

In 2018, only 252 firms reported data to the Design Data Exchange. That is only 1% of architecture firms in the United States. My personal goal for 2020 is to double the number of firms participating and reporting their data.

We know that the cooperation of clients, community partners, and policymakers is essential to success. So we're strategically stepping up our engagement with these critical allies. To help make the business case for green design to our clients, AIA is researching the return on investment on carbon reduction and sustainability features in buildings.

Through partnerships with organizations like the U.S. Conference of Mayors, we're expanding outreach to civic leaders on the front lines of the climate fight in U.S. citiescoordinating on joint events and initiatives. At our annual Grassroots Conference in February, we hosted a panel of mayors to continue the dialogue. Our participation in ARCHITECT's CarbonPositive conference in March took our message not only to policymakers but to planners, engineers, builders, developers, and other potential allies.

Our new ad campaign underlines architecture's climate leadership to an even wider audience. Set to run later this year on several major TV networks and social media channels, it's designed not only to inform but to pledge action, and to assert the architecture profession's ability and commitment to lead.

Looking ahead, we are developing a 2020 platform for architects that focuses on climate action. The platform will voice our priorities to national candidates at both the Democratic and Republican National Conventions-highlighting some of the same solutions we're advocating in Congress, local and state governments, and to global forums like the International Code Council.

That's just a sampling of the progress we've achieved the past few months. More importantly, it's an indication of progress yet to come. With our record 95,000 members and a renewed commitment to climate action. architects have never been better positioned to make a transformative global impact. AIA

Jane Frederick, FAIA, 2020 AIA President

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"The silence coming from the profession is overwhelming," Lori Brown says. "Where are the architects wanting to engage in these issues?"

Architecture and Abortion by Elizabeth Evitts Dickinson

If you ever visit a Whole Woman's Health Clinic, part of a national chain of reproductive care facilities, you might notice that it doesn't resemble a traditional health care space. Soothing lavender paint covers the walls and lamplight replaces harsh fluorescents. Diffusers steam calming essential oil, while a specially blended herbal tea, featuring peppermint for nausea and rose for cramping, steeps for patients. Exam rooms aren't numbered; they're named for inspirational women such as Frida Kahlo and Rosa Parks.

Amy Hagstrom Miller, founder and CEO of Whole Woman's Health, opened the first clinic in Austin, Texas, in 2003, and she prioritized the patient experience. Hagstrom Miller is the daughter of a custom homebuilder and the sister to a landscape architect, and she has always been attuned to the psychology of space. "I grew up thinking about design," Hagstrom Miller says, and "about how space can contribute to stigma or how it might help to alleviate stigma."

Hagstrom Miller now oversees eight existing reproductive health care clinics around the country, in states like Virginia and Indiana, and she has renovated each using her signature patient-centered approach. While Hagstrom Miller values design, she never could budget for an architect, at least not until 2014, when she hired Illinois-based George Johannes, AIA. His job wasn't the design of a new clinic; rather, he was tasked with helping to save existing ones.

Among the many gynecological services offered by Whole Woman's Health—Pap smears, ultrasounds, birth control—the clinic also provides abortion care. This makes Hagstrom Miller's buildings among the most targeted in the United States. Just last spring, in the middle of the night, someone attempted to burn down the Whole Woman's Health Clinic in McAllen, Texas, before a neighbor saw the smoke and called 91. Hagstrom Miller and her staff have spent decades ushering women past protesters and contending with threats, violence, and sabotage, but the clinic's biggest challenge right now is regulatory codes.

In 2013, Texas passed House Bill 2 (HB2), which placed new, more stringent regulations on abortion clinics. The World Health Organization has classified abortion as a safe procedure for outpatient clinics and physician's offices, which is where 95% of abortions take place in the U.S, according to the National Abortion Federation (NAF), the professional association for abortion providers. But HB2 mandated, among other things, that providers must come into compliance with ambulatory surgery center (ASC) standards. ASCs are a step up from medical offices and provide outpatient surgeries that do not require hospital stays—think knee replacements—requiring facilities to include at least one dedicated operating room. HB2 meant that abortion providers across Texas had to upgrade corridor widths, door and exam room sizes, and HVAC systems, among other things. HB2, proponents argued, would help protect women with a higher standard of care. "This is an important day for those who support life and for those who support the health of Texas women," said then-Governor Rick Perry when the legislation passed.

For Hagstrom Miller and opponents of HB2, the true intent of the law was obvious, and it wasn't about patient well-being. The legislation has "nothing to do with the actual procedure that we're providing," Hagstrom Miller says. The statutes "were imposed on us because the opposition knew it would be extremely difficult to comply, and it would be incredibly onerous and expensive."

HB2 is what's known as a Targeted Regulation of Abortion Providers—or TRAP—law. TRAP refers to legislation specifically related to the physical building, equipment, and staffing requirements of a facility that performs abortions, according to Elizabeth Nash, senior state issues manager at the Guttmacher Institute, a sexual and reproductive health and rights research and policy nonprofit. The term was coined by the Center for Reproductive Health in the 1990s, Nash

Abortion clinics in Texas pre- and post-HB2



says, but zoning and building codes were used to limit abortion clinics as soon as the landmark Supreme Court case Roe v. Wade made abortion legal in 1973. Following the 2010 midterm elections, when many state and local legislatures went red, hundreds of new TRAP laws were passed in the U.S. Far from being motivated by a question of safety, Nash says, TRAP laws in the


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- Procedure room is approximately 120 square feet or 10' × 12'.
- 2. Aspirator is used as suction during the abortion procedure.
- Ultrasound machine
- Room must have oxygen (can be on a cart).
- 5. Floor is 1' × 1' vinyl tile.



last decade have become the primary tool used to hinder access to legal abortion care in America.

When HB2 passed, Hagstrom Miller and several clinic providers brought Johannes to Texas to help quantify the impact of the ASC standard. Johannes had designed an abortion clinic in Illinois in the 1990s and consulted on the design and code compliance of several others. He teaches professional practice courses, including building codes, at the Graduate School of Architecture & Urban Design at Washington University in St. Louis. "Publicly, Texas was saying that these regulations weren't that expensive or difficult, that they weren't asking for much," Johannes says. "My job was to determine what exactly this law meant to the clinics. And of course the cost was either huge or implausible. Implausible because many clinics were in small buildings on sites where they couldn't even put on an addition."

Johannes visited eight Texas clinics in 2014 and determined that meeting the new code would cost providers in the millions. At Whole Woman's Health in Austin, the cost estimate was up to \$2.4 million. Hagstrom Miller took those estimates and visited 15 banks. Some denied her outright because, she believes, they didn't want to work with an abortion clinic. Others simply couldn't make the math work. The cost of the services provided at Whole Woman's Health are capped in order to allow individuals from all socioeconomic backgrounds to afford care. Hagstrom Miller was told that her business model was never going to be able to pay for the expense of upgrading her buildings.

Then there was the added cost of facility management. When Hagstrom Miller did manage to turn one of her Texas clinics into an ASC, the cost to run it was 40% higher, in part owing to the refrigeration and HVAC standards, but also because of the staffing regulations. ASCs require more nurses per patient because there is a presumption of an invasive surgical procedure.

Hagstrom Miller also noticed the effect her ASCcompliant facility had on patients. The soft lavender color scheme was replaced with an industrial white paint meant to ease in the clean-up of blood splatter, which she says is an unnecessary restriction in the case of abortion. Nurses were required to "garb up" and wear full protective gear and face masks, creating a sterile and impersonal environment. "Complying with those physical plant requirements changes the way not only we practice the care, but the way people experience the care," Hagstrom Miller says.

Whole Woman's Health brought a lawsuit against the state of Texas challenging HB2, and Johannes testified as an expert witness. The case reached the U.S. Supreme Court in 2016, and in Whole Woman's Health v. Hellerstedt, the court ruled by a 5-3 vote that the ASC statute was unconstitutional. In the affirming opinion, Justice Ruth Bader Ginsberg wrote that "many medical procedures, including childbirth, are far more dangerous to patients, yet are not subject



- Ceilings must be monolithic (seamless). Typically painted gypsum board. If the ceiling has any penetrations, those must be sealed in order to prevent any transfer of airborne contaminants.
- Walls have to be smooth, impervious, and able to be wet-cleaned.
- Floors must be seamless with integral base at walls, typically vinyl with heatsealed joints.
- Door must be 3'8" wide to accommodate a gurney.
- 5. Door must open onto an 8'-wide sterile corridor, which is the shared access to all the operating rooms if there is more than one. This corridor must lead to physicians gowning area and patient entry from opposite directions. The gowning area entrance must come from a non-sterile area. The corridor must also lead to a separate pre-operating area and post-op (recovery area) with a minimum of one bed per operating room, plus one bed for post-op and one bed per operating room for pre-op. Each bed requires 3' on either side, 4'6" between beds or lounges, and 6' at the

foot of the bed. All patient corridors in an ambulatory surgery center must be a minimum of 5' wide, rather than the standard 3'6" in a commercial building.

- Minimum square footage in the operating room is 240 square feet. The shortest dimension in the room shall be no less than 14' clear (length or width), exclusive of cabinetry.
- Facility must have sprinklers if the building has more than one story.
- 8. Facility must have emergency power.
- There shall be no scrub area in the operating room. The scrub area will be located in a sterile corridor within 5' of
- the door to the operating room.10. Scrub area must have a window with line of sight into the operating room.
- Ceilings have to be a minimum of 9' if there is ceiling-hung equipment and 8'6" high if not.
- Walls and ceiling must be insulated for sound with two layers of drywall or special insulation.
- Temperature at 3' off the floor must be between 70–78 F.
- 14. There must be 20 air changes per

hour, which means that all the air in the operating room is replaced every 3 minutes. Additionally, 20% of this air needs to be from outdoors, rather than recirculated air from inside the facility. All air must be filtered. The operating room must also be pressurized to have a positive air-pressure balance, which means that more air is pumped into the room than is taken out, so that when the door to the sterile operating room opens air flows out rather than in.

- Room must have oxygen (can be on a cart)
- Aspirator is used as suction during the abortion procedure.
- 17. Sterile cart (stainless cabinetry or cart)
- 18. Firewall to separate the facility into two fire- and smoke-separated compartments (2-hour fire wall required for compartmentalization). Wall has to go to the roof with no penetrations and sealed tight to deck (shown here as an 8" concrete block).
- Above ceiling: 20"-deep bar joist with steel pan roof deck.
- 20. Ultrasound machine

to ambulatory surgical-center or hospital admittingprivileges requirements," adding that "it is beyond rational belief that H.B. 2 could genuinely protect the health of women, and certain that the law would simply make it more difficult for them to obtain abortions."

By the time of the Supreme Court decision, however, many Texas clinics had already been forced to close. The state had more than 40 abortion clinics before HB2 was enacted. After portions of the law went into effect, it had 17. If not for a legal injunction delaying the implementation of the ASC-standard, fewer than 10 clinics would have remained open. Hagstrom Miller's Austin clinic was among those that closed.

The debate over TRAP laws, meanwhile, is far from over. In March, the Supreme Court, which has tilted to the right since the Texas case, heard oral arguments in June Medical Services v. Russo, a case over a similar law in the state of Louisiana. Today, more than ever, the battle over a woman's right to choose is being waged in the built environment.

A Politicized Design Challenge

Abortion clinics offer a compelling, if complex, design challenge: How do you take a politically contested space and make it secure and safe, while also creating a positive environment for the community, staff, and patients? The challenge has only intensified in recent years. Since 1977, NAF has tracked vandalism, trespassing, arson, and some 100 incidents of butyric acid attacks on clinics. In its 2018 report, the foundation outlined a dramatic increase in violence and disruption, including "an escalation in vandalism, trespassing, hate mail/harassing phone calls, internet harassment, picketing, and obstruction." Violence against clinics, NAF reported, has reached a record high.

Because of politics, protests, and attacks on clinic buildings, abortion providers contend with what's been dubbed "the abortion tax." It can be difficult for a provider to find an owner willing to lease to a business offering abortions. This isn't always political; building owners simply may not welcome the protesters and the damage to property that can result from attacks. Recently, Hagstrom Miller spent months trying to find a facility in Minneapolis willing to lease to Whole Woman's Health, but ultimately the organization had to fundraise to purchase a building.

Starting from scratch presents its own challenges. When Johannes designed the Hope Clinic for Women in Granite City, Ill., the exterior wall edged the property line of an organization that, because of its stance on abortion, refused to allow scaffolding on its land. This meant a costly last-minute change order with the builder who had to figure out how to construct the wall from the inside out by lifting masonry over the interior building slabs. Even getting that masonry proved difficult; one major purveyor of the decorative concrete blocks used in the building refused to sell to an abortion clinic, leading to what Johannes says was a lack of competitive bidding that added unnecessary costs to the bottom line.

For the first Planned Parenthood in Queens, N.Y., completed in 2016, Stephen Yablon Architecture (SYA) had to rely on a smart distribution of limited resources. The renovated 14,400-square-foot warehouse on a mixed-use street earned an AIA/AAH Healthcare Design Award for its use of light, interior wayfinding, color palette, and an exterior brick façade with large windows connecting to the neighborhood. Andrew Miller, AIA, an associate partner and director at SYA, says the project was about "doing a lot with a little," owing to a tight budget, a portion of which had to go towards ballistics glass on the exterior. Bulletproof glass is "not a typical material except in very high security situations," he says, "and it's an expensive product, so it does have a significant cost impact."

Once operational, providers must also plan for myriad security threats against staff, clients, and the building. In addition to the list of crimes tracked by NAF, there's a long history of sabotage to the buildings that house clinics, including the destruction of exterior HVAC units. Johannes cleverly planned for this possibility when he designed the Hope Clinic-using a strategy he didn't want to reveal on the record. He also mentioned various methods used to target abortion clinics over the years, resulting in costly repairs, loss of lease, or closures, but also declined to disclose them for fear of providing a playbook to extremists. Johannes learned about many of these tactics because his wife, Sally Burgess, was executive director of the Hope Clinic (they met while he was working on the project); she also served on the board of NAF for many years. Johannes has attended national meetings of the foundation to offer presentations on security design. Clinic operators are "highly sensitive about the risks," Johannes says, and even if they could afford design consultation with an architect, few could afford to implement the plan. "A lot of clinics are vulnerable for that reason," he says.

Another challenge with building or renovating is that subcontractors may refuse to work on a clinic offering abortion care either because of their personal beliefs, or because they worry about the optics. Architects and providers that I interviewed told me that the subcontractors who did say yes sometimes received



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hate mail or dealt with protesters swarming other jobsites in an effort to publicly shame them.

In response, some providers have started to renovate or build discreetly. In 2019, when a new Planned Parenthood opened in Illinois, the Fairview Heights Center, it was developed with its purpose kept hidden. The center was built to bring reproductive care, such as annual exams, Pap smears, and cancer testing, to the local community, but it also serves as a regional hub: across the river in Missouri, because of TRAP laws and other regulations, only one abortion clinic remains. Kristin Flood, senior director of health care regulatory strategy for Planned Parenthood Federation of America, says that "due to the targeted regulations on abortion providers and anti-abortion activists, we sometimes have to use additional measures while planning and building Planned Parenthood health centers to ensure that our facilities are built on a timely schedule so that we can provide quality care as quickly as possible in the surrounding area." Planned Parenthood's national office wouldn't go on the record about specific development strategies, but other providers told me that one of the primary tactics is to create a shell developer for the public record.

Legal Whack-a-Mole

The TRAP laws have only made the design challenge more difficult. Today, according to data collected by the Guttmacher Institute, 24 states carry laws or policies that require abortion clinics to follow measures that providers consider unnecessary for the health and safety of patients. Currently, 17 states have laws mandating that clinics comply with structural standards comparable to surgery centers. In addition to the ASC statute implemented in Texas and other states, some new legislation has imposed zoning regulations stating that clinics cannot be located near schools or that they must stock expensive surgical equipment and prescriptions. The laws have also stipulated that clinics must exist within a certain proximity to hospitals-a challenge especially in rural locations-and that clinic doctors must gain admitting privileges, something that many hospitals refuse to grant.

The spate of new legislation has been inspired in part by Americans United for Life (AUL), a selfdescribed public interest law firm that has created model legislation adopted by many states. Each year they publish "Defending Life," what they call a "prolife playbook," and this year's edition includes more than 50 pieces of model law and policy. In a 2018 booklet titled "Unsafe," AUL wrote that "To ensure that laws designed to protect women and their children from abortion industry abuses remain on the books and are properly enforced, pro-life Americans and their representatives must actively and effectively counter the enduring abortion-industry-manufactured myths that 'abortion is safe' and that 'abortion is between a woman and her doctor.'"

Opponents of TRAP laws note that abortion providers already follow federal OSHA regulations and state health and safety licensing requirements for medical facilities, and they cite the overwhelming evidence that abortion is in fact safe. In 2018, the National Academies of Sciences, Engineering, and Medicine conducted an in-depth study that found abortion, as practiced, is safe, and noted that the procedure can be performed by nurse practitioners. In fact it is the "abortion-specific regulations in many states [that] create barriers to safe and effective care," the report said, including some laws that apply ASC regulations to clinics that only offer medical abortions, in which a woman takes a pill. The same year, researchers at the University of California, San Francisco and Penn State College of Medicine conducted a study, published in the peer-reviewed medical journal JAMA, that found little evidence to support the assertion that abortions are safer in an ASC rather than an office-based setting. According to data gathered by the Guttmacher Institute, fewer than 0.5% of abortions result in a major complication requiring hospitalization. Physician David A. Grimes, who served as Chief of the Abortion Surveillance Branch at the CDC, has written that "the risk of death from abortion in the U.S. is similar to that of paddling a canoe."

"The reality is, abortion is already being banned without ever overturning Roe," says Flood, who works with Planned Parenthood affiliates around the country to understand how state laws and regulations affect facility design. "There is a multilayered effort, which includes building restrictions, general abortion restrictions, and municipal codes that push abortion out of reach."

In a 2016 article for the peer-reviewed journal *Critical Public Health*, lead author Rebecca J. Mercier of the department of Obstetrics and Gynecology at the Sidney Kimmel Medical College of Thomas Jefferson University and fellow researchers found that abortion provisions in the U.S. have become "a dance" between lawmakers and providers. "The challenge for antichoice lawmakers is to write abortion restrictions in a way that complicates access, but not to such an extent that they impose a blatant undue burden on patients, which will not stand up in court," the researchers wrote. "The challenge for abortion providers is to meet the standards of the law, which may require extensive changes to a clinic's physical structures and patient

THE BENEFITS OF USING ICF: ONE ARCHITECT'S PERSPECTIVE

Curtis + Ginsberg Architects uses insulated concrete form construction in its New York City designs more than nearly any other architect in the area.



Photo Courtesy of Curtis + Ginsberg Architects. Photo: John Bartlestone Photography

Nearly six years ago, when a sudden gas explosion in Manhattan's East Harlem neighborhood leveled two five-story apartment buildings, one of the six Calvert Lancaster buildings—a residential building abutting those buildings—remained standing.

Curtis + Ginsberg Architects, based in New York City, were the architects behind Calvert Lancaster. The firm specializes in affordable and multifamily housing, hoping to bring benefits to users and the community with every project it completes. As a LEED Silver structure, Calvert Lancaster was originally built in 2012 to emphasize energy efficiency. Designed using insulated concrete form (ICF) construction, the exterior walls were formed by pouring concrete in a rigid foam form framed with steel rebar—which is what kept it standing after the explosion.

"Everyone in Calvert Lancaster building got out fine," says Curtis + Ginsberg Architects partner Mark Ginsberg, FAIA. "There were only a few cracks in the concrete—remarkable considering the impact of the explosion. The ICF facing those two buildings got a little charred but didn't burn. It's a good fire break, with 6 or 8 inches of solid concrete."

A few years later, when Curtis + Ginsberg Architects was selected to design Beach Green Dunes, a multifamily project located next to an elevated subway line in Far Rockaway, N.Y., they chose ICF construction for its ability to reduce noise transfer and keep the subway sounds where they belong: outdoors.

In addition to offering structural integrity and sound absorption/reflection, ICF construction also maintains interior comfort levels in climates like that of the mid-Atlantic by reducing the impact of outdoor temperatures on the indoor environment. "With ICF you can be near a window or outer wall in the winter and not be cold," Ginsberg says.

In fact, Ginsberg uses ICF construction in his New York City designs more than nearly any other architect—and he chooses this approach when possible for several reasons.

"ICF provides a simple way to build an energy-efficient, cost-effective envelope," he explains, which has helped Curtis + Ginsberg Architects achieve LEED and Passive House certification for several building projects.

Because ICF blocks not only serve as the building's structure but also as the insulation and air/vapor barrier, Ginsberg says they lessen the number of building materials needed to complete projects, which can shorten timelines and decrease the number of trades and construction steps necessary as well. "Once ICF blocks are up, you're much further along in the process than with wood or traditional concrete," he says.

Contractors can find value in this as well, using ICF blocks because they're light and fast to install. No heavy equipment is needed, and fewer laborers are required. As a result, contractors can maximize their resources and get more work done in a shorter amount of time.

Ginsberg also appreciates that it can be used to create nearly any design aesthetic: modern, traditional, Gothic, etc. "Any type of building typically done in a block bearing wall can be done in ICF. There's nearly endless design flexibility."

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care procedures, so that they can continue to operate legally and ensure abortion access. In this way, the abortion provider, and the steps she takes to adapt to the ever-changing regulatory landscape, becomes an essential component of protecting abortion access throughout the country."

In Memphis, Katy Leopard, director of external affairs for Choices: The Memphis Center for Reproductive Health, refers to TRAP laws as legal Whack-a-Mole. "You never know what's going to pop up next," Leopard says.

Choices is an independent clinic that has been offering abortions in Memphis since 1974, and later this spring, their new facility will become the first in the U.S. to offer both a birthing center and abortion care in one place. Memphis-based architect Peter Warren, AIA, of Warren Architecture, was hired to design the building. "I knew it wasn't the simplest project to say yes to," says Warren, "but my core belief is to support a woman's right to choose. I've never been an activist for the cause, but when the call came for this project, it was an opportunity to do something that I felt was right."

Warren had to weigh two primary concerns: the shifting regulations on clinics and the privacy and safety of staff and patients at a place where protesters regularly gather. Sitting just 10 feet off a public sidewalk on busy Poplar Avenue near downtown Memphis, the new clinic is clad in a colorful metal panel system Warren designed to resemble a quilt. He wanted the building to appear strong, vibrant, and visible. "They are advocates for education and protectors of women's rights," Warren says of Choices. "They don't want to do that from the shadows."

Choices aims to eliminate the stigma around abortion care, and part of that is by creating a safe but nurturing physical environment. "We resisted overly securing the facility because we feel like that almost feeds into the fear," Leopard says. "We've taken practical steps but not gone overboard. Nobody wants to go through a metal detector to get their annual Pap smear."

Some of those practical steps include having the exterior façade face busy Poplar Avenue, but providing parking off a side street so the main entrance to the clinic is removed from protesters. A porch welcomes patients, and in nice weather, large doors can open to the fresh air. On the interior, ancillary rooms line the façade wall backing onto Poplar, creating a sound buffer for the interior exam rooms when protesters are shouting. The birthing center rooms on the second floor open onto an interior courtyard garden where women can move freely during labor.

Warren had to adopt a "what if" mindset when designing the building. Memphis has passed an ASC standard law, which is currently stayed following the Whole Woman's Health decision. But in January, Tennessee Governor Bill Lee, surrounded by a phalanx of other Republican legislators, most of them male, held a press conference announcing that new abortion restrictions would be a legislative priority for 2020. At press time, that legislation-what Nash of the Guttmacher Institute calls a "mega abortion bill" for its wide-ranging regulations-was currently before the Tennessee legislature. Warren needed to make sure the Choices space met the requirements of potential new laws. He designed the entire building to the ambulatory standard, considering not only the International Building Code, but also the regulations under the NFPA Life Safety Code, which is triggered in Tennessee when a building must follow ASC standards.

Staying nimble also meant expanding the business plan, says Leopard. Choices offers services like fertility treatment for the LGBTQ community, and the first midwife-led birthing center in Memphis, in part to meet the needs of their community, but also as a reaction to TRAP laws. "Part of the strategy of diversifying is to have a business model that doesn't depend so heavily on one service," Leopard says. "Bringing on a major new service like prenatal care and birth we hope gives us a business model that makes us more flexible."

That flexibility is key, because TRAP laws often do not allow for grandfathering, a common practice when new codes affect existing buildings. As soon as TRAP laws pass, clinics are often served notices of noncompliance-a practice Johannes says he has witnessed firsthand when helping abortion providers meet or fight new regulations. No matter your politics on a woman's right to choose, Johannes believes TRAP laws should alarm the profession. "One thing that architects should be very attentive to is this: What is the purpose of a code? Of a regulation?" Johannes asks. "We work within codes as a profession, and I want to believe that regulations have been arrived at by rational, honest people of integrity, and that they are evidenced-based. When those same tools are used for political purposes, it calls into question the whole system. That should concern every architect," Johannes says, because "when you start using codes as a political cudgel, who is next?"

An Absence of Architects

For the most part, architects have steered clear of this controversial building type. When Warren went looking for best practices, he found little in the

Current TRAP laws in the United States

ROOM SPECIFIED CORRIDOR WIDTH SPECIFIED COMPARABLE TO ASC PROCEDURE AL x x A7 × AR x × IN x x x KS ÷ KY X LA x MI x xx MS x XX MO NE NC x OH × OK xx PA х x x RI x SC x x SD x x TN ± ТΧ + UT хх † This law is

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ACOUSTICAL WOOD CEILINGS AND WALLS architecture literature. SYA's Andrew Miller told me the same thing: "We did some research before we started working with Planned Parenthood of New York City, and found there was very little out there on similar facilities."

Except, that is, for the research of Lori A. Brown, AIA, who teaches at the Syracuse University School of Architecture. Brown has spent years researching architecture's role in reframing politically charged spaces. She traveled the country interviewing abortion providers as well as tracking data related to their design needs. Most clinics do not use an architect, Brown says, because "they simply can't afford it, or they aren't clear on what architects can do to help them." TRAP laws also make fundraising difficult, because "people don't want to give money to a building that might have to close in six months."

In her 2013 book *Contested Spaces: Abortion Clinics, Women's Shelters and Hospitals*, published by Ashgate (now Routledge), Brown cataloged the detrimental effect of spatial politics on women, particularly women of color and those living in poverty. In a 2016 article for *ARPA Journal*, she wrote that, "Abortion clinics raise complex questions about the fluid and ever-shifting terrain of reproductive healthcare access," and about "how architectural thinking can bring forward new insights into the built environment of everyday space."

In 2014, Brown issued a call for design ideas for a project called Private Choices Public Spaces. The challenge, open to the public, asked participants to consider the design of a security fence around the Jackson Women's Health Organization in Jackson, Miss. Of the many ideas submitted, one called "Roses and Thorns: the anti-fence that flourishes" suggested a horticultural response, while another envisioned a clever use of fountains to block the clinic from protesters. As Brown wrote in her 2016 article, she considered the exercise "a platform to raise awareness about the role design could contribute to public space—especially in such an underexamined and contested space."

Using the built environment to manipulate women's bodies is nothing new, says Malkit Shoshan,



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"When codes are used for political purposes, it calls into question the whole system. That should concern every architect, because when you start using codes as a political cudgel, who is next?"

-George Johannes, professor at the Graduate School of Architecture & Urban Design at Washington University

> a lecturer in architecture at the Harvard Graduate School of Design. In fall 2019, Shoshan curated a show at the GSD titled *Love in a Mist: The Politics of Fertility*. It examined the myriad ways society has exerted control over women and fertility, and included art and design by the likes of Dutch physician Rebecca Gomperts, who in 1999 built Women on Waves, a clinic-on-a-ship meant to anchor in international waters and bring reproductive health care to women in countries with restrictive abortion laws. Born in Israel, Shoshan realized at an early age "how architecture and

urban planning can be used to promote politically or ideological agendas," she says. "Architecture can be complicit in the creation of unsafe environments."

Architects don't typically shy away from dialogue about contested spaces, or their impact on health and wellness. What role architects should play in the design of prisons for example-or the proposed U.S.-Mexico border wall-has inspired robust debate within the profession. In 2014, when migrant workers began dying while building World Cup arenas in Qatar, the backlash was swift. As it was when Bjarke Ingels posted a photo of himself with Brazil's far-right president Jair Bolsonaro in January. And when the Trump administration voiced its desire to limit the architectural style of federal buildings in February, AIA promptly decried the shortsighted nature of political agendas dictating public design. When it comes to women's reproductive health clinics and abortion care, however, "the silence coming from the profession is overwhelming," Brown says. "Where are the architects wanting to engage in these issues?"

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Some of that silence is understandable. A few architects I interviewed for this story told me they worried about boycotts from clients who don't approve of abortion; one declined to go on the record because they worked in a conservative state where their longtime role in designing clinics would be controversial.

Anne Fougeron, FAIA, principal of San Franciscobased Fougeron Architecture, is one of the rare architects who has spoken widely about her work on clinics. After a gunman murdered two people and injured five more at Planned Parenthood in Boston in 1994, Fougeron helped to design the organization's Bay Area offices, call centers, and new clinics at pro bono or reduced rates. "Being an architect and a woman and having a daughter, it was important to me to help protect the rights that we had won with Roe," Fougeron says. "Those rights are being eroded on a daily basis, and one way was through violence. I was interested in ways of addressing that issue and providing people with better places to receive health care. And I still feel that way because it's only gotten worse." For Fougeron, as for Brown, there's a moral impetus for designing women's reproductive health clinics beyond just protecting abortion rights. Many women rely on these clinics for routine and preventive care, and the TRAP laws have limited their access to it. Fougeron, who earned a Distinguished Practice Award from AIA California in 2019, appreciates that architecture is a service industry. She is not aware of losing any projects, or of potential clients blackballing her, because of her work with Planned Parenthood, but says that she went in knowing that was a possibility. "Sometimes, you do things because you have a social conscience, because you have to do them," she says.

Johannes vividly remembers the day in 2009 when colleague and friend George Tiller, an abortion doctor in Wichita, Kan., was gunned down while serving as an usher at his church. Johannes consulted with the new director on the code compliance necessary to re-open Tiller's clinic after his death. "There's probably a few of us in the country that are actually deeply involved in this, but not very many," Johannes says. "This isn't



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being discussed at a broader level, which is unfortunate because that silence gives a certain amount of energy to those who really want to shut this down entirely."

Abortion is so politicized, Brown says, "and there's still so much shame around the procedure, and the profession is reflecting that as well, and that's not OK. We need numbers to come out and support that [abortion] is a basic medical procedure and there needs to be well-designed spaces. But architects don't want to touch this. I do not believe the profession is doing enough for women's issues."

Brown speculates whether the gender divide in architecture—a profession still overwhelmingly male—might contribute to this reality. "This is clearly a gendered medical issue," she says. "Until there's more gender parity in the profession, issues like this may not be a priority."

"A Wicked Social Problem"

In 2017, 10 months after the Supreme Court ruled in her favor, Hagstrom Miller was able to re-open Whole Woman's Health Austin. She'd managed to hold on to the lease during the long legal battle by turning the clinic into a temporary co-working space, contributing her own money, and fundraising. Then in 2019, an anti-abortion organization targeting the clinic offered the building's landlord a five-year upfront payment for the space. Hagstrom Miller was forced to move. She has a saying that she often repeats: You can be angry, but you can't be surprised. She's already on to the next fight, working to overturn other TRAP laws threatening her clinics' survival. Meanwhile, she and other abortion providers are anxiously awaiting the Supreme Court's ruling in the Louisiana case, which challenges a TRAP law that prevents doctors from providing abortion services unless they have admitting privileges at a hospital within 30 miles of their clinic.

Over the years, Hagstrom Miller has attended several design thinking seminars. She's trying, always, to wrap her head around the abortion clinic conundrum, what those in the design world dub a "wicked social problem." She has one question that she always poses to the designers at these gatherings. "How can the design of a building contribute to, or alleviate, stigma in a place like an abortion clinic?"

The question inevitably stumps the room. "Nobody thinks they're ever going to get an abortion in their lifetime until they do," Hagstrom Miller says. "Nobody gets pregnant to have an abortion. Nobody wants to be our customer. And people come in with these ideas and these stigmas that they've been taught."

"I'm always curious," she adds, "to see who might be interested in working on this problem with us."



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A Prescient Disappointment

Rem Koolhaas may pose some timely questions in his *Countryside* exhibition at the Guggenheim, but the show fails to measure up to the magnitude of the moment.

> TEXT BY KARRIE JACOBS PHOTOS BY CONNIE ZHOU

A few decades ago, I worked on *Colors*, the magazine published by Benetton in which we distilled the world's cultural schisms into sunny images and caption-length texts. Our editorial director, Italian photographer Oliviero Toscani (famous for his advertising photos of smiling, sweater-clad multiethnic models), would occasionally pop into our New York office and offer critiques of our work: "It is too generous," he told us about one issue. He thought our compulsive editorial team should do less, should shoehorn fewer ideas and factoids onto each page.

I remembered Toscani's "too generous" as I looped around the Guggenheim rotunda during my visit to *Countryside, The Future*, which runs through Aug. 14. Created by Rem Koolhaas, HON. FAIA, his in-house think tank, AMO, and the museum's curator of architecture and digital initiatives, Troy Conrad Therrien, the exhibition purports to examine "radical changes in the world beyond cities." While it is encyclopedic in its aspirations, it is Wikipedic in its execution. It manages both to be too generous and not nearly generous enough.

Which is a shame, because this was an exhibition I thought I couldn't miss, even though I'm not much of a Koolhaas fan. Sure, I loved his 1978 book, *Delirious New York*, and have great affection for some of his projects, like the 1992 Kunsthal Rotterdam and the 2004 Seattle Central Library, both of which initially struck me as unusually optimistic expressions of the near future. *Countryside* also appeared to have promise; it seemed like it might feed into my obsession with the places where the man-made and the natural worlds overlap: I'm fascinated by wetlands crafted by landscape architects and hills fashioned by engineers. I'm intrigued by urban farms and rural hipster enclaves. I arrived at the Guggenheim believing *Countryside* was a show I was going to love.

A Harbinger of Obviousness

My problems started outside. There, parked near the museum's entrance, stood a massive green Deutz-Fahr tractor, with rear tires taller than most of the New York architecture critics who clustered around it during the press preview. It was there to make a statement, to be an emblem of rural life in the most urbane setting imaginable, the stretch of Fifth Avenue known as Museum Mile. But the gesture– the screaming incongruity—was a harbinger of the obviousness to come.

Inside, members of the press were herded into the museum's basement auditorium where Koolhaas spent more than an hour (I can't be sure exactly, since I walked out mid-lecture so I could actually see the exhibit) detailing each of the "15 specific narratives" that comprised the show, from the view of the countryside held by the ancient Chinese and Greeks to high-tech farming in the Netherlands. The architect apparently spends his summers in a Swiss village, which has been subtly changing over the years, growing in population and losing many of its original inhabitants, presumably farmers. Koolhaas complained about the transformation, like "the conversion of stables into minimalist houses costing 4 million Swiss francs." He disparaged one of his neighbors: "What we thought was a typical Swiss farmer was in fact a dissatisfied nuclear scientist from Frankfurt." (It apparently hadn't occurred to Koolhaas that the scientist might be having similar thoughts about him, also not a humble farmer, but a world-famous architect.) The Swiss epiphany inspired Koolhaas to begin thinking about the 98% of the planet where OMA doesn't work, the portion that is not urbanterrain that would prove to be as deep and inaccessible to the architect as the Mariana Trench.

One of the show's introductory images is a 1909 photo, obviously colorized, of three Russian peasant women in traditional dresses, looking stonily at the camera. "The countryside is depicted as a stable environment where everyone—man, woman, child knows their place," reads the accompanying text, which goes on to bemoan the soullessness of presentday country life: "monochromatic, fully enclosed, proud of techniques and efficiency."

Never mind the generalizations, never mind that the deprivations of Russian peasant life was a driver of one of the world's great cataclysms, the Russian Revolution. Just think about the phrase a "stable environment where everyone—man, woman, and child—knows their place." Think about what that implies, what a world in which everyone knows "their place" would look like for women, for African Americans, for the descendants of the Russian peasants in the photo.

Another foundational image can be found further up Wright's famous ramp: a photo of two stacks of books, one very tall and one very short, comparing "publications (in the architecture world) on the city and the countryside." It's intended to be a quick visual confirmation of the shortage of books about rural places. But the conceit hinges on the curators' definition of "in the architecture world," whatever that means. (In Koolhaas's personal library?) In reality, there's no shortage of books about non-urban places: Books about farming were a major fad in publishing a few years ago. But they apparently aren't sitting on Rem's desk. Nor did the curators bother to read the books in the photograph. I noticed the architect Carolyn Steel's 2008 book, *Hungry City*, in the stack of the urban tomes, even though it explores the intimate connection between the city and the countryside. When I read it, I was fascinated by one idea Steel put forth, that the density of industrial farming is a mirror image of the density of urban life. "Fields of corn and soya stretching as far as the eye can see, plastic polytunnels so vast they can be seen from space, industrial sheds and feed lots full of factory-farmed animals—these are the rural hinterlands of modernity." *Hungry City* was a precursor to this show, and it belonged in a third pile of books, one concerned with the very transformations that Koolhaas intended to explore.

Still, for all that, I experienced a brief moment of hope when I encountered yet another totemic display

COUNTRYSIDE? A REPORT A MO # REM KOOLHAAS



COUNTRYSIDE IN

GUGGENHEIM TASCHEN at the beginning of the exhibition: a reproduction of *The Bull*, a 1647 painting by Paulus Potter of a peasant and several of his farm animals, surrounded by walls full of questions depicted in "slightly blurry type," as Koolhaas described it. This grand display of textual overload—my favorite moment in *Countryside*—was the work of book designer Irma Boom, whose bag of tricks gives the show its visual character. The questions—there are hundreds of them—suggest a loose-knit, exploratory show full of surprises. "Is hay still relevant? Can we relearn romanticism? Who would have guessed that the future is wood?"

But, somehow, as I headed up the ramp, the looseness slipped away. The open-ended questions went unanswered. And I instead encountered didactic mini-narratives with this kid-doing-homework vibe about them. For instance, Franklin Delano Roosevelt, to combat the conditions that turned much of the Midwest into a "dust bowl," had 220 million trees planted between 1934 and 1942 as windbreaks to help the soil retain moisture and lessen erosion. More flamboyantly and less successfully, from the 1920s through the early 1950s, German architect Herman Sörgel promoted a concept he called Atlantropa, a scheme to lower the water level of the Mediterranean and Adriatic by building dams in strategic locations like the Strait of Gibraltar, thus creating habitable land on former sea bottoms between Europe and Africa.

It's not news that we humans have dedicated ourselves to manipulating nature to our advantage. Even the most startling objects exhibited, including a round, air-conditioned, automated 100-cow "milking parlor" in Doha, Qatar, or a cardboard beehive in a high-tech Netherlands greenhouse, have a familiar quality to them. For one thing, agriculture has always from the day the first human intentionally dug a hole and dropped a seed—been technological. The technologies may have evolved, but anyone who's ever paid attention to a cornfield or a vineyard knows that they are impositions of human needs and desires on the landscape. They are nurture, not nature.

Upstaged by Reality

Koolhaas isn't wrong about the significance of *Countryside*. I think the interplay between urban and rural, between the artificial and the natural, deserves all the attention we can give it. Everything we're dealing with at this moment in history—with its apocalyptic buzz—is about the conflicts between natural systems and man-made ones, between our needs and the needs of the planet. A museum show that tackles this most fraught relationship should be a powerhouse: exhilarating and jaw-dropping. This show is nothing

Juestion ? Why did we embrace the Market Economy at the exact moment that science who helps used to the certa mine the credibility of all intellectual speculation—to make any hypothesis look irresponsible compared to the certa an alibi to be done with humanism once and for all ? Good riddance or irretrievable loss ? Is a flight forward also a p the market has no plan, no program, no manifesto, no story, who helps us out of this impasse ? Are we lost or fo mine the credibility of all intellectual speculation—to make any hypothesis took intersponsible a flight forward also a p an alibit to be done with humanism once and for all? Good riddance or irretrievable loss? Is a flight forward also a p is the market has no plan, no program, no manifesto, no story... who helps us out of this impasse? Are we lost or fo is an Gulf) cities a response to Warming that could become universal: leave the city when it overheats? Why were cit is an Gulf) cities a response to Warming that could become universal: leave the city when it overheats? Were there not is mart for big stories? Has our own skepticism destroyed the way out? Do we know so much that nobody knows? In while here not take care of the countryside, their movement subtly coordinated with seasons, growth, ecologies? Were there not efense, the regional? Does "regional" offer a righteous alternative to the city? More serious? Less fashionable? Slower onk to the CEO? Is the preservation of culture and of nature having similar effects on both? Should we even use the sar one change? For whom do we preserve? Who do we sacrifice of another condition? Because it has to absorb the pressure to cha imprecision of culture and of nature having similar effects on both? Should we even use the sar more change? For whom do we preserve? Who do we sacrifice? How many reserves do we have in the world? 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What wou soles us, the second because it makes us feel humble? Do you have to be alone to realize what you feel? Are we never alone anyme term is their advance a good size? Why are they improve the second while one to realize that you feel? Are we never alone anyme es-is their advance a good sign ? Why are they impeccably organized while we are stuck in a perpetual muddle ? Why does perfect es—is their advance a good sign : why are they impectably organized while we are stated in a perpetual inducter with does perter ? Supervised by anthropologists ? Is it too late ? Is the destruction of the world doomed to remain a minority taste ? Will the beauty of the illusion of what it was ? When did we cease to meander ? Why do we only bisect spaces now, not turn off or reverse ? When did humankind: the Tesla GigaFactory, the Thermae at Vals, CCTV, or a refugee camp ? Most of it is rectangular ? What happened to the workers, ingenious technologies, a new scale ? What did we erase ? Did you ever look from the air at the periphery of any city ? All you sa uch did human density decline in factories, databanks, distribution centers... ironically, mostly in "centers" ? Do you remember seeing the m an robots function in overheated facilities ? Could we devise "suits" that provide workers with their own individual needs: heat, cooling, food a second Los Angeles but with a fraction of the people ? A size like Manhattan but with 50, 250, max 1250 inhabitants ? Is emptiness excitin umankind or the other side ? Will mathematics still matter ? Will they want to move to the remote constellations of boxes-or are there too r r are we stuck in evolution ... ? Do we really want slow architecture ? Were the Baths of Caracalla in Rome as big as Tesla in Reno ? Are we re endemic to vision ? Will Warming kill Democracy ? / `t only be stopped by cuthority ? Could Democracy kill Warming ? Who will beg of er tions before them ? 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n they have fewer experiences, less memory ? Are)? Can we still go there, unobserved ? Do those still go there, unobserved ? Do those still go there, unobserved ? in Connecticut, John Deere in Illinois-were the comes first, unpleasantness or indignation ... ? Are v h people left ? Where is the MIT for the countryside found, under "trash" ? Can we rehearse some what-ifs racter ? How did the "reception" become the ultimate sy

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not wanted to go anymore ? What do they hide or defend? ne first to escape ? We can fish on land, grow set on the 10th floor, create single plants that g ctions of intellectual life from view ? By introduing the notion of intellectual property, did we corrupt intellectual life ? Secrecy to enable manipula between intellectuals and the countryside ? The back and forth of Otium ? Agritourism in Tuscany ? 1c be "sent" by Mao ... ? What did countryside ks in the countryside ? Do we know recent intellect Is who have emerged from the countryside ? Should ar intellectual take risks or be smart enough to a slaves ? Did they have any choice ? Did the Chines believe in a similar model ? Was civilization launched f om the countryside, not imported from the city City of users ? All of us users ? Did we spoil it Yale's agrarian studies ? Wageningen University ? V I y are they not more in the foreground ? Is the o The car industry had solved the issue of cars ? Why d they invest all that competence merely in cheatin ool of the urban; pretending to welcome, geared to rei t? Turn into a mini-investigation ? Facial recognitio 21st-r intury mask ? Or is it simple decor ? is the co

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trigger the car ? Could mobility be reversed ? Where you would not have to go out, but "out" comes to you ? delivered by self-driving cars ? W o doubt ? Who will maintain the robots that maintain the land ? Will you be excluded, unless you are included ? Will exclusion be the default co ition abruptly ? Start a new one from scratch ? Judeo-Christian, Islamic, Confucian... what do they say about current conditions ? The last one the t has an adequate description, understanding, solution ? A great simultaneous unraveling—each side equally spent, a dump of ideas ? How should we the rside ? Could the corporate switch to repair the earth, when it becomes profitable ? Will we pay for it ourselves ? Why don't we pay for it ? What perverted

A flurry of questions surround a reproduction of The Bull, a 1647 painting by Paulus Potter-one of the show's opening salvos

like that. It offers little that is moving, or visually satisfying-an unfortunate outcome, because I greatly admire Irma Boom. She specializes in books that are overstuffed with type and images, including another Koolhaas project, The Elements of Architecture (Taschen, 2014), which has more than 2,500 pages and weighs nearly 8 pounds. But somehow, her technique doesn't have the same magic on the Guggenheim walls as it does on the printed page. No image or idea gets the breathing room generally given to objects in museums. It is all collaged together in a way that is typical of today's concept-heavy exhibitions. It implies that there is too much to say to privilege any one thing, too many ideas to give pride of place to any of them. There are some good photos (the ones of Tiksi, a Russian settlement near the East Siberian Sea, shot by Evgenia Arbugaeva, a photographer who spent her childhood there, are gorgeous). But this isn't a show that invites you to focus on aesthetics.

Nothing provides the moments of transcendence we hope for in museums. Nothing builds. Nothing adds up. Nothing makes you say at the end of the spiral, *Oh*, *this is why they mentioned that other thing at the very beginning*. For instance, *Countryside* covers the urbanization of the desert southwest in the U.S. (with massive data centers) and Kenyan villages (with smartphones) and rural China (with actual cities built to house farmers) without delving too deeply into any of these new hybrid places. We just need to know they exist. The show is everything the project team turned up, assembled in an order that seems like a compromise between geography and chronology. It's too generous. It's not generous enough.

The saving grace of Countryside is that while it has the look and feel of one of those gigantic Koolhaas/Boom concept books, the actual catalog is delightfully undersized, a pocket-sized paperback (also designed Boom) that is much more satisfying than the exhibition itself. For one thing, you can sit down and read it. The best story in the show gets full-length treatment in the catalog in an essay by Niklas Maak. As he writes, refugees from places like Iraq and Eritrea are reviving dying European towns-a story about people and not technology (and people, especially the denizens of rural places, are in short supply in this show). But what I especially love is that it's a story about people who don't know their place, or who have fled the place they know. Intentionally, or not, it's the inverse of Koolhaas's Swiss village: a new population arrives in an isolated town, establishes itself, participates in the local traditions and, over time, in a repudiation of right-wing nationalist rhetoric, begins to fit in. If it was the kind of exhibition that

had a narrative, if the spiral led someplace, this would be a fitting conclusion.

Of course, at the moment I'm writing this, the Guggenheim has been closed temporarily because of the coronavirus pandemic. COVID-19 was allegedly harbored by bats for millennia and likely infected humans via transmission from another wild animal, perhaps a scaly anteater, that was sold as a delicacy at a market in Wuhan, China, a city of 11 million people. In other words, *Countryside* was shut down by exactly the kind of uncanny connection between urban and rural it was curated to reveal. The show has been thoroughly upstaged by reality. Even a seasoned provocateur like Koolhaas can't compete.



Refugees helping out in a Catholic ceremony in Camini.





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Left: As detailed in the show's pocket catalog, refugees from the Middle East and Africa have helped revitalize the villages of Camini and Riaci in Italy

Top: One of the show's didactic narratives documenting how Franklin Delano Roosevelt had millions of trees planted to lessen erosion during the dust bowl

Above: A timely question

Nothing provides the moments of transcendence we hope for in museums. Nothing builds. Nothing adds up. Nothing makes you say at the end of the spiral, *Oh*, *this is why they mentioned that other thing at the very beginning*.

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A a *Top:* A display featuring the 19th-century French philosopher Charles Fourier's network of phalansteries, designed to A

house around 1,600 agricultural workers

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Above, Left: A study of land use and demographics for the average Chinese village

Above, Right: A study in pixel farming, in which robots plant crops

Opposite: An image of the Zeestraat (Sea Street) by Constantijn Huygens, designed in 1653 to connect the Hague and the fishing village of Scheveningen, next to one of the cutout-figure robots that wander the exhibition



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Editorial: COVID-19 Should Change Us

My sleep schedule, which is erratic in the best of times, has gone completely haywire since COVID-19 reached our shores. I'm spending nights staring at the ceiling, clenching and unclenching my jaws, and fitfully checking Twitter for news. Overreaction? The fact that they're digging mass graves in Iran suggests otherwise. Panicking about the health crisis triggers a cascade of crises. If the disease itself wasn't bad enough, the economic fallout is heart-attack inducing. It's tough to keep calm in the face of so much uncertainty, especially when the inherent nature of the situation prevents us from carrying on as usual.

The priority, of course, is to stay safe and healthy, which (as you hopefully already know) means washing your hands frequently, touching your face as little as possible, and avoiding contact with other people. To that end, AIA has made the smart and timely decision to postpone its May conference in Las Vegas, and other design organizations, schools, and firms are reacting to the pandemic similarly. Our online article "Maintaining Business Continuity with a Remote Workforce," by Evelyn Lee, AIA, is an excellent resource.

At the outset of the crisis, tech and practice editor Wanda Lau contacted seven practices to learn how they were coping. All of them emphasized the importance of heightened internal and external communication. Not surprisingly, they all also restricted or banned travel and asked staff to work from home. (Telecommuting had already become so prevalent, it appears, that many firms had the necessary infrastructure in place before the crisis started.) Just one firm mentioned project cancellations; another is monitoring building-product supply chains for disruptions—though clearly, both circumstances will have evolved by the time this issue of ARCHITECT hits your mailbox.

The injunction to self-quarantine poses a dilemma for the profession. Architecture is, among many other things, a form of social science. Architects facilitate interaction, create gathering places, build communities. What, then, is the appropriate design response to a health crisis that requires physically separating people?

Many observers are already saying that COVID-19 is changing society, not just in this nervous moment, but fundamentally. Beyond the immediate health and economic concerns, the profession will soon enough need to address the pandemic's causes and long-term consequences, which are obviously inextricable from globalization, industrialization, and climate change. International travel, development of wilderness land, and a warming planet are all raising frequency of infectious disease outbreaks and rates of infection.

At times of crisis, great leaders hunt for opportunities. During the Great Recession, the powers that be did precisely the opposite, doubling down on systems that had failed and rebuilding them much the same as before, or worse. Flaws intact, we revived the automotive, real estate, and banking sectors. At press time, the airlines were lining up for a handout, and health care and other industries seemed sure to follow. The government could use the crisis to implement reforms, but sadly I doubt it will. If we want change, we have to make it ourselves. The most effective design response to a plague—or financial downturn, or natural disaster—is to keep fighting for a more healthy, resilient, just society. Architects are good at it.

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