

LevenBetts  
New Affiliates  
!Melk

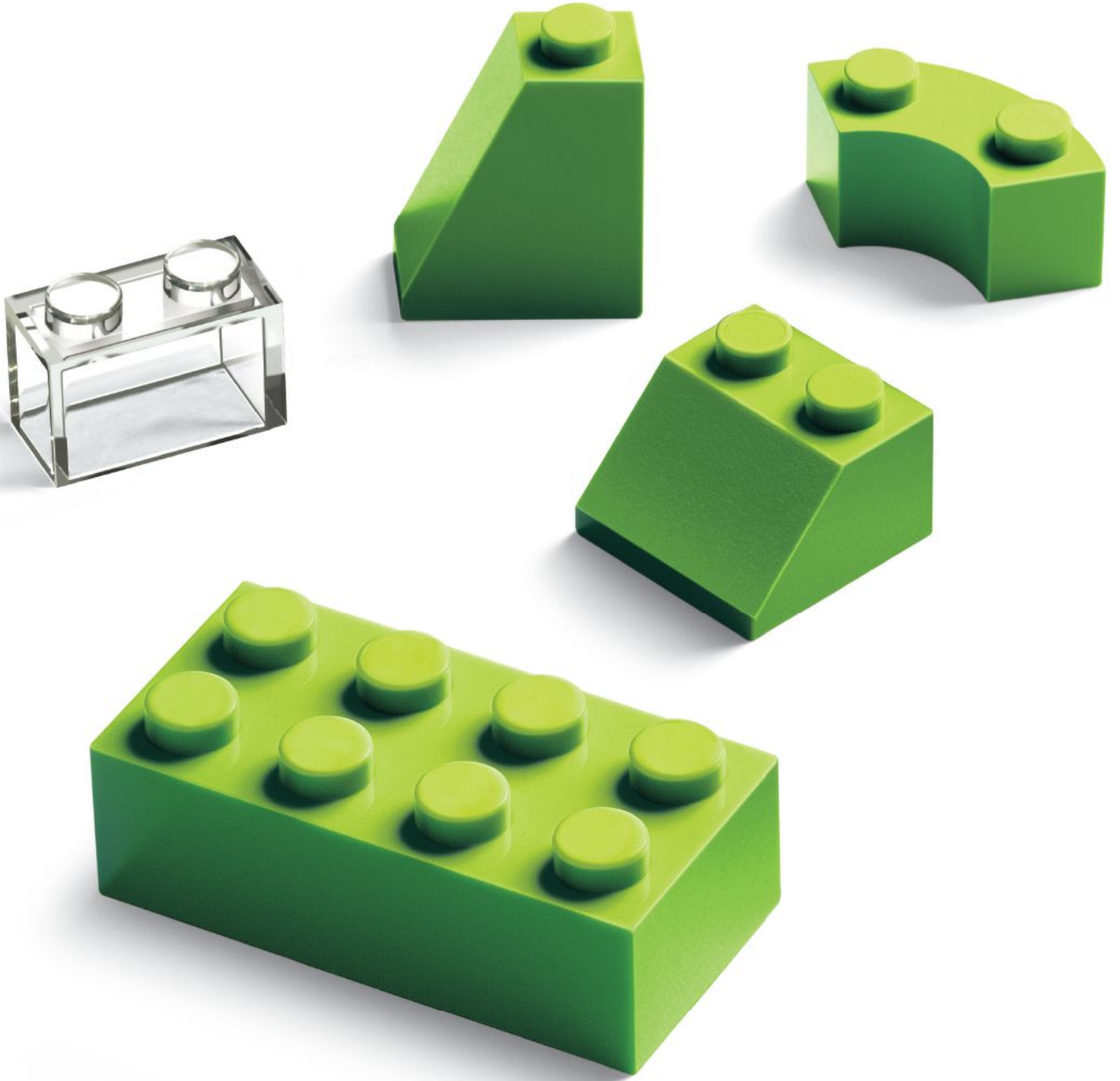
Opinion: Ingalill Wahlroos-Ritter  
The Frick Renovation  
Denise Scott Brown, Photographer  
Hindering Active Shooters

architectmagazine.com  
The Journal of the American  
Institute of Architects

## The Studio Prize

Including the Sloan Award







# Engineered— to work together

**Only one company can provide  
fully integrated building envelopes.**

If a building envelope is supposed to end up as one unified system—why cobble it together with disparate parts? Our curtain wall, windows, storefronts, skylights and glass are designed, engineered, tested and manufactured by the same company. Why? It makes buildings better. It saves you time. It reduces your risk. It just makes sense. So why doesn't every manufacturer do it? They can't. There's only one Building Envelope Company.™ Call 1-866-Oldcastle (653-2278) or visit us online at [obe.com](http://obe.com).



glass

curtain wall

storefronts

windows

skylights

interiors



**Oldcastle BuildingEnvelope®**

A CRH COMPANY



“WITH THE KITCHEN  
RENOVATION AT THE GARCIA  
HOUSE, WE’RE BRIDGING THE  
PAST AND THE PRESENT,  
AND AT THE SAME TIME,  
BRINGING THE TECHNOLOGY  
OF THE HOUSE TO THE  
PRESENT DAY, WHILE  
MAINTAINING THE INTEGRITY  
OF JOHN LAUTNER’S VISION.”

---

*The Designer’s Mind*

---

**RON RADZINER, FAIA**

*Architect/Design Principal*

**dacor**

LET THE SHOW BEGIN

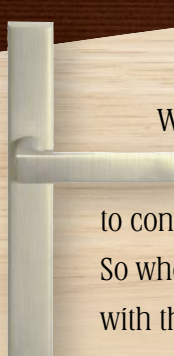


*Step into the Garcia House and experience the remodel at [Dacor.com](http://Dacor.com)*





NOTHING  
IS MORE STUNNING  
THAN A WELL-BUILT  
REPUTATION.



When you include Sierra Pacific windows and doors in your designs, what we do affects how you look. That's why we never compromise, on anything. Not in our vertically integrated approach to controlling every part of the manufacturing process. Not in our customized treatment of every order. So when we introduce innovations like our lift and slide door technology that makes entire walls move with the lightest touch, you can be sure it's made to bring you the best, so you can do the same for your clients. Maybe it's time we helped you create something beautiful.

[WWW.SIERRAPACIFICWINDOWS.COM](http://WWW.SIERRAPACIFICWINDOWS.COM) | 800-824-7744 | A DIVISION OF







**SIERRA  
PACIFIC**  
WINDOWS THAT  
NEVER COMPROMISE



# A Contents

Volume 107, number 9. September 2018.

On the cover: *Wanderweg* by Westley Burger, Feier Lan, and Dongfang Xie.

*The New Grand Tour—A New Visitors Center for CERN, University of Michigan.*

- 18 Remembering the Emanuel Nine
- 20 Patient Placemaking
- 22 Street Smarts
- 24 Hot (Affordable) Housing
- 26 Life on Mars
- 28 Fountain of Ideas

## Tech + Practice

- 32 Best Practices: Media Training for Architects
- 35 Detail: The Barn's Soaring Superstructure
- 38 Next Progressives: New Affiliates
- 44 Products: How to Specify Acoustical Finishes
- 46 Opinion: The Power of Micro-Choices
- 48 Architectural Lighting: Light & Architecture Design Awards



- 60 Residential: LevenBetts

## AIA Architect

- 73 The Need to Lead in School Design
- 75 Backyard Frontier
- 77 A City of Juxtapositions
- 78 How Architecture and Design Can Hinder Active Shooters
- 81 Where Sustainability Meets Prosperity
- 82 Places for People

## Columns

- 87 Denise Scott Brown's Wayward Eye  
by Elizabeth Greenspan
- 103 How the Frick's Expansion Works (Just Barely)  
by Aaron Betsky

## Editorial

- 160 Let's Do Better by Dementia  
by Ned Cramer

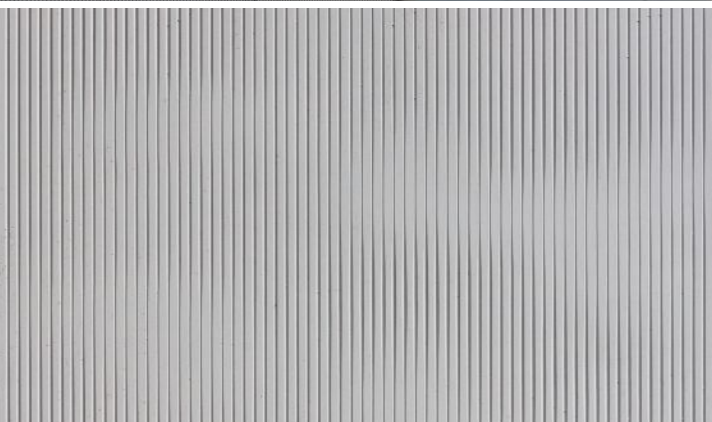


- 114 The Studio Prize
- 116 Animate Archi-Tectonics,  
the Cooper Union
- 120 Capstone, University of Arizona
- 126 A Home is Not a House,  
University of Texas at Austin
- 132 The New Grand Tour,  
University of Michigan
- 140 Coding Flux, University of Toronto
- 146 The Architectonics of Music,  
Columbia University





TAKTL®



## Introducing SHADOWS™

The newest addition to our growing portfolio of standard and custom textures, SHADOWS was designed with three dimensional variation in surface texture to provide a subtle play of light and movement throughout the day.

Available in standard dimensions up to 4x12 feet and our full range of colors and finishes.

10 STANDARD TEXTURES + 12 STANDARD COLORS  
ASTM C1186: Grade IV Certification

TAKTL's proprietary process and formula control the manufacture of our Architectural Ultra High Performance Concrete (AUHPC®) from the arrival of raw materials in our plant through the delivery of finished panels and architectural elements. Our design specialists work with you from the earliest phases of design to select standard colors, textures, and finishes, or to develop custom versions to suit your specific needs. TAKTL is perfect for high performance building envelopes, to meet exacting specifications on time and on budget with a beautiful, durable surface.



Pittsburgh, PA | 412.486.1600 | info@taktl-llc.com

WWW.TAKTL-LLC.COM





## The concrete *brilliance* of quartz.

The 2018 Metropolitan Collection by Caesarstone is the evolution of the industrial trend, blending the urban edge of concrete with the superior performance of quartz. Explore the new collection and dare to design boldly at [caesarstoneus.com/metropolitan](https://caesarstoneus.com/metropolitan).



Excava 4046





# Building Facades from the Ground Up

THE OWNER'S PERSPECTIVE

Facade  
Tectonics  
Forum

FORUM  
NEW YORK

The building facade system combines attributes of both performance and appearance like nothing else in architecture. Navigating the implementation of a contemporary facade system program is the single most challenging component of building design and construction. Yet, the outcome largely determines the ultimate success of a new building project or deep green renovation. Escalating code requirements, increasingly complex facade system technology, emerging novel delivery strategies, convoluted supply chains and a constantly morphing risk environment combine to challenge the most savvy and experienced building owner/developer. Facade Tectonics Forum: NYC explores these issues with the aim of improving the facade system implementation process from the unique perspective of building ownership.

**FRIDAY, NOV 2, 2018**  
**THE TIMESCENTER**

HOSTED BY

 **Ornamental Metal Institute of New York**

FACADETECTONICS.ORG/EVENTS

## ARCHITECT

The Journal of the American  
Institute of Architects

### Editor-in-Chief

Ned Cramer, ASSOC. AIA  
ncramer@hanleywood.com  
@NedCramer

### Managing Editor

Greig O'Brien  
gobrien@hanleywood.com

### Design

Editor  
Katie Gerfen  
kgerfen@hanleywood.com

### Associate Editor

Sara Johnson  
sajohnson@hanleywood.com  
@Sara\_Johnson

### Features

Senior Editor  
Eric Wills  
ewills@hanleywood.com

### Editorial Intern

Miabelle Salzano

### Design Intern

Taylor M. Crawford

### Technology and Practice

Editor  
Wanda Lau  
wlau@hanleywood.com  
@wandawlau

### Associate Editor

Katharine Keane  
kkeane@hanleywood.com

### Assistant Editor

Ayda Ayoubi  
aayoubi@hanleywood.com

### Multimedia

Video Production Manager  
Lauren Honesty  
lhonesty@hanleywood.com

### Videographers/Video Editors

Henrietta Biayemi  
Dan Tayag

### Art Director

Robb Ogle  
rogle@hanleywood.com

### Architectural Lighting

Editor-at-Large  
Elizabeth Donoff  
edonoff@hanleywood.com

### Contributing Editors

Aaron Betsy  
Blaine Brownell, AIA  
Thomas de Monchaux  
Elizabeth Evitts Dickinson  
John Morris Dixon, FAIA  
Thomas Fisher, ASSOC. AIA  
Cathy Lang Ho  
Karrie Jacobs  
Edward Keegan, AIA  
Ian Volner  
Mimi Zeiger

### Design Group

President  
Ron Spink  
rspink@hanleywood.com  
202.736.3431

### Advertising

**West**  
Director, Design Market  
Solutions  
Suren Sagadevan  
ssagadevan@hanleywood.com  
310.863.1153

Digital & Amplify Solutions  
Manager  
Mattie Hanley  
mhanley@hanleywood.com  
202.380.3983

Account Coordinator  
Danielle Washington  
dwashington@hanleywood.com  
202.380.3719

**Emerging Accounts**  
Sarah Mueller  
smueller@hanleywood.com  
202.736.3619

**List Rentals**  
The Information Refinery  
Brian Clotworthy  
brian@infofinery.com  
800.529.9020

**East**  
Director, Design Market  
Solutions  
Michael Gilbert  
mgilbert@hanleywood.com  
773.824.2435

Digital & Amplify Solutions  
Manager  
Erika Taylor  
etaylor@hanleywood.com  
202.380.3942

Account Coordinator  
Heidi Pieroni  
hpieroni@hanleywood.com  
773.824.2457

**Production**  
Production Director  
Margaret Coulter

Production Manager,  
Advertising  
Daisril Richards

Inside Sales  
Ad Traffic Manager  
Annie Clark

**Lighting/U.K. & Europe**  
Cliff Smith  
csmith@hanleywood.com  
864.642.9598

**Canada**  
D. John Magner  
jmagner@yorkmedia.net  
416.598.0101, ext. 220

**China, Hong Kong, Taiwan**  
Judy Wang  
judywang2000@vip.126.com  
86.13810325171

**Hanley Wood University/  
Education**  
Jim Bagan  
jbagan@hanleywood.com  
773.824.2428

**Marketing**  
Vice President, Marketing  
Matthew Carollo

Audience Marketing  
Director  
Chris Lustan

Copyright 2018 by Hanley Wood. One Thomas Circle NW, Suite 600, Washington, DC 20005.  
202.452.0800. Reproduction in whole or in part prohibited without written authorization.  
All rights reserved. Printed in the USA.



**Introducing the access system designed to  
make life easier for everyone.**

Contact us today to learn more about Latch.  
[www.latch.com](http://www.latch.com) / [sales@latch.com](mailto:sales@latch.com)



**LATCH**





# Capture clarity.

**Fit the bill—and the build—with new *Acuity*™ Low-Iron Glass.**

Elevate aesthetics for a modest investment, without sacrificing performance. New *Acuity*™ Glass by Vitro Architectural Glass (formerly PPG Glass) is an affordable low-iron solution available with *Solarban*® solar control low-e coatings, offering vivid views with no green cast. Where conventional clear glass was once a given, pure clarity is now within reach.

Request samples and learn more at [vitroglazings.com/acuity](https://vitroglazings.com/acuity)





  
**Acuity**<sup>™</sup>  
Low-Iron Glass

  
Architectural Glass

 Formerly PPG Glass

METALS IN CONSTRUCTION MAGAZINE  
2019 DESIGN CHALLENGE

# Create a New Urban Pathway

Prize: \$15,000

Submit your vision for a  
pedestrian bridge that  
connects Moynihan Station  
and Hudson Yards.

JURY

Ben Prosky, *AIA New York*

Claire Weisz, *WXY*

Enrica Oliva, *Werner Sobek New York*

Paul Bauer, *Dattner Architects*

Jack Robbins, *FXCollaborative (Moderator)*

LEARN MORE AND REGISTER AT  
[metalsinconstruction.org](http://metalsinconstruction.org)

SPONSORED BY

 **Steel Institute of New York**

## ARCHITECT

The Journal of the American  
Institute of Architects

**Hanley Wood Media**

President  
Dave Colford

Vice Presidents, Editorial

Ned Cramer  
John McManus

Senior Director,  
Print Production  
Cathy Underwood

Executive Vice President,  
Operations  
Sarah Welcome

Vice President,  
Client Operations  
Mari Skelnik

Director of Analytics  
Jennifer Malkasian

Executive Vice President,  
eCommerce and Digital  
Jennifer Pearce

Vice President, Digital Strategy  
and Operations  
Bridget Forbes

Vice President, Design  
Aubrey Altmann

**Hanley Wood**

Chief Executive Officer  
Peter Goldstone

Chief Revenue Officer/  
President, Media  
Dave Colford

Senior Vice President,  
Corporate Accounts  
Ryan Flom

Vice Chairman Emeritus  
Frank Anton

Chief Data Officer/  
President, Metrostudy  
Andrew Reid

Vice President, Finance  
Ron Kraft

Vice President,  
Corporate Controller  
Keith Rosenbloom

Chief Financial Officer  
Matthew Flynn

President, Marketing  
Jeanne Milbrath

Senior Vice President,  
Marketing  
Sheila Harris

Director of Sales,  
Emerging Accounts Group  
Philip Hernandez



The American  
Institute  
of Architects

**2018 Board of Directors**

Carl Elefante, FAIA, President  
William Bates, FAIA, First Vice President  
Bruce Sekanick, FAIA, Secretary  
Patrick Panetta, AIA, Treasurer  
Heather Koury, HON. AIA, CACE Director  
Keshika de Saram, ASSOC. AIA, Student Director  
Ross Miller, AIA, Associate Director  
Peter Exley, FAIA, At-Large Director  
Emily Grandstaff-Rice, FAIA, At-Large Director  
Daniel Hart, FAIA, At-Large Director  
Donald I. King, FAIA, At-Large Director  
Evelyn Lee, AIA, Director  
Jennifer Workman, AIA, Director  
Robert A. Ivy, FAIA, EVP/Chief Executive Officer  
AIA Strategic Council: Jaime Sobrino, AIA, Moderator.

The AIA Architect section of this magazine is produced by the Institute as a benefit to its members in partnership with ARCHITECT's editorial and production teams. Please direct any questions or comments to William Richards, Senior Director of Digital Content Strategy for the AIA.

hanleywood



BPA  
REALITY





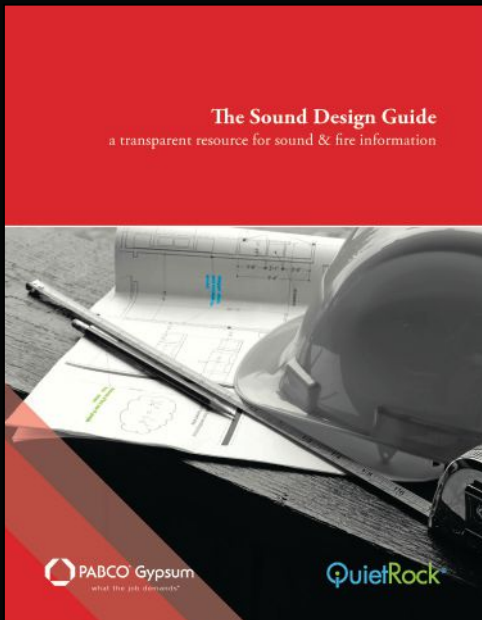
DESIGNED WITH PURPOSE



Because our expectations are as high as yours. Discover the difference at [marvinwindows.com](http://marvinwindows.com).



# you need a transparent resource for sound & fire design



**CREATED FOR THE BUILDING PROFESSIONAL**, by building professionals; The Sound Design Guide is **THE FIRST RESOURCE** to bridge the information gap between **SOUND-RATED** assemblies and **FIRE-RATED** assemblies. PABCO® Gypsum believes it is the duty of a manufacturer to provide contemporary test data and practices - not relying on vintage information dusted off from some archive. By providing relevant and transparent information, we believe Architects and Builders alike can make **INFORMED DECISIONS**.

This exclusive guide showcases QuietRock® sound reducing drywall as the premier choice to satisfy designs requiring greater sound attenuation and fire resistance, using a single tested design.

Visit **WWW.PABCOGYPSUM** or **WWW.QUIETROCK.COM** **TO DOWNLOAD** your copy and join our quest for transparent decision making in wall design.

 **PABCO® Gypsum**  
what the job demands®



# SteelDay Turns 10. Join the party!



- Attend our free webinar, *Birth of the Steel Skyscraper*, learn about steel's role in the evolution of structural engineering innovation, and earn 1.0 PDH
- Visit a steel fabricator, mill or job site and see the industry in action
- Watch an exclusive pre-screening of the documentary film, *Leaning Out*, the story of the acclaimed structural engineer Leslie E. Robertson and earn 1.0 PDH
- Get 10% off everything in the AISC Bookstore
- Experience a unique networking opportunity with other industry and design partners to celebrate steel

**Smarter.  
Stronger.  
SteelDay.**

find an event at  
[www.aisc.org/steelday](http://www.aisc.org/steelday)  
September 28, 2018



**Smarter. Stronger. Steel.**

American Institute of Steel Construction  
312.670.2400 | [www.aisc.org](http://www.aisc.org)



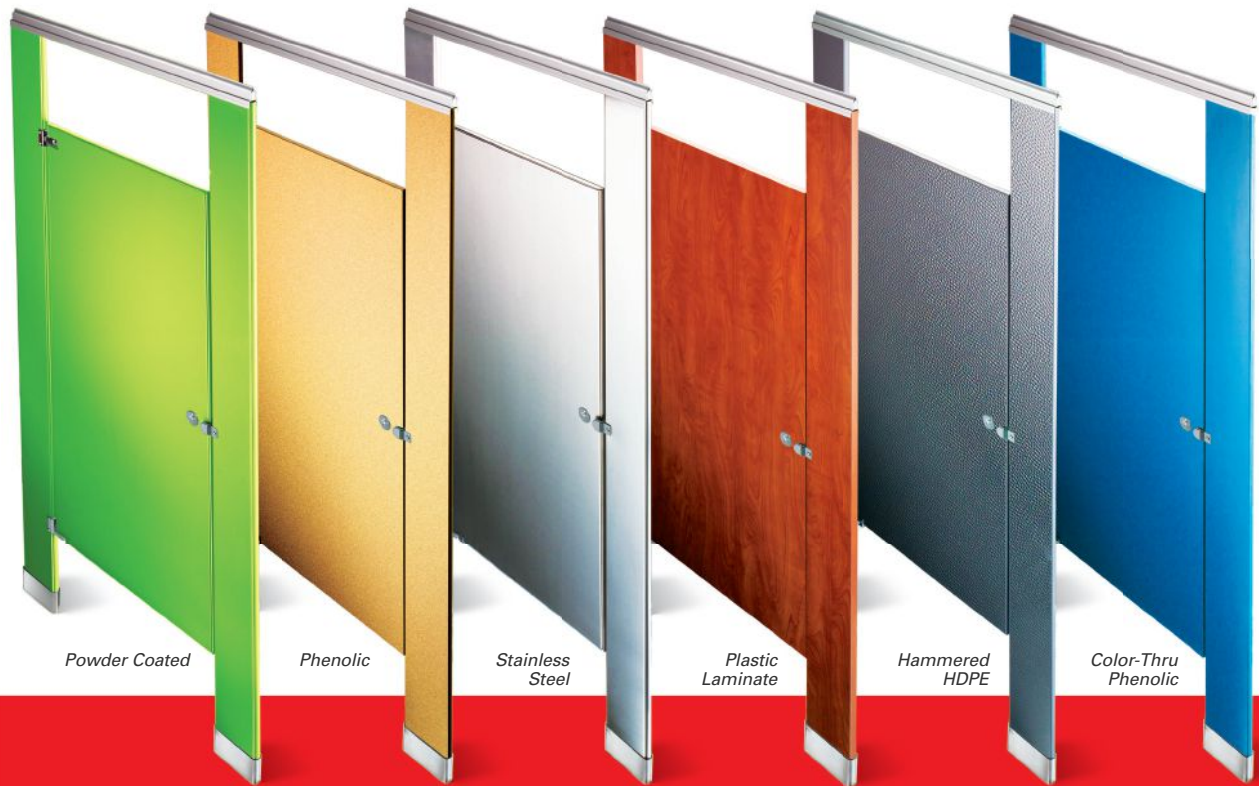
### Remembering the Emanuel Nine

In July, as part of the Emanuel African Methodist Episcopal Church's 200th anniversary celebration, plans were unveiled for a memorial honoring the nine members murdered in 2015. Designed by Handel Architects—which operates offices in New York, San Francisco, Boston, and Hong Kong—the memorial in Charleston, S.C., will feature a courtyard flanked by two curved benches that form an ellipse around a marble fountain engraved with the victims' names. Five trees and five stone benches encircling a new Survivors' Garden will represent the five survivors of the attack, with a sixth bench representing the church. —MIABELLE SALZANO

> Read more about the Emanuel Nine Memorial at [bit.ly/EmanuelNineMemorial](http://bit.ly/EmanuelNineMemorial).



# LOTS OF PARTITION MANUFACTURERS OFFER CHOICES—**LIKE WHICH COLOR PLASTIC WOULD YOU PREFER?**



**Introducing the largest collection of partitions from one source.**

So why do other partition manufacturers promote only one type of partition? Simple, that's all they offer. Yet partitions are not one type fits all. That's why only ASI offers the most comprehensive collection of toilet partitions available anywhere. Welcome to choice—welcome to the new ASI. **For more information, call 708-442-6800, or visit [asi-accuratepartitions.com](http://asi-accuratepartitions.com)**

**ASI**<sup>®</sup> *Accurate  
Partitions*



### **Patient Placemaking**

Liberal use of ipe and terra-cotta, which was selected in order to seamlessly integrate with the existing facility, runs throughout the expanded Story County Medical Center Outpatient Unit (shown) in Nevada, Iowa, designed by Iowa-based Invision Architecture. The facility was one of seven winners in the 2018 AIA/AAH Healthcare Design Awards, a program presented by the American Institute of Architects' Academy of Architecture for Health that recognizes both built and unbuilt projects. Buildings by Perkins+Will, Steven Holl Architects, and HOK were also among this year's winners, which span four U.S. states and London. —SARA JOHNSON

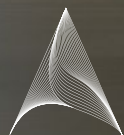
> For information about all of the winners in the 2018 AIA/AAH Healthcare Design Awards, visit [bit.ly/AIAAAHawards18](http://bit.ly/AIAAAHawards18).





## SoftGrid<sup>®</sup> Family Ceiling & Wall Acoustical Systems

Arktura's SoftGrid<sup>®</sup> Family of acoustical systems opens up a multitude of scalable, easy-to-implement possibilities for design and acoustical impact, all while effortlessly accommodating and enhancing new and existing structural, HVAC, and lighting elements. Choose from a library of styles constructed from our high-performance Soft Sound<sup>®</sup> acoustical material, NRC rated up to 0.9, and available in a wide variety of colors and finishes, including wood-grain textures. Modules ship flat-packed, are field trimmable, and can be installed along ceilings or hung vertically to reduce noise from all directions, across any space.



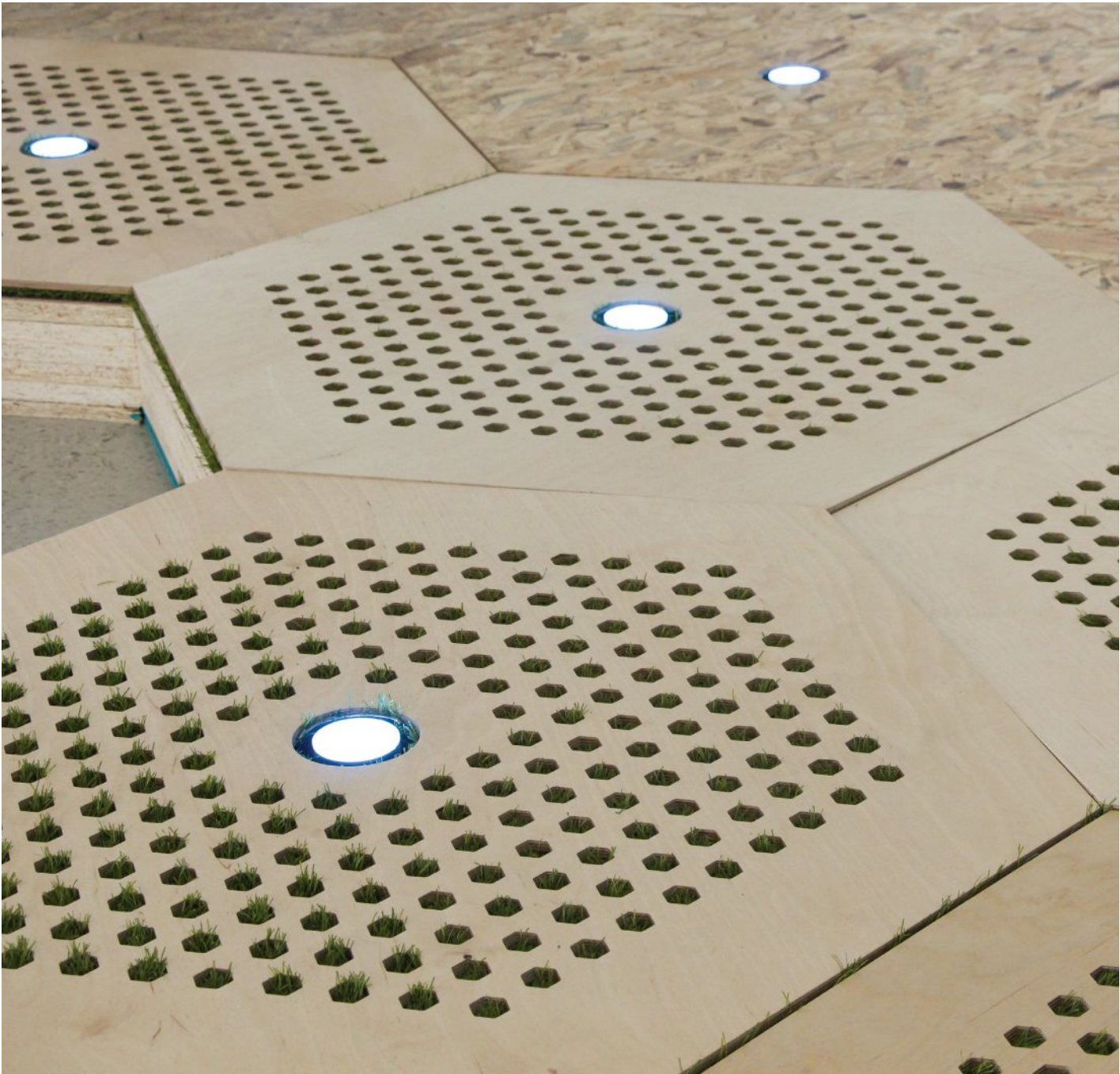
A R K T U R A

[arktura.com/atmosfera-family](http://arktura.com/atmosfera-family) | [info@arktura.com](mailto:info@arktura.com)

*Fueling Possibilities<sup>®</sup>*

Pictured: SoftGrid<sup>®</sup> Wave ceiling application for Private Client, San Francisco, California, a collaboration with Gensler SF





### Street Smarts

Design firm Carlo Ratti Associati—which has offices in New York, London, and Turin, Italy—in collaboration with the Toronto office of New York-based Sidewalk Labs, has designed the Dynamic Street, a prototype of a reconfigurable and removable paving system that uses embedded lights to distinguish traffic zones. An installation is on view at the Toronto office. Made up of 232 hexagonal pavers, each measuring 4 feet in diameter, the installation spans a 2,500-square-foot surface simulating a 36-foot-wide street. The modules are currently wood, but the team expects to use more durable materials such as concrete or rubber in the future. —AYDA AYOUBI

> Read more about the Dynamic Street prototype at [bit.ly/DynamicStreet307](https://bit.ly/DynamicStreet307).



# Fabricoil®

## Fabricoil® wire fabric systems define extraordinary spaces

Fabricoil has become the material of choice for many common exterior applications. Fabricoil exterior systems feature robust corrosion-resistant materials and finishes, along with attachment hardware engineered to withstand the environmental loads they'll encounter. Explore the proven applications for Fabricoil today, or dream up your own. Fabricoil transforms otherwise ordinary exterior building elements - a shade, an awning, a security screen, or decorative panel - into a standout feature of your design.

Photo: © 2017 David Massengill Photography



**CASCADE**  
architectural

a division of Cascade Coil Drapery, Inc.

800.999.2645  
fabricoil.com  
cascadearchitectural.com

"The design included an upgraded façade for the garage and Cascade provided a turn-key solution that aesthetically achieved the design. The Cascade team was instrumental in the design phase to assist with developing a design solution to meet our budget."

Virginia Campbell  
Design Principal  
Collaborative Studio





### **Hot (Affordable) Housing**

Only two projects—both on the West Coast—won recognition in this year’s AIA/HUD Secretary’s Awards, an annual program presented with the office of the Secretary of the U.S. Department of Housing and Urban Development that recognizes exemplary affordable housing projects. Five88 in San Francisco by local firm David Baker Architects (featured in ARCHITECT’s May 2018 issue) won in Category One: Excellence in Affordable Housing Design Award, and Station 162 Apartments (shown) in Gresham, Ore., by Portland firm Dao Architecture won in Category Four: Housing Accessibility—Alan J. Rothman Award. —SARA JOHNSON

> See more images of the winners of the AIA/HUD Secretary’s Awards at [bit.ly/AIAHUDAwards18](http://bit.ly/AIAHUDAwards18).





INTRODUCING  
**ACOUSTI-CLEAR®**  
PROTECTOR SERIES

- Emergency line-of-sight deployment system
- Control space visibility with push of a single button
- Activation deploys blinds in closed position and temporarily disables closure and seals for maximum security
- Activation initiates blind deployment of all partitions in dedicated security group
- \* Unmatched safety features while providing flexible space, daylighting, and acoustical control

Contact your local Modernfold, Inc. Distributor today to learn more about Acousti-Clear® and the new Protector Series by calling **800-869-9685** or visiting **modernfold.com**



### **Life on Mars**

NASA, with Bradley University in Illinois, awarded five teams a total of \$100,000 in the first level of the third phase of its 3D-Printed Habitat Challenge, launched in 2014. The competitors designed a 1,000-square-foot living space that would support four astronauts over a one-year mission on Mars. A team from Rogers, Ark., won first place for its Zopherus modular habitat (shown), which features an autonomous robot rover with an integrated printer chamber that seals to the ground and 3D prints hexagonal structures in its pressurized interior cabin, using materials from the planet's surface, all without human interference. —AYDA AYOUBI

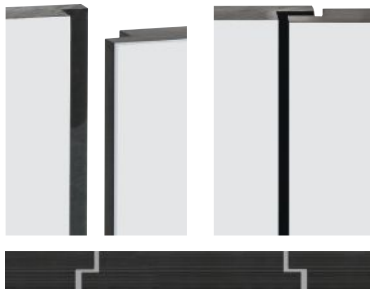
> For more information these five winners in the 3D-Printed Habitat Challenge, visit [bit.ly/NASAhabitat](http://bit.ly/NASAhabitat).



# Out of sight.



Bobrick's privacy partitions eliminate sight lines between doors and stiles, and above and below panels.



**Gap-Free interlocking design.**

Sight lines between doors and stiles are an emerging sensitivity in restrooms. Our Gap-Free design is an integrated solution.



**Max. Height doors and panels.**

4 5/16" floor clearance vs 12", and 72" panel height vs 58". Specify Gap-Free and Max. Height for double the privacy.



**BUILDING VALUE SINCE 1906**  
**BOBRICK.COM**

© 2018 BOBRICK WASHROOM EQUIPMENT, INC.



### **Fountain of Ideas**

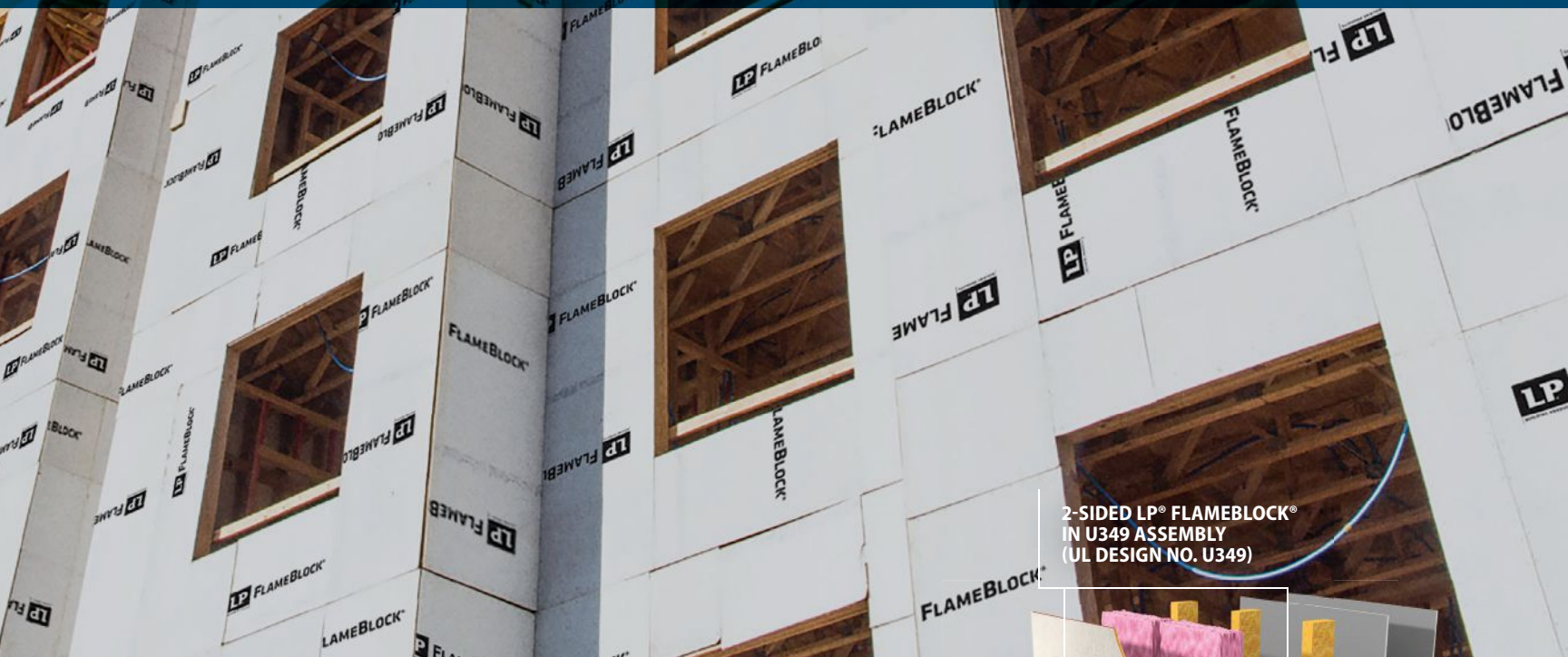
Following in the footsteps of several Apple stores before it, the new Apple Piazza Liberty in Milan is designed around steps. London-based firm Foster + Partners, a longtime collaborator with the \$1 trillion company, designed the store's entrance as a descent into a fountain encased in 26-foot-tall glass walls (shown). "In its simplicity, it echoes the idea of walking into a big fountain without getting wet, and the joy of being alive," said Stefan Behling, a head of studio at Foster + Partners. Additional stairs sunk below the plaza frame stepped seating for the store's amphitheater. —SARA JOHNSON

> Visit ARCHITECT's Project Gallery for more images of Apple Piazza Liberty: [bit.ly/ApplePiazzaLiberty](https://bit.ly/ApplePiazzaLiberty).



# Meeting code is only the beginning.

A single fire-rated OSB panel that gives you what you need to help you design what you want.



2-SIDED LP® FLAMEBLOCK®  
IN U349 ASSEMBLY  
(UL DESIGN NO. U349)

Do more than you have ever thought you could with LP® FlameBlock® Fire-Rated OSB Sheathing. It's engineered to meet fire codes, offers an Exposure 1 classification, and with a thinner panel it can deliver the same structural strength as FRT. Plus, it eliminates the need for an extra layer of gypsum as compared to common wall assemblies. It's a proven product that saves you money in the long run and gives you greater design freedom—all in a single panel.



**FLAMEBLOCK®**  
FIRE-RATED OSB SHEATHING

⚠ Cal. Prop 65 Warning: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection.

For more information, go to [www.P65Warnings.ca.gov/wood](http://www.P65Warnings.ca.gov/wood)

© 2018 Louisiana-Pacific Corporation. All rights reserved. All trademarks are owned by Louisiana-Pacific Corporation.



**Meet Code. Exceed Expectations.**  
[LPCorp.com/FlameBlock](http://LPCorp.com/FlameBlock)



# LUMBER BRINGS EVERYTHING TO LIFE.



**NORTHWEST  
HARDWOODS**  
KEEP PIONEERING

[northwesthardwoods.com](http://northwesthardwoods.com)

## Naturally nostalgic. Natural hardwoods.

Natural hardwoods offer the sustainability, authenticity and comforting natural beauty of a material derived straight from our soil. The multi-generational staying power of quality hardwoods are a part of our homes and our life stories. We're proud to be America's largest and only coast-to-coast hardwood lumber producer.



**Panasonic**



**WITH GREAT  
POWER COMES  
GREAT  
VENTILATION**

Underperforming ventilation fans not only expose occupants to unhealthy indoor air, they expose your business to unnecessary risk. Problems such as code compliance, warranty issues, callbacks, legal liability and loss of reputation, to name a few.

A powerful Panasonic ventilation fan removes unhealthy air so you can deliver healthy homes that meet code every time.

Get rid of your risks and your troubles with the Panasonic Installed Performance Promise.

**To find out how, visit [reinventingventing.com](http://reinventingventing.com)**



# Best Practices: Media Training for Architects

TEXT BY JEFF LINK

Should architects receive media training prior to speaking with the press? It is a question that looms more every day as designers embrace activist roles, take on sensitive projects, and strive to make a name in the competitive marketplace. Here, several architects and public relations experts share their thoughts.

## Improve Your Messaging

Media training can help architects deliver a more coherent, gripping message while avoiding common missteps such as neglecting to mention key contributors, leaking confidential project details, or unintentionally slighting clients.

Tami Hausman, architectural historian and the founder and president of New York–based marketing and PR firm Hausman Communications, says that while some architects are naturally gifted speakers, many are not as effective as they could be at reinforcing key messages that help differentiate their firms. “The most basic lesson is be truthful,” she says. “We also tell people to be very respectful and helpful to the interviewer.” At a cost of “several thousand dollars and up,” depending on

“The most basic lesson is be truthful.”

—Tami Hausman, founder and president, Hausman Communications

the service length and rigor, Hausman’s firm offers videotaped mock interviews, tutorials, talking points, and role-playing sessions to prepare practitioners for media interviews and high-profile speaking engagements.

## Understand Press Protocols

John Patrick, founder of Detroit-based communications firm Above the Fold, notes that a consultancy can help identify aspects of a project—such as new materials or structural innovations—that might attract the press’s attention. “The media is bombarded with inquiries and information,” he says. “You want to be as specific as possible so they don’t have to work so hard. Those who make it as easy as possible get more media.”

Knowing when to say nothing is also important. Though most media outlets respect “off-the-record” comments as ethically prohibited from publication, these remarks may still damage a firm’s reputation, Hausman says. She references recent *New York Times* article “What Does ‘Off the Record’ Really Mean?” by Matt Flegenheimer who notes that a journalist’s impressions of a source in off-the-record moments can provide context, even if the conversation is never made public. “You never know what someone is going to use or not.”

## Taking a Stance

With architects and firms becoming more vocal in their responses to social and political issues, such as the #MeToo movement and the proposed

U.S.–Mexico border wall, media training can help practitioners who wish to speak out to modulate their message.

Though opining on controversial topics is no longer taboo, Hausman says, architects must clarify whether they are speaking personally or on behalf of their firm, and comment strictly on issues rather than on individuals.

Patrick agrees: “You can close a lot of doors by speaking through social media and other channels about things that don’t necessarily reflect your work. An architecture firm’s Instagram account is not the appropriate place to express political thoughts, unnecessarily.”

## Cost vs. Reward

Media training is not free, of course. Besides consulting fees, another consideration is staff time. Philip Chen, AIA, principal at Boston-based Ann Beha Architects, says his firm had hired Joanne Linowes, head coach and founder of Westwood, Mass., executive presentation firm LXD1, to lead a group-speaking training. “Having your whole office in a workshop for half a day—that’s the greatest cost,” Chen says. “We don’t regret it, but that’s one of the concerns.”

Even with professional training, firms should not expect instant results. “The thing we found important is the follow-up, putting the lessons into practice,” Chen says. “It was useful to have an outside consultant come in and coach us and offer a different perspective. But you need to reinforce those things continually.”





WHERE QUIET AND BEAUTY MEET.  
Sound ratings from STC-28 to STC-52.

**VT** Architectural  
INDUSTRIES Wood Doors  
VTDoors.com 1-800-827-1615 (ext. 10512)



©2018 VT Industries, Inc. All rights reserved.

The mark of responsible forestry

The Journal of the American  
Institute of Architects

**Innovation** is the hallmark of  
progressive design excellence.

Hanley Wood congratulates and thanks Think Wood for  
its ongoing commitment to environmental responsibility,  
design leadership, and inspired built solutions.



# Detail: The Barn's Soaring Superstructure

TEXT BY TIMOTHY A. SCHULER

To invigorate the Bridge District, a 178-acre development in West Sacramento, Calif., Dutch designer Jerry van Eyck and his New York-based landscape architecture firm !Melk proposed creating a gathering place for all event types—a shade structure in which “the river ecology leaps into the organized geometry of the city and locks fingers with it,” Stephen Jaycox, former chief design officer of local developer Fulcrum Property, recalls van Eyck saying.

Using parametric design software, !Melk explored novel forms possible with nominal lumber. They began with the shape of a sprouting seed in plan and studied sun angles to maximize the amount of shade the structure could provide. After controlling for several factors, they arrived at the sinuous structure now known simply as the Barn.

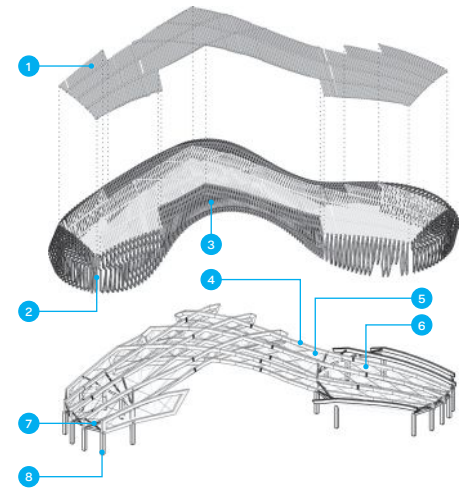
Of the Barn's 9,100-square-foot plan, only a third is indoor space. The rest is essentially a giant breezeway, an 80-foot-long canopy roughly 30 feet

wide that soars 20 feet over a public plaza. The structure functions as a double cantilever, according to !Melk. A series of intersecting, trestle-like glulam trusses extend toward one another from their respective anchoring pods.

The trusses, the longest of which span 140 feet, are supported by cross-bracing and crisscrossing steel tie-rods. Giving the Barn its sleek form is a secondary structure made out of 3D frames of nominal lumber that provide the armature for its cedar-shingled skin.

Seattle-based structural engineering firm Magnusson Klemencic Associates consulted on the project. Wood Tech Services in Eugene, Ore., fabricated the glulam members, made of Douglas fir and larch woods, and local builder Brown Construction erected the Barn between April 2015 and June 2016.

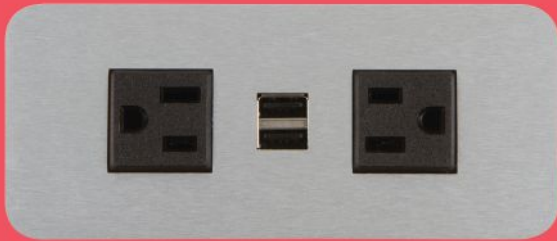
The impact of the Barn on the neighborhood's revitalization, van Eyck says, “was much stronger than I ever could have imagined.”



1. Purlin topped by Class A untreated 6"×17" cedar shingles (not shown)
2. 2×6 secondary frame (24" o.c.) topped with 0.75" OSB plywood and waterproofing membrane (not shown)
3. 2×6 secondary frame (12" o.c.)
4. Glulam truss with 21"×8.75" chords
5. Ø0.75" to Ø1.5" steel tie-rods
6. Steel cross-bracing between trusses
7. Cross beams
8. Concrete-filled steel column (typ.)

# Power Your Furniture™

PCS62



Mounts anywhere.  
Power access wherever you need it.

**MOCKETT**  
DOUG MOCKETT & COMPANY, INC.

www.mockett.com  
800-523-1269

Fine Architectural Hardware for Your *fine* Furniture®

Have a fantastic new residential project?  
You have one last chance to enter the



The deadline has been extended until Sept. 14

SUBMIT YOUR WORK AT  
> [radesignawards.com](http://radesignawards.com)



**ARCHITECT**

# KALWALL®

high performance translucent building systems



photos: Mark Duffus



INDUSTRY LEADING THERMAL PERFORMANCE

PRODUCTIVE HEALTHIER ENVIRONMENTS

MUSEUM-QUALITY DAYLIGHTING™

SUSTAINABILITY+RESILIENCY

UNPARALLELED VALUE

MADE IN THE U.S.A.



**Emerging professionals** are fueling today's design conversation with high-energy solutions that challenge stated norms.

Hanley Wood congratulates and thanks Sherwin-Williams for its ongoing commitment to design innovation driven by architecture's next generation.



**SHERWIN-WILLIAMS**  
Coil Coatings

hanleywood

# Next Progressives: New Affiliates

EDITED BY KATHARINE KEANE

**Location:**

New York

**Year founded:**

2016

**Firm leadership:**

Ivi Diamantopoulou, INTL. ASSOC. AIA,  
Jaffer Kolb

**Education:**

*Diamantopoulou:* Dipl. Arch., University of Patras in Greece; M.Arch., Princeton University School of Architecture;  
*Kolb:* B.A., Wesleyan University; M.Arch., Princeton University School of Architecture

**Experience:**

Diller Scofidio + Renfro and MOS Architects, among others

**Firm size:**

Four, but it oscillates

**Origin of firm name:**

We wanted something dumb, open, and friendly. We didn't want to use our names to accommodate other collaborations.

**Mission:**

Loose forms, idiosyncratic ornament, irreverent reuse

**Favorite project:**

We have an art studio building in Brooklyn, N.Y., opening this summer. It was a circus of constraints, but alongside a willing and great client,

we ended up designing a building full of weird contradictions, juxtapositions, and affiliations all based on a desire for practicality and economy. It's like our formal sensibility hid itself in dozens of little moments that reveal themselves—and continue to—over time.

**Second favorite project:**

Our design for a Marc Camille Chaimowicz exhibition at the Jewish Museum in New York. This collaboration with a fantastic curator and a wonderful artist felt like a place where design and architecture could bring something to the table that was optimistic and meaningful. It was a great learning experience and showed us how work can be expressive and unsettling through tropes of familiarity and comfort.

**Modern-day design hero:**

Our hero of the week is the late Congolese artist Bodys Isek-Kingelez, who displayed an amazing combination

of humor, criticality, and graciousness that we find totally inspiring. His ideas for certain model towers are absurd and incisive, but he so earnestly described wanting to make them! It's a weird sensibility that's as sharp as it is silly; dreamy as it is earnest.

**Special item in your studio space:**

A prototype of Scabby, a small desk light modeled after the inflatable union protest rat. It's 5 inches tall, covered in a patchwork of possible finishes, and seems to move nomadically between our desks like a Victorian mummy.

**Favorite place to get inspired:**

A small park at Mercer and Bleecker streets in Manhattan where one can find us several times a week, pacing and having loud conversations.

**Design aggravation:**

We don't like things that are too self-serious, too effortful, or too fussy. But we also probably fall victim to all those things sometimes.

**Worst criticism you've ever received:**

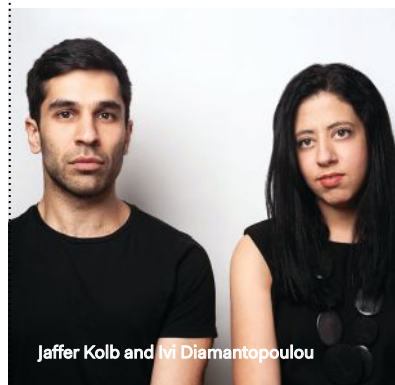
We always wish we received more criticism. We criticize ourselves a lot.

**Skills to master:**

Bookkeeping, hiring, making models

**When not working in architecture, I:**

*Diamantopoulou:* Read, look at things, hang out with people and a dog, or two.  
*Kolb:* Hallucinate, protest, write, repeat.





# FACING AN “IMPOSSIBLE” PROJECT? KEEP THIS ARKANSAS SCHOOL IN MIND

A severely-constrained lot was just the beginning of the challenges for this award-winning design



Call it the Miracle of Sublette Creek.

Beset with a gauntlet of potentially project-killing constraints, the project team at Marlon Blackwell Architects embraced northwest Arkansas' culture of resourcefulness to create an award-winning, brand-defining solution for the Fayetteville Montessori Elementary School.

The biggest hurdle principals Marlon Blackwell, FAIA, and Meryati (Ati) Johari Blackwell, AIA, LEED AP BD+D, and their project team led by Bradford Payne, Associate AIA, had to clear was the neighboring creek. The creek's floodplain extends over much of the land parcel. When Blackwell and his team prepared their plans, they quickly saw they had just a small triangle of usable building space. No one said designing the 7,940 square foot, \$1.4 million school was going to be easy. "We were almost ready to throw in the towel," admits Ati Blackwell.

## Cantilevered Classrooms

Once the architects embraced a triangular site plan, they were able to achieve an innovative solution

that met the floodplain constraints and owner requirements. A box of four rectangular classrooms partially cantilevers directly over the bordering floodplain, assisted by a supporting steel column. The unique box-over-triangle massing solved one problem only to point to another.

The cladding had to whisper, "... to fit quietly in the spot," says Payne. "We didn't want to highlight the unusual design with lots of colors," agrees Blackwell. The cladding choice and coating they specified proved to be a transformative decision for the school.

## Enduring Brand Identity

The Blackwell design team selected box rib metal wall panels from Metal Sales and cypress siding to create a subdued, sophisticated look that would appeal to achievement-minded parents. Today that combination of materials has become the school's signature look, with one new building and another one in the works bearing the same siding materials.

"Our first instinct was something dark," says Payne. "But what does dark mean? Dark gray? Graphite?

Black? We chose a dark bronze wall color and let the cypress add warmth and highlight to the structure." The unique profile of the 8,300 square foot exterior metal panel assembly presents a seamless, sophisticated wall surface that is unusual for elementary schools.

## High-Performance Solution

The dark bronze metal wall panels selected were coated with Sherwin-Williams Coil Coatings Fluoropon® coating. Fluoropon uses a premium fluoropolymer system containing 70 percent PVDF resins. Fluoropon coatings are field-proven for lasting durability, color resistance and meets rigorous industry standards. For the owner, it means little or no maintenance for many years. "We like the material and the coating. We've used it for three or four other projects," reports Blackwell.

"The owner has already talked about adding more buildings using the same materials. The public perception of the school is now more in line with the quality of education. The school formerly operated out of a converted home. That structure doesn't support the brand. Fayetteville Montessori is now voted each year as one of the area's best educational providers," Blackwell says.

## Peer Approval

The LEED Silver-certified project has worked out well for the Fayetteville-based architect, too. The project has earned wide professional acclaim, including the 2016 American Architecture Prize for Educational Buildings (Gold). "We're working on several out of state projects, including a brand new campus in Blytheville, Ark. and another new Montessori school in Jacksonville Beach, Fla.," says Payne.

Who says the toughest architectural assignments can't be overcome with a little design ingenuity?

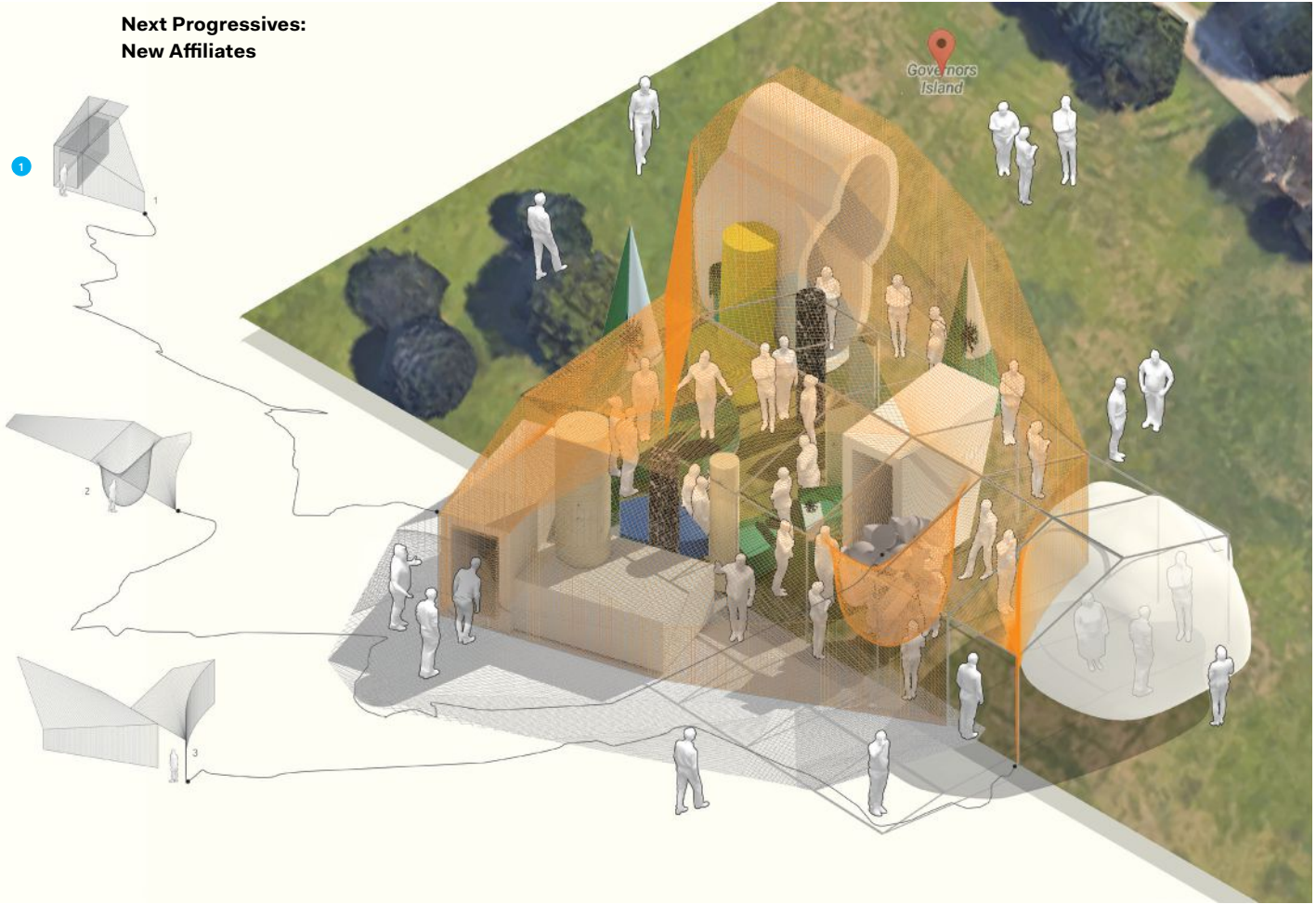
---

**Owner** Fayetteville Montessori  
**Architect** Marlon Blackwell Architects  
**Metal Panels** Metal Sales Manufacturing Corporation  
**General Contractor** Nabholz Construction Corporation  
**Coatings** Sherwin-Williams Coil Coatings  
**MEP** HP Engineering Inc.  
**Civil** Bates & Associates, Inc.  
**Structural** Myers-Beatty Engineering, PLLC  
**Photographer** Timothy Hursley

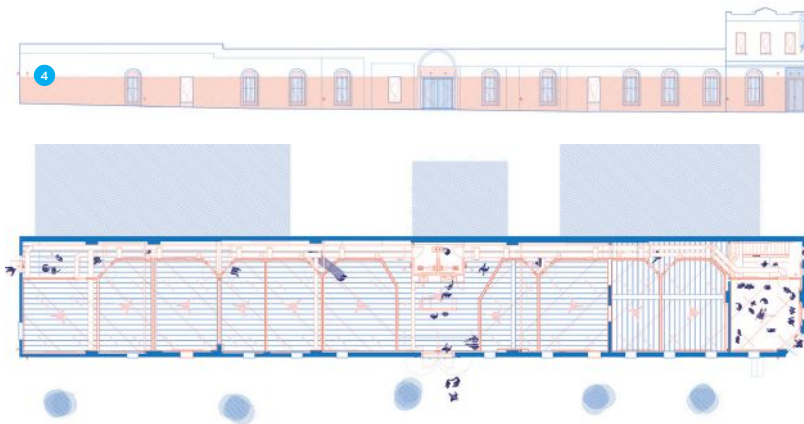


As one of the leading manufacturers of architectural metal coatings in the world, we bring a proud history of innovation to the coatings industry. With an enduring commitment to durability and an ever-expanding palette of color, Sherwin-Williams offers unlimited design freedom to countless industries, projects and locations.

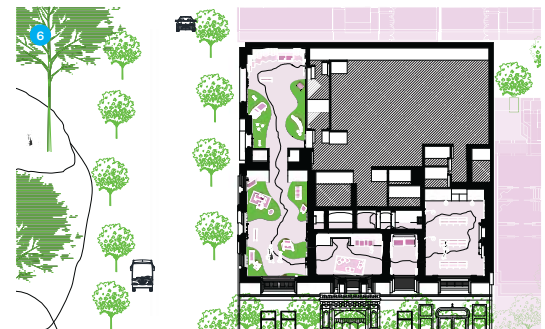
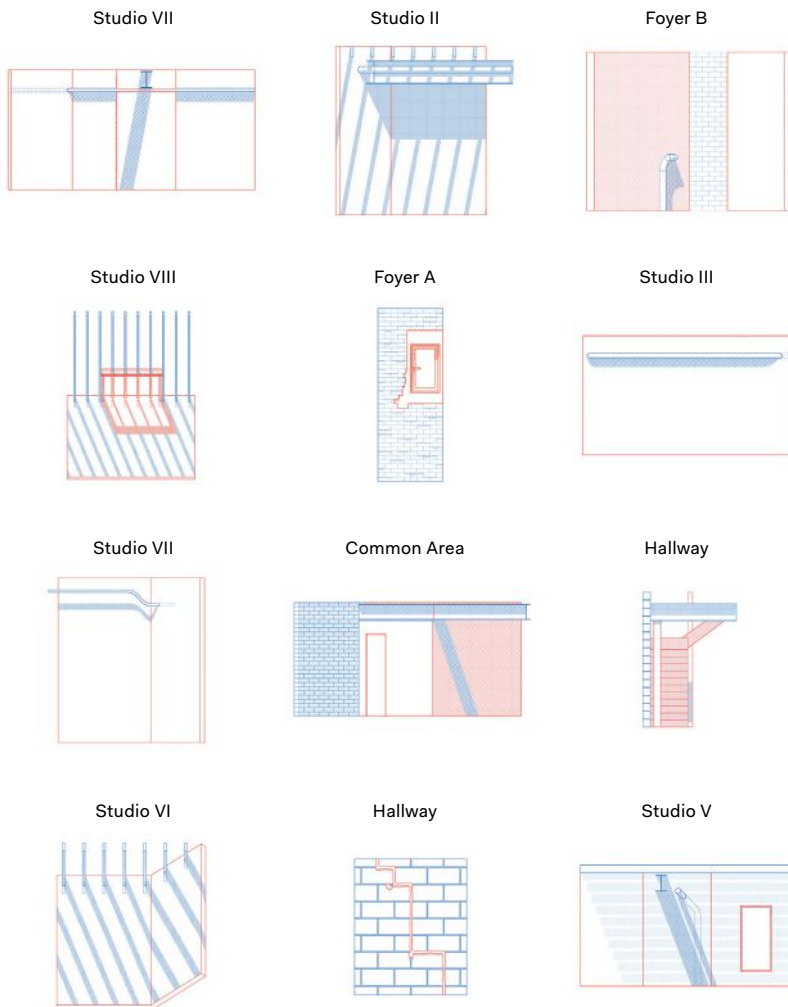
**Next Progressives:  
New Affiliates**







### 36 Apparent Negotiations between found conditions and additions



1. Welcome Tent was a proposal for a pavilion on Governors Island in New York Harbor. New Affiliates recycled components of other pavilions into a hybrid structure that sits under a construction-net envelope. 2. A reimagination of the garden gnome, this ornamental object is designed for indoor and outdoor spaces and is available in three silhouettes. 3. Conceived as an aggregation of local barn, house, and shed styles, this painting studio in Vermont's Green Mountains serves as a temporary getaway while the duo designs a larger house on the client's 65-acre property. 4. The firm developed a scheme to create 15 individual "white cube" galleries inside a derelict 7,200-square-foot former tea bag manufacturing factory in Brooklyn. 5. New Affiliates was commissioned to provide drawings for a 2018 exhibition exploring the intersection of science and architecture at the Canadian Centre for Architecture in Montreal. 6. The duo designed the "Marc Camille Chaimowicz: Your Place or Mine ..." exhibition at the Jewish Museum to feel like a "picturesque walk" through the gallery.

# OUR OBSESSION IS GROWING

## VALSPAR IS NOW SHERWIN-WILLIAMS.

One name. Double the obsession for innovation. Twice the relentless dedication to color customization, performance and expertise. Our combined portfolio offers the same architectural metal coatings you know and trust. High-quality, field-proven options including **Fluorpon**<sup>®</sup>, our flagship 70% PVDF product known for its time-tested reliability.

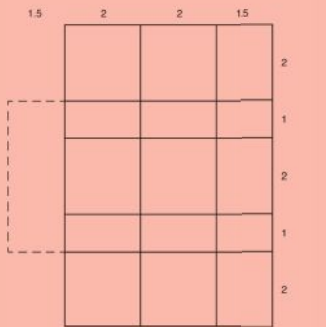
Put us together and see where color can take you. Order free color samples at [coil.sherwin.com/architect](https://coil.sherwin.com/architect)



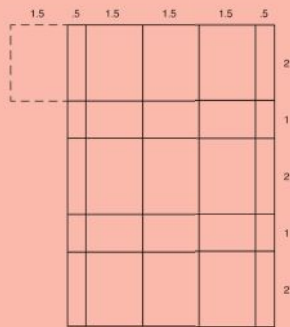
**SHERWIN-WILLIAMS.**  
Coil Coatings



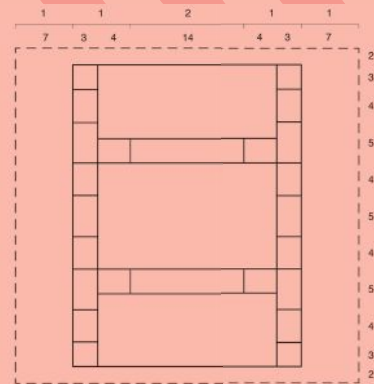
## 66<sup>th</sup> ANNUAL CALL FOR ENTRIES



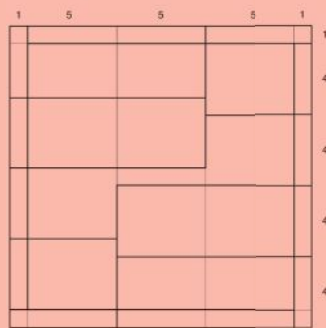
VILLA FOSCARI



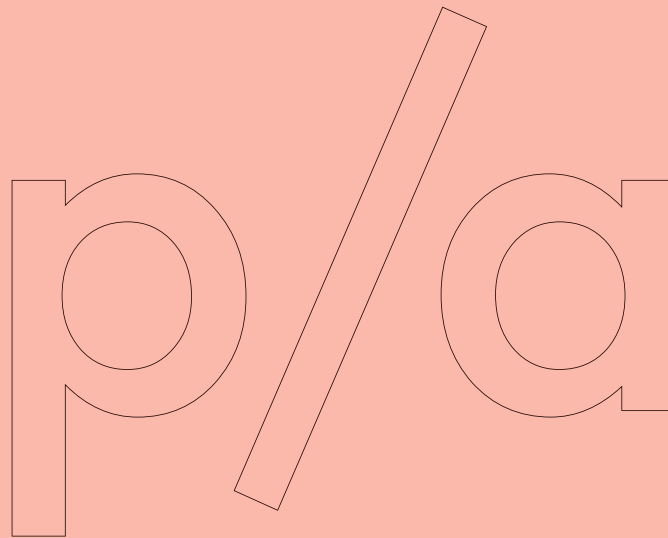
VILLA STEIN



UNGERS HOUSE



MOTHERHOUSE  
2017 P/A HONORABLE MENTION



# Progressive Architecture Awards

### ELIGIBILITY

Projects must have a client and a completion date after January 1, 2019. Judging will take place in November 2018. Winners will be notified in December 2018, published in the February 2019 issue of ARCHITECT, and honored at a ceremony in New York. For more information and rules and regulations, visit [paawards.com](http://paawards.com).

### RECOGNITION

Winners will be featured in the February, 2019 print issue of ARCHITECT with expanded coverage online at [architectmagazine.com](http://architectmagazine.com).

### HOW TO ENTER

SUBMIT YOUR WORK AT  
> [paawards.com](http://paawards.com)

### DEADLINES

REGULAR October 26, 2018  
LATE November 2, 2018

### FEES

SINGLE ENTRY \$195  
ADDITIONAL ENTRIES \$150  
LATE FEE \$50 (for entries submitted after Oct 26)

2017 WINNER MOTHERHOUSE BY INDEPENDENT ARCHITECTURE

# Products: How to Specify Acoustical Finishes

TEXT BY LINDSEY M. ROBERTS

When it comes to getting work done in an open plan office, the struggle is real. “[T]here’s a lot of challenges with the trends in workplace design, [such as] densification [and] collaborative spaces for spontaneous interactions,” says Adam Wells, senior associate at New York-based acoustics and technology consulting firm Cerami. “It can be challenging to get the acoustics right in these overly loud spaces.”

While concrete floors and floor-to-ceiling windows may convey a modern look, those hard surfaces also reflect sound right back to our ears. But soft materials, such as carpets and curtains, can help absorb the din by stopping those energy waves in their tracks. When architects select products specifically designed to mitigate sound, they can create environments that are more enjoyable—and more productive.

## Measuring Acoustics

The noise reduction coefficient (NRC) and sound transmission class (STC) are two common ways to measure the acoustics of a space. Kate Smith, a former materials librarian at SHoP Architects in New York, says that the NRC indicates the amount of sound an acoustical material absorbs and runs on a scale from zero to 1.0, while the STC rates the material’s soundproofing effectiveness at reducing noise in a room on a scale from zero to 100.

## Ceiling Finishes

In recent years, the market has seen a rich array of acoustical finishes for

overhead surfaces, Wells says. Standard are acoustical ceiling tiles, but innovative options exist. Ceilings Plus, for one, creates perforated ceiling panels that absorb sound even without an acoustical insulation backing.

For spaces with exposed ceilings, spray-on products, such as the cellulose insulation K-13, may be preferred. “You can get a large space done fairly quickly and economically,” says Jeanne Jameson, AIA, an interior designer at ZGF Architects in Portland, Ore. “We used it on a ceiling of a tech office ... and the [result] was impressive.” Cementitious spray, manufactured by companies such as Pyrok, is another option, as is fabric-wrapped fiberglass, says Felicia Doggett, president of Metropolitan Acoustics in Philadelphia. Decorative, suspended, or fixed acoustical cloud panels are other products to consider.

## Wall Finishes

Wallcoverings milled in various shapes with water-jet machines are now readily available and can become architectural features while achieving the maximum NRC. Jameson suggests Tri-Kes’ Acousticord, a ribbed wall carpet made with goat hair that feels like wool. Wall-mounted acoustical systems from FilzFelt and BuzziSpace can also serve as pinboards in classrooms and meeting rooms, though they might only attain a 0.5 NRC. Jameson also recommends Homasote’s interior panels for this purpose. And then there is cork, “a good example of a renewable material ... that

has some great acoustical properties,” Jameson notes.

## Beyond Finishes

To get everything sounding right, Jameson says, architects should bring up acoustic performance requirements from the beginning in client conversations, confirm that the contractor is on board, and seek the help of an acoustician to ensure the office is comfortable for its occupants. “Spaces should really sound as good as they look,” Wells says. “And that comes from getting the acoustics of the space right.”

BuzziMood by  
BuzziSpace







**PROJECT:** Orlando VA Medical Center  
**ARCHITECT:** RLF Architects  
**GLAZING CONTRACTOR:** Harmon Inc.  
**APPLICATION:** 1 and 2 hour fire resistive  
hurricane rated exterior curtain walls

# PROUDLY USA-MADE

Fire Resistive & Hurricane Rated Curtain Wall up to 2 Hours

## USA-Made Fire Rated Glass & Framing Since 1981

Being the *first and only* vertically-integrated, single-source fire rated glass and framing manufacturer in the USA allows us to offer *competitive pricing*, *fast lead times* and *superior coordination* during all phases of the project.

From fire rated windows and doors to custom-engineered, multi-functional fire resistive walls and floors, our in-house engineering, project management and technical sales teams offer unparalleled expertise and support to architects, glaziers and owners.

So for your next project, choose USA-made. Choose **SAFTI FIRST**.



www.safti.com  
888.653.3333

# Opinion: The Power of Micro-Choices

TEXT BY INGALILL WAHLROOS-RITTER, FAIA



Too often in studio juries and lectures I hear architects say that we don't have the agency to address "wicked" problems—that issues of equity, homelessness, economic inequality, and immigration are too complex to solve. I disagree.

We feel powerless in the face of decisions being made by politicians, corporate leaders, and supervisors. We *can*, however, combat that powerlessness, not through any singular hegemonic gesture, but through the accumulation of small acts that architects make: which materials to use, whom to hire, which projects to accept. These choices are not without risk, not always politically expedient, often contrary to traditional decision-making processes, and occasionally adversarial to the bottom line. Yet these micro-decisions have consequences that extend far beyond the boundaries of architecture.

For change to be meaningful, it must come from within our discipline. As architects, we have within our disciplinary methods the means to address the thorniest issues through our micro-actions. And therein lies much of our capacity for enabling change. How can we as architects craft a purposeful voice in the conversations—#MeToo, climate change, immigration, automation—confronting us now?

School is a place of empowerment—a sanctuary and a place for the open exchange of ideas. We can inculcate integrity and curiosity in students through instruction that blurs academic boundaries through problem-based projects that link to examples in practice, engaging partners and inviting solutions outside of the traditional studio. We can provide students with the sense that they can effect change; and then they do.

We can tackle economic inequity by undertaking projects that reach the underrepresented—civic engagement work for nonprofits and beautiful environments for resource-poor communities—despite minimal margins; and by working with agencies to help establish policies that provide healthy urban infrastructures.

We can fight climate change by implementing each of the cumulative approaches available to us in performance-based design.

In our workplaces, we can foster equity and inclusion by establishing and enforcing a policy of zero tolerance; by taking a cold, hard look at pay parity; and by implementing elastic office structure models, tailored to particular project demands matched to employee skill sets, talents, and caregiving circumstances.

It's time we recognize that the notion of "merit" is inherently biased. We can diversify our profession by establishing and implementing the many steps of a diversity plan. We can hire colleagues whose values and backgrounds are unlike our own, recognizing and

celebrating that different viewpoints lead to innovative solutions—and a critical questioning of the status quo.

We can open pathways into the profession by volunteering in K-12 programs, committing to philanthropic outreach, and funding diversity scholarships. We can sponsor a studio and offer internships to students, helping them accrue their AXP hours.

We can respond rapidly to changes in the profession by encouraging enrollment in boot camps and post-professional study in areas such as resilient design, virtual and augmented reality, and public interest design. We can rethink project delivery: If doctors can practice online, why can't architects?

At its best, architecture is an optimistic discipline. A well-designed project reflects a moment in time as well as a vision for the future.

At our best, we embrace integrity and curiosity in each of our decisions, through the classrooms we craft, the workplaces we establish, and the buildings we design. We have the power to change the world for the better through cumulative effect—student by student, lesson by lesson, building by building, practice by practice—thereby reclaiming our voices and rediscovering the joy of architecture. If each of these incremental steps is guided by our values, they will add up to a powerful whole.

*Ingall Wahlroos-Ritter, FAIA, is dean of Woodbury University School of Architecture, a majority minority institution.*



# 324 SPECIALISTS THAT PUT THE WELL-BEING OF THEIR PATIENTS ABOVE EVERYTHING

And a stainless steel piping installation that  
matches these high standards

It was clear right from the planning stage of the Science Center for Children's Oncology that no compromises were to be made regarding health and hygiene. That's why the choice was made to partner with Viega. Thanks to Viega system solutions, the piping systems, pre-wall systems and drainage technology work together perfectly and guarantee unmatched reliability and hygiene.  
**Viega. Connected in quality.**

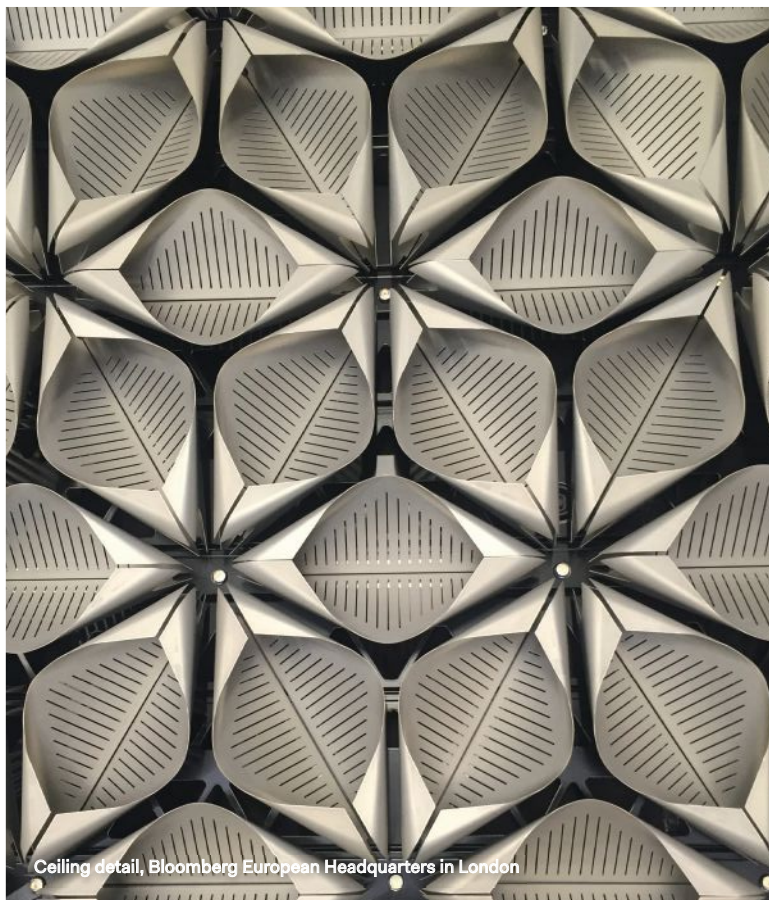
Children's Oncological Clinic, Moscow, Russia

The Viega logo consists of the word "viega" in a bold, lowercase, sans-serif font, colored yellow. It is positioned above a solid yellow horizontal bar. The entire logo is enclosed within a white rectangular border.

viega

# Architectural Lighting: Light & Architecture Design Awards

TEXT BY ELIZABETH DONOFF



Ceiling detail, Bloomberg European Headquarters in London

## JURY

**Andrew Bernheimer**, FAIA, principal, Bernheimer Architecture

**Ann Kale**, principal, Ann Kale Associates

**E. Sara McBarnette**, associate principal, Auerbach Glasgow

**Brian Orter**, principal, Brian Orter Lighting Design

Fifteen years ago, the ARCHITECTURAL LIGHTING Light & Architecture Design Awards was established with the express goal of promoting excellence in architectural lighting design and the work of the lighting design professional, no matter the project location, the professional's affiliation, or the luminaires specified. The program has grown amazingly in a relatively short time, and the lighting design community has embraced it as a benchmark of professional accomplishment.

This year, the program recognizes 10 projects from an international pool of 118 entries. With these latest additions, the AL Design Awards has now recognized 173 outstanding examples of architectural lighting design in total. As in the past, this year's award recipients represent the global diversity of architectural lighting design and lighting practice, as well as the deft artistic and technical hand of their designers. Their understanding of light and how it can create a sense of place and emotion while still meeting basic illumination needs is truly remarkable.

Over the past 15 years, lighting design has undergone a profound change as lighting and light source technology has shifted from analog to digital formats. Nonetheless, in all this time, the AL Light & Architecture Design Award-winning projects have remained true to the art of lighting design, reinforcing the critical role that lighting designers play in the overall development and success of a project.

COURTESY TILLOTSON DESIGN ASSOCIATES

> To read more about the winning projects and find full project credits, visit [bit.ly/ARALDA18](http://bit.ly/ARALDA18).

A·L





<b>BP mini</b>	<b>LED IMAGE PROJECTOR</b>	<b>120/277V</b>
	12" Length, 15 watts, 10,000+ CBCP	Beam Angles From 20° to 60°
	3 Plane Shutters	Glass or Metal "E" Size Gobo
<p>The BPM Series is a petite, architecturally designed LED image projector. At 12" in length, the BPM is a high performance instrument with 10,000+ CBCP at 15 watts. To learn more about the long list of professional grade features of the BPM Series, please visit our website.</p>		
<p><b>Lighting Services Inc</b> The premier specialty lighting manufacturer.</p>		



## 2018 AL Light & Architecture Design Awards



### Details

**Project:** Bloomberg European headquarters, London  
**Client:** Bloomberg  
**Architect:** Foster + Partners, London  
**Lighting Designer:** Tillotson Design Associates, New York  
**Project Size:** 1.1 million square feet  
**Manufacturers:** Bega, Erco, Flos, iGuzzini, LED Linear, Litelab, Lumenpulse, SAS, Selux, Stratas, We-ef (façade lighting), Zumtobel

### Category

Outstanding Achievement,  
Whole Building

### Jury Comments

*The office ceiling is spectacular. · I like the variety of lighting techniques.*

### Bloomberg European Headquarters

Global media company Bloomberg sought an office environment that excelled in its overall design, lighting, and sustainability measures. A bronze-clad stair doubles as a giant chandelier for the atrium, spiraling five levels up to the office floors. The signature feature of these upper levels is a custom ceiling that integrates cooling and acoustical technologies across more than 2 million formed-metal 3D petals incorporating more than 500,000 LEDs. The shimmering canvas provides continuity—and the required 300 lux on the work plane.



### Details

**Project:** George S. and Dolores Doré Eccles Theater, Salt Lake City  
**Client:** Salt Lake County Center for the Arts  
**Design Architect:** Pelli Clarke Pelli Architects, New Haven, Conn.  
**Architect of Record:** HKS Architects, Salt Lake City  
**Lighting Designer:** Cline Bettridge Bernstein Lighting Design, New York  
**Project Size:** 148,000 square feet  
**Manufacturers:** Bega, Erco, iLight, Moovi Lighting, RSA Lighting, Selux, Shaper Lighting, Tivoli, Tokistar, WAC Lighting

### Category

Commendable Achievement,  
Whole Building

### Jury Comments

*The designers have created a sense of magic in the theater. · The starry night ceiling is difficult to do and they've done it to perfection.*

### George S. and Dolores Doré Eccles Theater

This new theater takes its cues from the surrounding urban and natural landscapes. Its lighting design articulates the transition from street to lobby atrium to auditorium with clearly defined illumination zones. The 2,468-seat theater's night-sky ceiling was created using LED strings, two layers deep, stretched across frames. The LEDs are controlled randomly by nine separate dimming zones, allowing for cross-fading. This, along with the distance between LED strands and varying diode sizes, creates a sense of depth evocative of a clear, starry night.





## A COLORFUL PALETTE

The Mosaic Flood and Mosaic Profile feature high CRI output with **TUNABLE WHITE** from 1800K-8000K with a CRI of 90+ across the entire color temperature range. Rich blues, ambers, reds, violets, and greens can be added in gradients, or they can completely saturate the field being lit or displayed.

MANUFACTURING QUALITY  
LIGHTING PRODUCTS SINCE 1934

 [fb.com/tslight](https://www.facebook.com/tslight)

  
**Times SQUARE**  
LIGHTING  
[www.tslight.com](http://www.tslight.com)

## 2018 AL Light & Architecture Design Awards

### Category

Commendable Achievement,  
Exterior Lighting

### Jury Comments

*The lighting unifies the project and creates a bold urban statement. · The lighting helps convey a sense of movement.*



### Meixi Urban Helix

This public space allows visitors to enjoy panoramic views of Meixi Lake and Changsha, China's planned expansion. To create a nighttime identity for the 111.5-foot-tall Helix, the lighting designer concealed fixtures so that the architectural surfaces appear backlit. A hidden linear LED cove uplight illuminates the underside of the ramp, creating a continuous ribbon of light. RGBW LED luminaires distinguish the different ramp surfaces with a subtle color temperature variation, while an illuminated handrail provides additional light to facilitate navigation.

### Details

*Project:* Meixi Urban Helix, Changsha, China  
*Client:* City of Changsha  
*Architect:* KSP Jürgen Engel Architekten, Frankfurt, Germany  
*Lighting Designer:* Office for Visual Interaction, New York  
*Project Size:* 215,000 square feet (approx.)  
*Manufacturers:* Filix, Reggiani, SDCL, We-ef, XAL



### Sangha by Octave

To illuminate the vast scale of the Sangha resort (which aims to create a retreat-like experience away from Shanghai) and the diversity of its architecture and interiors (a dozen firms were involved), the lighting designer created a lighting master plan. Illumination is treated as a textural element, in the forms of dots, lines, and glowing surfaces. Situated among native grasses and trees, the chapel serves as the physical and spiritual center of the resort, featuring an illuminated glass curtainwall that creates the effect of a light box.

### Category

Commendable Achievement,  
Exterior Lighting

### Jury Comments

*The lighting helps tie the architecture and landscape together. · There's a lot of complexity happening behind the scenes to make the lighting appear so simple.*

### Details

*Project:* Sangha by Octave, Suzhou, China  
*Client:* Octave  
*Architect:* Tsao & McKown, New York  
*Lighting Designer:* Unolai Lighting Design & Associates, Shanghai  
*Interior Designer:* Neri & Hu Design and Research Office, Shanghai  
*Project Size:* 1 million square feet  
*Manufacturers:* Aldabra, Bega, iGuzzini, KKDC, Kreon, Luci, Osram



elliptipar<sup>®</sup>  
there is no equal<sup>™</sup>



[www.LightingQuotient.com](http://www.LightingQuotient.com)

THE LIGHTING **QUOTIENT**<sup>®</sup>   
elliptipar<sup>®</sup> tambient<sup>®</sup> lumenture<sup>®</sup>

*Congratulations to the 2018 AL Light & Architecture Awards  
winning designers, architects and manufacturers!*



## 2018 AL Light & Architecture Design Awards



### Details

*Project:* The Constellation, the Founder's Memorial, Abu Dhabi, United Arab Emirates (UAE)  
*Client:* Ministry of Presidential Affairs  
*Artist:* Ralph Helmick, Newton, Mass.  
*Lighting Designer:* dpa Lighting Consultants, Dubai, UAE  
*Project Size:* 63,195 square feet  
*Manufacturers:* Lumascape

### Category

Commendable Achievement,  
Exterior Lighting

### Jury Comments

*An amazing application of light. · Technically impressive the way the profile is revealed with the lighting.*

### The Constellation, the Founder's Memorial

The Constellation is the centerpiece of the Founder's Memorial, a tribute to the late Sheikh Zayed bin Sultan Al Nahyan, founding father of the United Arab Emirates. A series of mock-ups determined how the lighting could reveal the artwork from multiple viewing angles while retaining the nuanced depth of field of the sculpture, composed of more than 1,300 convex polyhedrons suspended from more than 1,000 tensioned cables. A 3D rendering of the Sheikh's profile is created from 753 downlights and 1,203 uplights, all custom-designed.



### Details

*Project:* Bike Square, Novartis campus, Basel, Switzerland  
*Client:* Withheld  
*Architect:* Marco Serra Architekt, Basel, Switzerland  
*Lighting Designer:* Licht Kunst Licht, Berlin and Bonn, Germany  
*Project Size:* 17,222 square feet  
*Manufacturers:* Bergmeister Leuchten, Erco, Flos Architectural, Trilux, Viabizzuno

### Category

Commendable Achievement,  
Interior Lighting

### Jury Comments

*The space feels open and welcoming even though it is underground. · The simple but bold form of the custom ceiling luminaires strikes the right balance for the space.*

### Bike Square, Novartis Campus

The design for this bicycles-only parking garage for Novartis employees features 16 luminous ceiling recesses, or "wheels," comprising a beveled, white, translucent acrylic perimeter shell divided into 12 segments. Inside the fixture cavity, an LED ribbon strip with a 120-degree light distribution provides uniform light dispersion across the 23-foot diameters. To further a sense of orientation and safety for this subterranean space, a daylighting sensing system ensures that a level of 150 lux is maintained.





# BRILLIANT.TOGETHER.

CPI Daylighting is now Kingspan Light + Air. Why? Because we believe the combination of our award-winning translucent daylighting products with the pioneering technology of Kingspan, the global leader in building envelope solutions, will be a driving force for innovation and performance.

We are excited to offer our **UniQuad**® unitized translucent wall panel system, designed specifically for high-performance building envelopes. This economical and comprehensive system is redefining the daylighting industry with its superior thermal performance, advanced spanning capabilities, and limitless design possibilities.

The future looks brilliant together.



Art for Art's Sake | STITCH Design Group | Winston-Salem, NC

kingspanlightandair.com | 847.816.1060  
cpidaylighting.com | 800.759.6985



## 2018 AL Light & Architecture Design Awards

### Category

Commendable Achievement,  
Interior Lighting

### Jury Comments

*There is an artful treatment of both the electric lighting and the daylighting. · The lighting design helps give the project a sense of scale.*



### Nvidia Campus

The building's polygon-based form created an efficient open floor plan, but the resulting triangular shapes and high ceiling heights, ranging from 12 feet to 36 feet, led to several lighting challenges. The lighting designers employed an uplighting strategy with an indirect luminaire suspended from the structural beams, providing a consistent layer of ambient light and mitigating the brightness and high contrast ratios from the abundance of natural light entering the space via 245 skylights; 4000K LED sources also help balance the light throughout.

### Details

*Project:* Nvidia campus, Santa Clara, Calif.  
*Client:* Devcon Construction  
*Architect:* Gensler, San Francisco  
*Lighting Designer:* HLB Lighting Design, San Francisco  
*Project Size:* 500,000 square feet  
*Manufacturers:* Acuity Brands Lighting/ Gotham and Lithonia brands, Amerlux, Axis, Bec Brittain, Bega, B-K Lighting, CL Sterling & Sons, Eaton/io LED, EcoSense, ETC, Finelite, Flos/Lukas, Focal Point, H.E. Williams, HK USA Lighting Group, Juno Lighting, Lambert & Fils, LED Linear, Lighting Services Inc, Lucifer Lighting, Luminii, MaxLite, Park Studio, Tech Lighting, Times Square Lighting, The Lighting Quotient/Elliptipar, Vibia, We-ef, Zumtobel



### Lumen at MoMA PS1

The winning scheme for MoMA PS1's 2017 Young Architects Program featured solar-activated and photoluminescent responsive textiles. To highlight the installation's day-to-night transformation, the lighting designer illuminated two large-scale canopies spanning the MoMA PS1 courtyard with 18 strategically placed RGBAW and ultraviolet LED fixtures. An eight-minute choreographed sequence played during the day while three 90-second scenes ran on a continuous loop starting at sundown, accenting the installation's architectural details.

### Category

Outstanding Achievement,  
Exhibition Lighting and  
Temporary Installations

### Jury Comments

*Wow. · Pushes the boundaries of what illumination can do.*

### Details


*Project:* Lumen at MoMA PS1, Long Island City, N.Y.  
*Client:* The Museum of Modern Art, MoMA PS1  
*Architect/Artist:* Jenny Sabin Studio, Ithaca, N.Y.  
*Lighting Designer:* Focus Lighting, New York  
*Project Size:* 10,000 square feet  
*Manufacturers:* Elation, Philips Color Kinetics



# OUT-OF-THIS-WORLD ENTRANCE



Like the exhibits at San Francisco's Exploratorium,  
Ellison balanced doors combine  
artistic beauty with scientific precision.  
That's why exploration of this museum  
starts with Ellison.

Custom designed. Precision hand-crafted.  
Near effortless operation. Unequaled longevity.  
Doors that will never be eclipsed. 

*Ellison*

CUSTOM CRAFTED BALANCED DOORS

[ellisonbronze.com](http://ellisonbronze.com)

— Made in the U.S.A. since 1914 —

Exploratorium: The Museum of Art, Science and Human Perception, San Francisco, CA

## 2018 AL Light & Architecture Design Awards

### Category

Commendable Achievement, Exhibition Lighting and Temporary Installations

### Jury Comments

*The technical complexity speaks to a completely new level of design integration.*



### London Mithraeum

On the deepest subterranean level of a three-story exhibition of the ancient ruins and artifacts discovered during the construction of the Bloomberg European headquarters, walls of structural light transport visitors to Roman times. The light is aimed horizontally onto a series of concealed mirrors and then interrupted by baffles to simulate portals. Finally, a “haze” created with a mixture of glycol, water, and theatrical fog gives the light beams a physical dimensionality—the first use of this technique in a permanent installation.

### Details

*Project:* London Mithraeum, London

*Client:* Bloomberg

*Exhibition Architect:* Studio Joseph, New York

*Lead Designer:* Local Projects, New York

*Lighting Designer:* Tillotson

Design Associates, New York, and Schreiber Studio, Brooklyn, N.Y.

(haze element)

*Architect of Record:* Foster + Partners, London

*Project Size:* 6,000 square feet

*Manufacturers:* Erco, iGuzzini, LED Linear, Stratas Zumtobel, We-ef

### Category

Commendable Achievement, Interior Lighting

### Jury Comments

*There is a subtlety to the project and the use of reflection without being overwhelming.*



### 777 Bay

To breathe new life into the public spaces of this mixed-use, mid-1970s complex, the project team developed a new design language using different glass elements. The lighting design accounted for the varying reflectivity of the wood-and-glass material palette, employing several techniques, including backlit panels, frosted mirrors, and cove-lighting. The renovation established a clear navigational sequence with a main entrance, retail spine, and elevator core in the central atrium. The resulting series of open and airy spaces feels luminous all day.

### Details

*Project:* 777 Bay, Toronto

*Client:* Canderel

*Architect:* WZMH Architects, Toronto

*Lighting Designer:* Mulvey & Banani International, Toronto

*Project Size:* 25,000 square feet

*Manufacturers:* Acuity Brands

Lighting/Gotham; Acuity Brands

Lighting/Lithonia, Acuity Brands

Lighting/Mark Architectural

Lighting, ETC, Eureka Lighting,

Forms+Surfaces, iGuzzini, LED

Linear, Litelab, Lumenpulse,

Viabizzuno





SageGlass®

# IT'S COMING TOGETHER SMOOTHLY

Heat and Glare Management  
with an Outdoor Connection like never experienced before.

## OCTOBER 2018

[sageglass.com/seamless](http://sageglass.com/seamless)



SAINT-GOBAIN

# Residential: LevenBetts

TEXT BY EDWARD KEEGAN, AIA

About a 100 miles north of New York City, a new house sits in a 2-acre clearing in a farming valley between the Catskills and the Berkshires in Columbia County, N.Y. The region has a rich artistic history that began with the 19th century's Hudson River School painters. "Recently there's been a vibrant cultural boom with the town of Hudson as the locus," says David Leven, FAIA, who designed the house with partner Stella Betts, ASSOC. AIA, for themselves.

The couple, who together lead New York City-based architecture firm LevenBetts, used to camp on the site now occupied by their 1,350-square-foot Open House, which is designed to explore similar ideas of domestic occupation. "There's no preset idea of living outdoors," Betts says of their inspiration.

The house's exterior exudes permeability, with floor-to-ceiling operable glass doors throughout. "We didn't think of space as the program, but the views are the program," Betts says. The five rooms on the ground floor (four interior and one open-air) are trapezoids, flipped in orientation along a north-to-south axis. The southernmost space is not enclosed, and functions as an outdoor porch and primary entrance. The other spaces work interchangeably—"like a campsite, they might be set up differently at different times of year," she says.

"What's the minimal way of defining space?" Betts poses. She explains that she and Leven were inspired by the seminal Eames film *Powers of Ten* (1977),



Two volumes create the house's simple form, seen from the northwest.

## Project Credits

*Project:* Open House, Hudson, N.Y.

*Client:* David Leven, FAIA, and Stella Betts, ASSOC. AIA

*Architect/Interior Designer/Construction Manager/Landscape Architect/Lighting*

*Designer:* LevenBetts, New York City · David Leven, FAIA, Stella Betts, ASSOC. AIA (partners)

*Mechanical Engineer:* Smart NRG

*Structural Engineer:* Guy Nordenson Associates

*Geotechnical Engineer:* Keyser Drilling Co.

*General Contractor:* Javier Gomez

*Size:* 1,350 square feet

*Cost:* Withheld

> See more images of Open House at [bit.ly/LevenBettsOpenHouse](http://bit.ly/LevenBettsOpenHouse).



FORMULATED FOR THE:

SHORT-TIMELINE,  
HIGH-EXPECTATIONS,  
ONLY-THE-BEST-  
WILL-DO-  
SPECIFICATION.



*Pro Industrial™ High Performance coatings can handle your demanding specs. Designed for busy commercial and institutional environments, Pro Industrial provides outstanding aesthetics, exceptional durability and value. [swproindustrial.com](http://swproindustrial.com)*

## Residential: LevenBetts

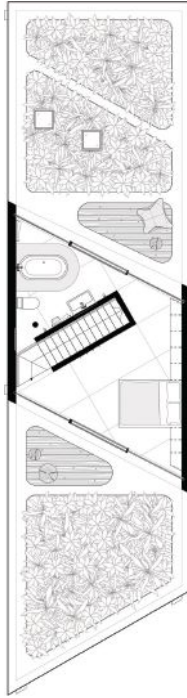
which zooms into and out from a couple occupying a blanket on Chicago's lakefront. "The blanket is the most reductive domestic space," Betts says.

Outside the house, exterior living spaces are geometrically defined as circles and linked via linear paths that create a triangle that intersects with the house. "They are very specific spaces—kitchen, dining, firepit, living room, and well," Leven says. These spaces reprise some of the functions that were necessary when the site was just a camping spot, and the irony is not lost on Leven and Betts that their uses are more stringently maintained than similar spaces within the house.

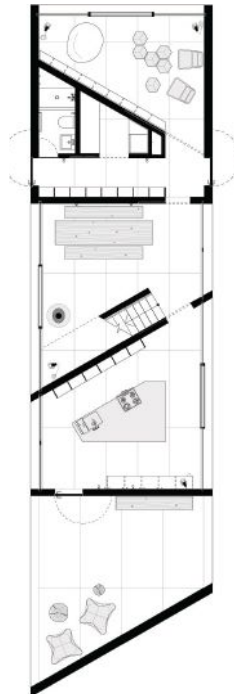
Everything about the house is intentionally minimal, including the furnishings, which are limited to several benches, a table, and a couple of chairs. The kitchen pantry has open shelves that are identical to bookcases in another space. The exterior is clad in stucco and cement board; inside, Baltic birch plywood lines the floors, walls, and ceilings. The cement board is reprised inside for the kitchen island, the single most functionally specific item within. "It's as basic as can be," Betts says.

The stair leading to the second floor is equally simple, made of the same plywood as the interior enclosure; its triangular volume echoes the spatial arrangement of the plan. The second story, smaller than the first, contains the master bedroom and bathroom framed by a green roof on two sides.

Second-Floor Plan



Ground-Floor Plan



The first floor is a concrete deck on grade beams, which raises the volume subtly above the landscape, with conventional wood framing above. The spans are about 17 feet, with a bit larger glass wall openings running along each façade, at 18.5 feet.

The couple never camped in the winter, so building the house has allowed them to use the property as a four-season getaway. But they have noticed how their use of the spaces changes across the seasons; the central space with its wood stove is the most-used living space during the coldest months, while the exterior porch is favored during the summer.

For much of the year, the simple plan of spaces with operable glass on opposing sides of each room lends itself to natural cross-ventilation. The house also employs a water source heat pump with geothermal heating and cooling, pulling 55 F water from ground.

Open House is an essay in strict geometry that riffs on ideas of inside and out, while positing that ideas of "camping" can inform a less transient way of occupying the landscape.







The grand opening  
of moment resistance.



MPBZ44

MPBZ66

MPBZ88

Expand your options for designing open outdoor structures with the new, patent-pending MPBZ moment post base—now available in 4x, 6x and 8x sizes. This innovative connector provides optimal strength at the base of columns and posts to resist lateral loads at the top—reducing the need for knee bracing.

Learn more about the Simpson Strong-Tie® MPBZ by visiting [go.strongtie.com/mpbz](http://go.strongtie.com/mpbz) or calling (800) 999-5099.

**SIMPSON**  
**Strong-Tie**

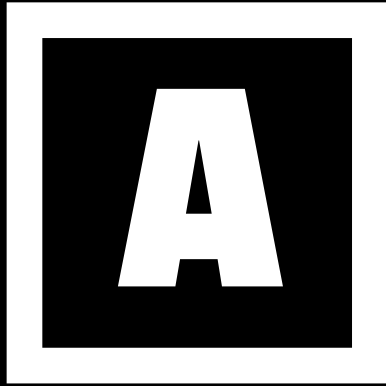


**Residential:  
LevenBetts**

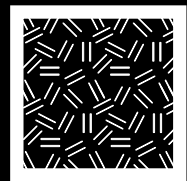
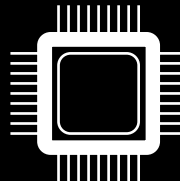
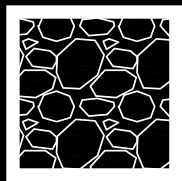
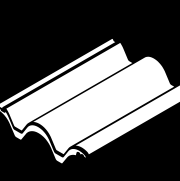
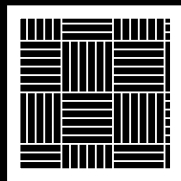
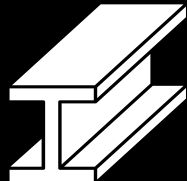
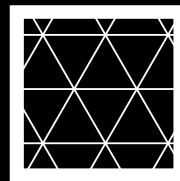
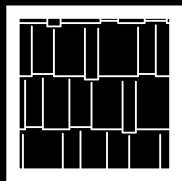
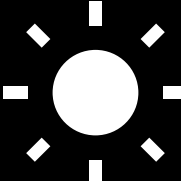
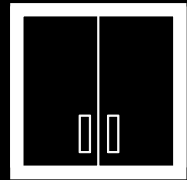
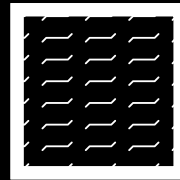
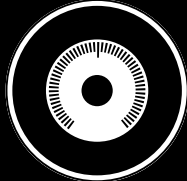
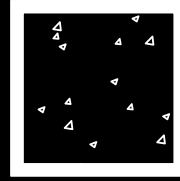
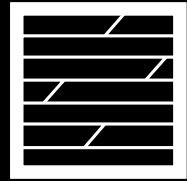
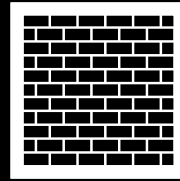
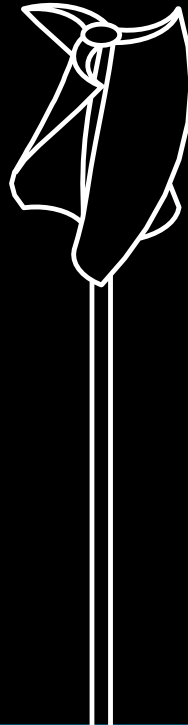
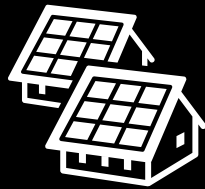
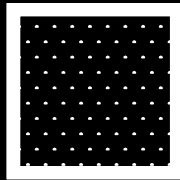
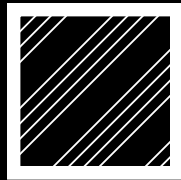


**1.** The ground-floor kitchen features a Smeg cooktop and oven set in a cement-board island. **2.** The second story contains a master suite and roof deck. **3.** The interior porch on the ground floor looks over one of the outdoor living spaces created with local crushed stone. **4.** The architects designed much of the furniture in the minimalist house, including the dining table in the center of the ground floor.





# Fall 2018 Call for Products



## OVERVIEW

Showcasing a new product at the Greenbuild International Conference and Expo in Chicago this November? Submit it for consideration in the November print issue of ARCHITECT and on [architectmagazine.com](http://architectmagazine.com). Submissions will also be considered for potential coverage by all of Hanley Wood's brands.

## RECOGNITION

We welcome submissions from manufacturers worldwide, though the products must be commercially available in the United States and released after October 2017 to qualify for editorial consideration. ARCHITECT will not publish products that it has already covered.

## HOW TO ENTER

**SUBMIT YOUR PRODUCTS AT**  
> [architectproductcall.com](http://architectproductcall.com)

## DEADLINE

Wednesday, Sept. 26, 2018  
The deadline will not be extended.

## PROCESSING FEE

**UP TO 5 PRODUCTS** \$99 FLAT  
**MORE THAN 5** \$19 each

# THE EVOLUTION OF CONTINUOUS INSULATION

Presented by:



The Mission My Care Plus Building in Asheville, N.C.

By Herbert Slone, R.A.

## CONTINUOUS INSULATION

During the past 20 years, the building sector has seen a significant shift around the use of continuous insulation (CI). Evolving from what was once a rare practice or perceived as an advanced greenbuilding, high-efficiency option, CI is now a standard method and materials practice across most climatic regions.

So what is continuous insulation? What has been the driver behind its rise? What performance benefits has its use provided? What changes in codes and standards have resulted? What material solutions are currently used? These questions are addressed in this course.

## THE DEFINITION OF CI

Think of CI as a “building blanket,” wrapping the building in a layer of insulation to improve envelope/enclosure performance. It is defined in ASHRAE Standard 90.1-2013 as:

*“Insulation that is uncompressed and continuous across all structural members without thermal bridges other than fasteners and service openings. It is installed on the interior, exterior, or is integral to any opaque surface of the building envelope.”*

In building enclosures, the structural wall layer, often steel stud, CMU, concrete or wood stud, has elements that by structural or mechanical necessity extend through the traditional

## LEARNING OBJECTIVES

Upon completion of this course the student will be able to:

1. Identify continuous insulation and anticipated optimized building performance resulting from its integration.
2. Recognize codes and standards such as the International Building Code (IBC), International Energy Conservation Code (IECC) and ASHRAE 90.1 requiring CI and prescriptive R-values.
3. Identify NFPA 285 requirements associated with selected CI, cladding and wall assemblies.
4. Select commonly used continuous insulation products based on material properties such as thermal performance, fire resistance, UV resistance and moisture resistance.

## CONTINUING EDUCATION

AIA CREDIT: 1 AIA LU/HSW  
AIA COURSE NUMBER: AR072017-3



Use the learning objectives above to focus your study as you read this article. To earn credit and obtain a certificate of completion, visit <http://go.hw.net/AR072017-3> and complete the quiz for free as you read this article. If you are new to Hanley Wood University, create a free learner account; returning users log in as usual.

insulation layer of the wall system. Components including steel columns/beams, steel or wood studs, solid concrete or hollow core concrete masonry units (CMU) all have high conductivity elements that extend from inside to outside.

These high conductivity components penetrate through cavities and/or cores where the traditional insulation layers in the wall are located, creating thermal short circuits that may reduce the thermal effectiveness by as much as 50 percent.

If buildings are thought of as “buckets,” then these thermal short circuits are essentially “holes in the energy bucket” and can place additional demand on HVAC systems, wasting energy and



costing money. These thermal short circuits can also contribute to long-term moisture accumulation, condensation, wall system deterioration and reduce thermal comfort.

Using a layer of CI to “wrap” the building enclosure in a “blanket,” covers the “holes” (the short circuits), maximizing wall system performance, minimizing energy cost and reducing the likelihood of deterioration. Also, CI, extruded polystyrene (XPS) in particular, is sometimes used as the air barrier layer as well as the CI layer. XPS with tape sealed joints and penetrations has been demonstrated to perform as a code compliant air barrier layer in accordance with ASTM E2357 testing.

**THE EVOLUTION OF PRESCRIPTIVE R-VALUES FOR CI**

Energy standards are a main driver behind the evolution of CI in building walls from “non-existent” to more mainstream “common practice.” See **Tables 1 and 2** that summarize the prescriptive R-value recommendations for CI for steel framed and mass walls (such as concrete masonry, CMU) from ASHRAE Standard 90.1 and the International Energy Code (IECC).

In the steel framed table, **Table 1**, the first value is the prescriptive recommended R-value for cavity insulation in the stud cavity. The second value is the prescriptive R-value recommendation for CI. The mass wall table, **Table 2**, has only one value which is the prescriptive R-value recommendation for CI.

**WHAT IS THE DRIVER FOR THE RISE OF CI?**

The first version of what was to become ASHRAE 90.1 was published in 1975. Since then it has been updated many times due to rapid changes in building technology and energy prices. **Tables 1 and 2** chart the increase in prescriptive R-value recommendations across several editions of energy design standards.

ASHRAE 90.1 first introduced a prescriptive recommendation for CI in 1999. The immediately preceding edition in 1989 had no specific reference regarding the use of CI. Beginning in 1999, the prescriptive recommendation for CI has moved further south, eventually reaching all the way to Climate Zone 1, while CI R-value recommendations for the other zones have steadily risen.

**TABLE 1 Prescriptive R (minimum) Requirements for Steel Framed Walls, Above Grade**

ZONE	ASHRAE 90.1 - 1999*		ASHRAE 90.1 - 2004		ASHRAE 90.1 2007 & 2010		ASHRAE 90.1 2013 & 2016		IECC 2012 & 2015	
	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential
1	13	13	13	13	13	13	13	13	13 + 5.0	13 + 5.0
2	13	13	13	13	13	13 + 7.5	13 + 3.8	13 + 7.5	13 + 5.0	13 + 7.5
3	13	13 + 3.8	13	13 + 3.8	13 + 3.8	13 + 7.5	13 + 5.0	13 + 7.5	13 + 7.5	13 + 7.5
4	13	13 + 3.8	13	13 + 7.5	13 + 7.5	13 + 7.5	13 + 7.5	13 + 7.5	13 + 7.5	13 + 7.5
5	13 + 3.8	13 + 7.5	13 + 3.8	13 + 7.5	13 + 7.5	13 + 7.5	13 + 10.0	13 + 10.0	13 + 7.5	13 + 7.5
6	13 + 3.8	13 + 7.5	13 + 3.8	13 + 7.5	13 + 7.5	13 + 7.5	13 + 12.5	13 + 12.5	13 + 7.5	13 + 7.5
7	13 + 7.5	13 + 7.5	13 + 7.5	13 + 7.5	13 + 7.5	13 + 15.6	13 + 12.5	13 + 15.6	13 + 7.5	13 + 15.6
8	13 + 7.5	13 + 180	13 + 7.5	13 + 10.0	13 + 7.5	13 + 18.8	13 + 18.8	13 + 18.8	13 + 7.5	13 + 17.5

ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings. American Society of Heating, Refrigerating, and Air-Conditioning Engineers,

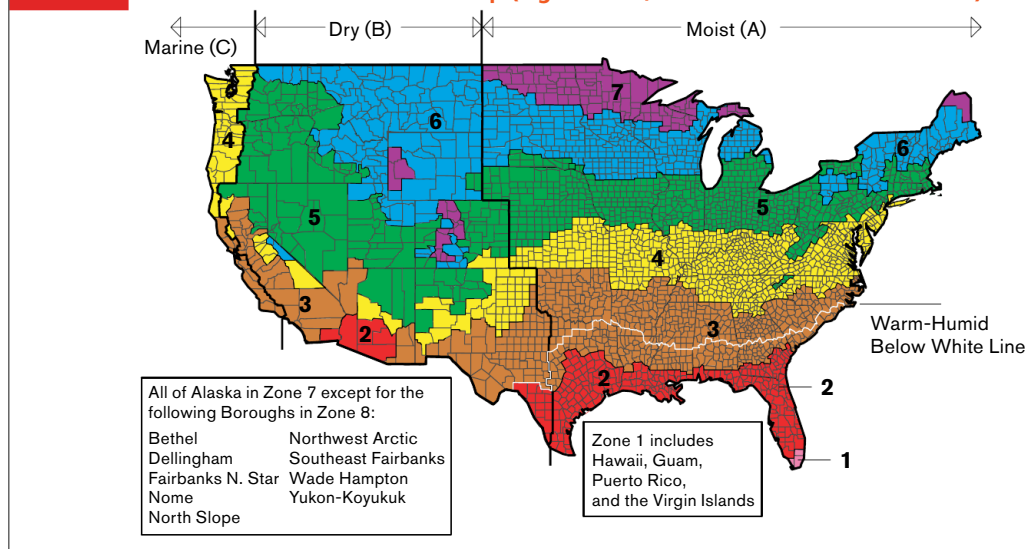
\* Prescriptive R requirements are approximate for illustration purposes only. ASHRAE 90.1-1999 had 26 climate zones. In 2004 and thereafter the number of zones were reduced to 8. Since there is not a direct conversion from 1999 to 2004, the 1999 columns are an approximation based roughly on the boundaries as defined by CDD50 and HDD65 for each region.

**TABLE 2 Prescriptive R (minimum) Requirements for Mass Walls, Above Grade**

ZONE	ASHRAE 90.1 - 1999*		ASHRAE 90.1 - 2004		ASHRAE 90.1 2007 & 2010		ASHRAE 90.1 2013 & 2016		IECC 2012 & 2015	
	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential
1	NR	5.7	NR	5.7	NR	5.7	NR	5.7	5.7	5.7
2	NR	5.7	NR	5.7	5.7	7.6	5.7	7.6	5.7	7.6
3	5.7	7.6	5.7	7.6	7.6	9.5	7.6	9.5	7.6	9.5
4	5.7	9.5	5.7	9.5	9.5	11.4	9.5	11.4	9.5	11.4
5	7.6	11.4	7.6	11.4	11.4	13.3	11.4	13.3	11.4	13.3
6	9.5	11.4	9.5	11.4	13.3	15.2	13.3	15.2	13.3	15.2
7	11.4	15.2	11.4	13.3	15.2	15.2	15.2	15.2	15.2	15.2
8	15.2	15.2	13.3	15.2	15.2	25	19	19	25	25

\* Prescriptive R requirements are approximate for illustration purposes only. ASHRAE 90.1-1999 had 26 climate zones. In 2004 and thereafter the number of zones were reduced to 8. Since there is not a direct conversion from 1999 to 2004, the 1999 columns are an approximation based roughly on the boundaries as defined by CDD50 and HDD65 for each region.

**FIGURE 1 United States Climate Zone Map (Figure B1-1, ASHRAE Standard 90.1-2013)**



**DRIVERS FOR CI PRESCRIPTIVE R-VALUES: THE 2030 CHALLENGE**

The evolution of CI in building walls from “non-existent” to “common practice” is the outcome of both common sense economics and attempts to reduce the impact of energy

consumed by buildings on global climate change.

At the time that ASHRAE Standard 90.1-1999 was published there was little discussion about the relationship of buildings to the climate

issue. In the early 2000's, in a prominent national discussion lead by the influential environmental architect Edward Mazria, it was identified that buildings were responsible for about 50 percent of all the energy consumption and CO<sub>2</sub> emitted in the United States.

In response Mazria conceived and introduced the "2030 Challenge," an initiative that proposed that the architecture and construction communities adopt a series of greenhouse gas reduction targets for new and renovated buildings.

**The targets set by the 2030 Challenge were:**

- All new buildings, developments and major renovations shall be designed to meet a fossil fuel, greenhouse gas (GHG) emitting, energy consumption performance standard of 50 percent of the regional (or country) average for that building type.
- At a minimum, an amount of existing building area equal to that of new construction shall be renovated annually to meet a fossil fuel GHG emitting, energy consumption performance standard of 50 percent of the regional (or country) average for that building type.
- The fossil fuel reduction standard for all new buildings shall be increased to:
  - 60 percent in 2010
  - 70 percent in 2015
  - 80 percent in 2020
  - 90 percent in 2025

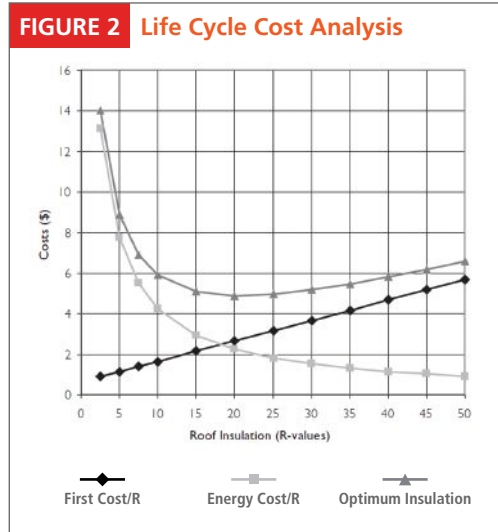
And, be carbon neutral by 2030 (meaning zero fossil fuel and GHG emitting energy is needed to operate).

Shortly after the concept was introduced it was adopted by the American Institute of Architects, and others, including state and local governments. The U.S. Conference of Mayors soon followed. In April 2007 the ASHRAE Board of Directors adopted the challenge and soon signed a memorandum of understanding (MOU) with the U.S. Department of Energy (DOE) to establish the following energy reduction targets for subsequent editions of ASHRAE Standard 90.1:

- 90.1-2010, targeted 30 percent reduction in energy cost relative to the 2004 standard.
- 90.1-2013, targeted 50 percent reduction in energy cost relative to the 2004 standard.

Of course there were many building components and mechanical systems that

ultimately contributed to the overall energy reduction goals, but CI played a role as illustrated by the increasing R-values for CI in **Tables 1 and 2** during this time period.



**OPTIMUM INSULATION**

The other important driver for CI becoming more mainstream as a building practice was economics and the concept of "optimum insulation." Although it requires an initial increased investment during construction, insulation creates reduced energy costs for the life of the building. The questions then become, "How much insulation is enough?" and "What is the optimum amount of insulation?"

"Optimum insulation" is the amount of insulation that has the lowest life cycle cost (LCC). LCC is expressed as:

$$LCC = FC + M + R + E - RV$$

- LCC = Life Cycle Cost (\$)
- FC = First Cost (\$)
- M = Maintenance and repair cost (\$)
- R = Replacement Cost (\$)
- E = Energy Cost (\$)
- RV = Resale value or salvage (\$)

The concept of determining the lowest life cycle cost (LCC) is illustrated in **Figure 1**.

In addition to adhering to the public policy principles of the 2030 Challenge and the MOU with DOE, the ASHRAE 90.1 standard committee also justifies insulation levels using sound economic principles. **Figure 1** illustrates the concept showing first cost for insulation/

construction increasing as R-value increases. The principle is obvious; as one installs more insulation, the first cost of insulation increases. Equally obvious, it captures energy cost and consumption decreasing as R-value increases. The LCC is the lowest sum of "first cost" and "energy cost" at a given level of R-value. In this hypothetical example, R-20 is the lowest LCC, and is therefore the "optimum insulation" level. **Figure 1** only demonstrates the concept of "optimum insulation."

Actual optimum levels must be calculated for specific climates, specific building construction types, specific building usage patterns and specific economic assumptions regarding construction and energy costs. The concept of Life Cycle Cost Analysis and Optimum Insulation are utilized by ASHRAE in the development of Standard 90.1. However, 90.1 is a minimum standard that sometimes lags behind the upward trend of energy and construction costs, particularly when a building built today will have a useful life several decades into the future. Therefore, the path to raising awareness and increasing energy standards to include the use of CI was aligned with economic and public policy through the early 2000's.

**PERFORMANCE BENEFITS RESULTING FROM THE USE OF CI**

The location of continuous insulation is determined by the type of construction, climate zone, building function and ease of construction. CI may be integrated as part of many common wall designs including steel framed and masonry cavity walls, rainscreens and rain barriers, pre-cast and tilt-up concrete panels. It can also be incorporated behind many types of cladding including architectural metal, masonry, stucco and EIFS. Generally, it is easiest to construct continuous insulation on the outboard side of the wall framing to minimize complex detailing around floor lines, exterior penetrations and openings.

When located on the outboard side of the wall, CI achieves two things: 1) it keeps the wall framing warmer, meaning it is closer to the building's interior temperature, and 2) the added CI R-value shifts the dew point, to the point that it often is located outside of the framing cavity insulation. Minimizing condensation inside walls reduces the likelihood of moisture accumulation which decreases the possibility of structural corrosion and decay and the opportunity for mold and mildew to develop.





A building with cavity insulation, but no C.I.



A building with cavity insulation, and C.I.

Unfortunately, structural components (concrete masonry units, steel studs, wood studs and concrete) are better conductors than insulators. This results in thermal bridging or thermal short circuits where structural (and other) components penetrate through the wall to the exterior.

Prior to the widespread adoption of CI conventional construction practices, insulation was commonly installed between studs, in the stud cavity and in an exterior wall. Thermal imaging was performed on the two buildings above; both have cavity insulation but only the lower photo has continuous insulation. The building without continuous insulation showed increased heat flow where uninsulated steel stud framing met the exterior sheathing and other uninsulated details along the roof line, while the building with continuous insulation over its steel framing showed greatly reduced thermal bridging in the wall system.

Thermal bridging reduces the effective R-value of the wall assembly by a percentage of area where stud framing is not separated from the exterior by CI. When CI is provided over the stud framing the effective R-value of the wall is improved.



This article continues on  
<http://go.hw.net/AR072017-3>. Go online to  
 read the rest of the article and complete  
 the corresponding quiz for credit.

## QUIZ

- The 2030 Challenge, adopted by the AIA, recommends fossil fuel reduction for all new buildings to be increased to \_\_\_\_ by the year 2030.
  - 10 percent
  - 50 percent
  - 75 percent
  - Carbon Neutral
- \_\_\_\_ is the amount of insulation that has the lowest LCC.
  - High R-Value Insulation
  - Low R-Value Insulation
  - Optimum Insulation
  - Mineral Wool Insulation
- True or False: Under the most recent IECC, buildings in warm climates such as Climate Zone 1 are never required to have CI.
- NFPA 285:
  - Gives an exterior wall a designated hourly rating.
  - Is a fire test standard that measures the likelihood that a wall system containing combustible components may be ignited by the fire plume emitting from a window opening, and then propagate the fire away from the point of origin either on the surface of the wall or through its core and cavities.
  - Is a window assembly test provided by the window manufacturer.
  - Was not referenced in IBC prior to 2015.
- True or False: Mineral wool insulation is highly combustible and not UV-resistant.
- When selecting continuous insulation, the designer should consider:
  - Anticipated moisture and drainage
  - UV exposure
  - Cladding
  - Fire protection
  - All of the above
- True or False: At lower temperatures such as 40 degrees Fahrenheit, the average R-value of Iso may be reduced from R-6 to R-2.
- True or False: XPS is a closed-cell, hydrophobic product which makes it highly water resistant.
- Continuous insulation may reduce:
  - Energy consumption
  - Moisture accumulation
  - Growth of mold and mildew
  - All of the above
- Highly thermally conductive structural components include:
  - Steel Studs
  - Solid Concrete Masonry Units (CMU)
  - Concrete Beams
  - Wood Studs
  - All of the above

## SPONSOR INFORMATION



Owens Corning develops, manufactures and markets insulation, roofing, and fiberglass composites. Global in scope and human in scale, the company's market-leading businesses use their deep expertise in materials, manufacturing and building science to develop products and systems that save energy and improve comfort in commercial and residential buildings.

### About the Author

Herbert Slone is Chief Architect and Senior Manager of Commercial Building Systems for Owens Corning. He has over 46 years of experience in construction.

# Life safety should never be optional.

**When you specify halogen-free Formawall® insulated metal panels, you enhance life safety.**

That's because Formawall's new Red List-free foam insulation provides superior fire resistance, proven through CENTRIA's most extensive and rigorous third-party fire testing ever conducted. Plus, Formawall is FM 4882 certified at the highest level for smoke-sensitive environments. Best of all, this victory for life safety comes standard – as it should.

Learn more at [CENTRIA.com/reformulate](https://www.centria.com/reformulate)



**FORMAWALL®**  
High Performance Building Envelope System



# ARCHITECTURAL MASONRY CONSIDER THE POSSIBILITIES

## REFLECTIVE SERIES

*YOUR UNIT MASONRY  
ALTERNATIVE TO  
MARBLE OR GRANITE!*

### **ALSO AVAILABLE IN E. DILLON'S ARCHITECTURAL LINE....**

Our Polished, Ground, Split & Matte Series are manufactured with the same high quality standards and materials as our "top of the line" Reflective Series. One of our options is sure to fit the budget on your next project.

To see the quality and economical value of our options request a sample board by calling (800) 234-8970 or visit [edillon.com](http://edillon.com)



AN AMERICAN OWNED COMPANY SINCE 1868

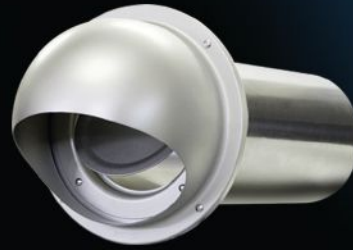




# Dryer Vents



Model: **SB-P**  
4" & 6" Aluminum



Model: **SFB-P**  
4" & 6" Aluminum



Model  
**SFZC**  
4" & 6" Aluminum



Model  
**RCC-S**  
4" & 6" Stainless Steel

# Vent Caps



Model  
**SX**  
3"-8" Aluminum



Model  
**KX**  
3"-6" Aluminum



Model  
**SFX-S**  
4" & 6" Stainless Steel



Model  
**SXL**  
10"-16" Aluminum



Model  
**SFZ**  
4" & 6" Aluminum



Model  
**SFX**  
3"-12" Aluminum



Model  
**SX-S**  
4" & 6" Stainless Steel



Model  
**RCA-S**  
4" & 6" Stainless Steel

# Fresh Air Grilles



Model  
**JRC**  
4" & 6" Aluminum



Model  
**JRA**  
4" & 6" ABS Resin



Model  
**DK-M8**  
3", 4", 6" ABS Resin



Model  
**JSP**  
4" & 6" ABS Resin

► If you are interested in becoming an authorized international distributor, please contact us. (Except the United States/Canada/Mexico/Japan)



**SEIHO** | [seiho.com](http://seiho.com)

 We Ship Worldwide



Seiho International, Inc. 120 W. Colorado Blvd. Pasadena, CA 91105 Tel: (626) 395-7299 Fax: (626) 395-7290 info@seiho.com





# AIA Architect

## AIA Voices



PHOTOGRAPHY: KAVEH SARDARI

### The Need to Lead in School Design

**When it comes to learning environments, architects need to go above and beyond.**

Jenine Kotob, ASSOC. AIA, is an architectural designer at Quinn Evans Architects in Washington, D.C. While she was always passionate about the arts and skilled at math and science, what shaped her career path was the impact of being a Virginia Tech student during the 2007 on-campus shooting. That harrowing experience stuck with her during a two-year graduate program at MIT, where she concentrated on school design with a focus on overseas conflict zones. “I started to view design as a tool for engagement and community development,” she says, “as opposed to a static industry where you’re building objects.”

As told to Steve Cimino

When you compare schools to other buildings or venues, the expectations are very different. Schools are unique; parents trust the building—and the principals and teachers who run it—to keep their children safe. It’s a huge and awesome responsibility, and it takes more than architecture to follow through on that trust. As a society, we need to support schools culturally through smart and sound legislation and policy.

When people call for the hardening of our schools, I think that is a gut reaction from parents and community members in pain, and I think people with agendas often take advantage of that opportunity. This means architects have a charge to step forward, present the facts, and lead conversations. Sometimes that goes above and beyond what we typically do, but we’ve made so much progress with school design that we can’t go back now.

That said, a building is only as safe and secure as its users. If the front door is propped open, there will always be a weakness. With that in mind, I am currently one of

60 leaders from around the country that have come together under the umbrella of the Association for Learning Environments [A4LE]. We are a diverse group: architects, designers, administrators, teachers, students, and parents. We’ve all contributed to a school safety and security guide that A4LE has produced and continually revises; design is only one chapter, along with preparedness, policy, technology, and so on. The point being, there is a holistic conversation that is already happening in some capacity, and architects must be present at the table.

Every architect currently working on a school project is going to be asked, “What are you doing about security?” This is not new, and we’ve always been thinking about and designing safe and secure spaces. But now I think we need to be more confident in stating what we know, expressing that we’re going to continue learning, and getting better at talking about a topic that is charged politically and emotionally. That is the transformation we’ll need if we want our work to be more relevant going forward. **AIA**



# The leadership event of the year is coming to a venue near you!

## **AIA Leadership Institute 2018**

Nashville, TN | Orlando, FL | San Francisco, CA | Washington, DC  
November 9

**Register today!**

[aialeadershipinstitute.com](http://aialeadershipinstitute.com)

Sponsored by AIA College of Fellows



**The American  
Institute  
of Architects**



# AIANow

By Katherine Flynn  
Art Direction by Jelena Schulz

## Backyard Frontier

**California's housing crisis is prompting creative dwelling solutions.**

Thanks to a combination of strict land use regulations and strong economic growth, California has been experiencing a creeping housing shortage since the 1970s. Designers and urban planners think that accessory dwelling units (ADUs), which can be built without a zoning change as long as they're smaller than 1,200 square feet, have the potential to provide feasible solutions to the state's housing crisis—while flying under the radar of official housing regulations.

The Backyard BI(h)OME, winner of an AIA 2018 Small Project Award, is an experimental prototype lightweight ADU that contains a bedroom, living room, bathroom, and kitchen/dining room in only 500 square feet. Conceptualized by Kevin Daly Architects, with design collaboration and fabrication by graduate students at cityLAB, a think tank within UCLA's Architecture and Urban Design Department, the structure is made of a steel pipe frame and a sheer wall made of timber with an exterior clad in a honeycomb formation of paper cylinders housed in layers of ETFE (fluorine-based plastic) wrap.

*Lightweight metal frame with 2-layer vacuum sealed ETFE wrap*

*Plywood wall stiffeners*

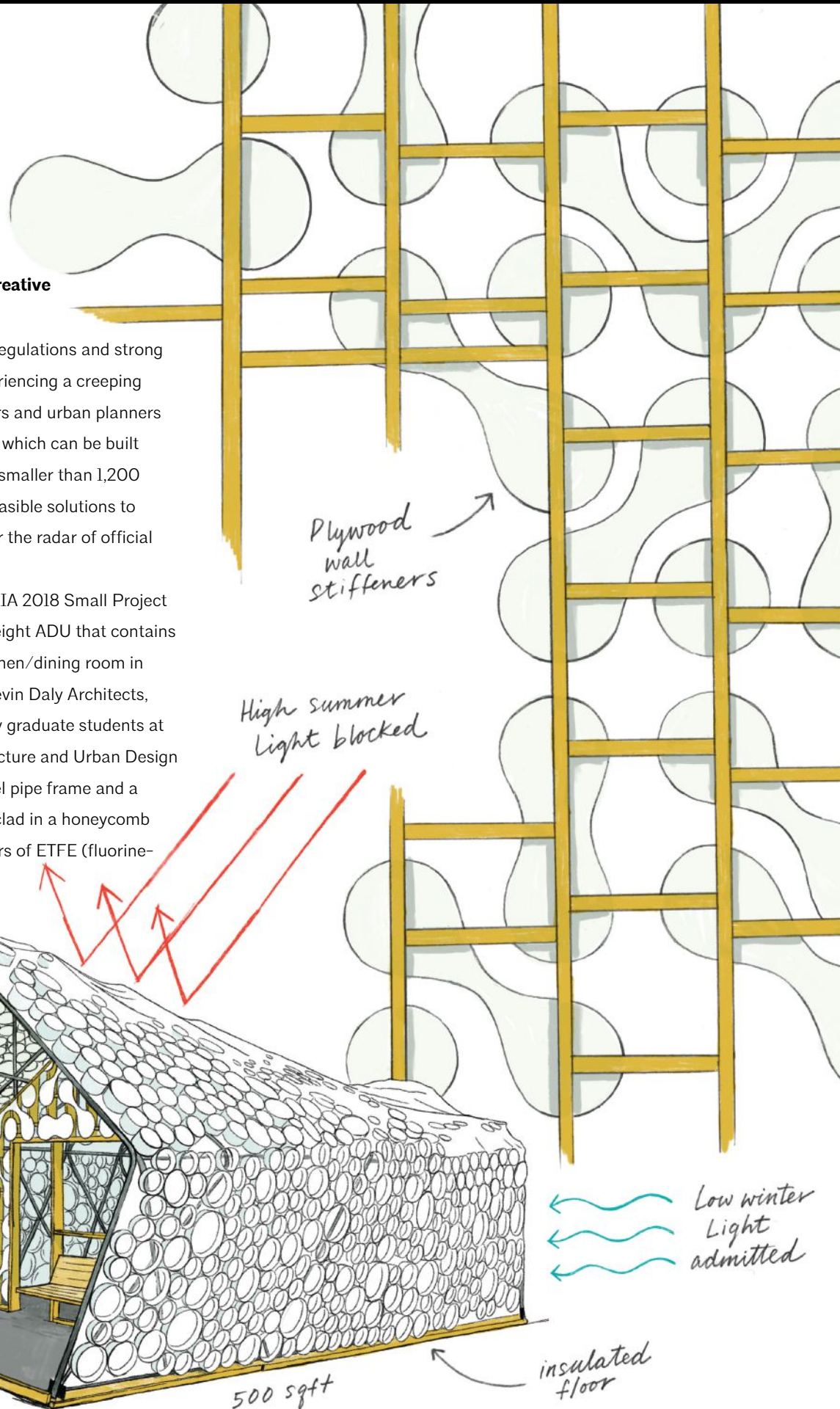
*High summer light blocked*

*Low winter light admitted*

*500 sqft*

*insulated floor*

ILLUSTRATION: LAUREN NASSEF



10th Anniversary!

# Architecture & Design Film Festival

## New York 2018 October 16-21

The Architecture & Design Film Festival (ADFF) is the nation's largest film festival devoted to the creative spirit of design and architecture. The 10th year has a fantastic lineup with over 30 films. Opening night will be the world premiere of *LEANING OUT – An Intimate Look at Twin Towers Engineer Leslie E Robertson*.

adff

Design Directs Everything  
[adfilmfest.com](http://adfilmfest.com)

photo: Courtesy of Leslie E Robertson

LASVIT

Boffi

SONY

SUITE NY

Ceramics of Italy

vitra.

The American  
Institute  
of Architects



# AIAFuture

## A City of Juxtapositions

**Crafting a new identity, post urban renewal, for Peekskill.**

Modernism arrived in Peekskill, N.Y., a Hudson River Valley town 60 miles north of New York City, in the 1960s.

Renewal through demolition opened up the opportunity to impose a new order on Peekskill, a view that presents itself the moment one steps outside the Peekskill Museum. The 1878 building that houses the museum—all gables and turrets and yellow- and green-shingled millwork—sits upon a hill. In its immediate background is a late-midcentury brick high-rise, rectilinear in form with small symmetrical windows and punched-out, boxy balconies. The scene recalls theorist Fredric Jameson's *Postmodernism*, in which he writes about the construction of the Wells Fargo Tower in Los Angeles' historic Bunker Hill neighborhood, observing that Modernism effectuated a "waning of historicity" and "depthlessness" of place.

The view makes manifest how far removed Peekskill is from its urban renewal-era recovery, and how far it still has to go. In addition to an increase in property crime, vandalism, and a rash of fires—documented in detail by former city historian John Curran in *Old Peekskill's Destruction in the 1960s and 1970s, By Urban Renewal, Fires, Riots and the Parking Authority*—the city's tax coffers rang hollow as its economic base imploded and government-owned and/or -run properties increasingly replaced the private sector. Today, though, emerging from its conflicted memories as a historic and "renewed" place, Peekskill can be seen as a city of juxtapositions now aiming to incorporate all of itself into a new identity.

In a demographic study produced by nonprofit Hudson Valley Pattern for Progress, looking at just the period 2000–2015, median household income in Peekskill "has fallen by 20 percent when accounting for inflation, while the poverty rate has edged up from 11 to 13 percent." Since 1990, however, both property and violent crime rates have collapsed to minimal levels, and demographic change has occurred as both white and black populations have decreased while there has been a rise in the Hispanic population, from 22 percent to 37 percent.

Downtown, a derelict district in the late 1960s, now percolates with activity. Jim Pinto,



The 1878 building that now houses the Peekskill Museum, "all gables and turrets and yellow- and green-shingled millwork," sits against a late midcentury high-rise, rectilinear in form and recalling Fredric Jameson's "waning of history" in the urban landscape.

Peekskill's economic development director, can list off and speak in detail about any one of the many developments happening in the city. A couple of these are the Gateway Townhomes, which are 16 infill townhomes downtown, and One Park Place, a mixed-use high-rise from Long Island City-based Alma Realty, slated to bring 181 housing units and mezzanine outdoor dining to the downtown periphery. In addition, an RFP was recently issued for an old salvage yard where Pinto hopes to see proposals for hospitality, light manufacturing, or perhaps a recreational sports complex—things that are "both job opportunities and bring feet on the street," he says.

Pinto speaks broadly of making Peekskill's quality of life better, not only through building projects but by addressing underlying infrastructure needs. "The city is rebuilding sewage pumps stations and adding future connections to increase capacity. We're leveraging infrastructure funding to rebuild in anticipation of future development," Pinto says.

Jean Friedman, the city's director of planning, references the city's Downtown Design Guidelines as a way to ensure that the aesthetic intent of new development or rehab is compatible with the remaining historic stock to produce a complete city.

Ben Green is chair of Art Industry Media (AIM). In 1979, Green's grandfather and father purchased the Peekskill Hat Factory building, a dilapidated and sparsely occupied industrial/commercial facility. In the ensuing years, Green has transformed the old brick

building into a makerspace that is currently 100 percent occupied. AIM grew out of his and others' work in bringing together Peekskill's disparate creative, manufacturing, and legacy communities.

AIM's goal is to position Peekskill—which is proximate to New York City, Grand Central Terminal being exactly one hour away on Metro-North—as a logical locale for a multimedia hub that attracts people who may have been priced out, and also provides opportunities for locals to become immersed and trained in the next phase of Peekskill's small-scale economy, which, this time, will be media-driven rather than goods-based.

AIM intends to act as a radio, broadcasting the diversity of talent and opportunity that already exists in Peekskill—from MakerBot co-founder Bre Pettis' presence, who is developing a high-tech ecosystem, to the Emmy-award-winning sound production company Alchemy Post Sound.

"We want to pull together folks in the creative industry and network these folks to those who are here," Green says. "We don't make stoves. We don't make hats. America needs media. We're putting together pipelines for kids to plug into, ideas to make old spaces like firehouses into places that provide the skills [to enter] into the media economy." And perhaps reclaim Peekskill's particular sense of place as it reframes the woes that wrought its renewal. **AIA**

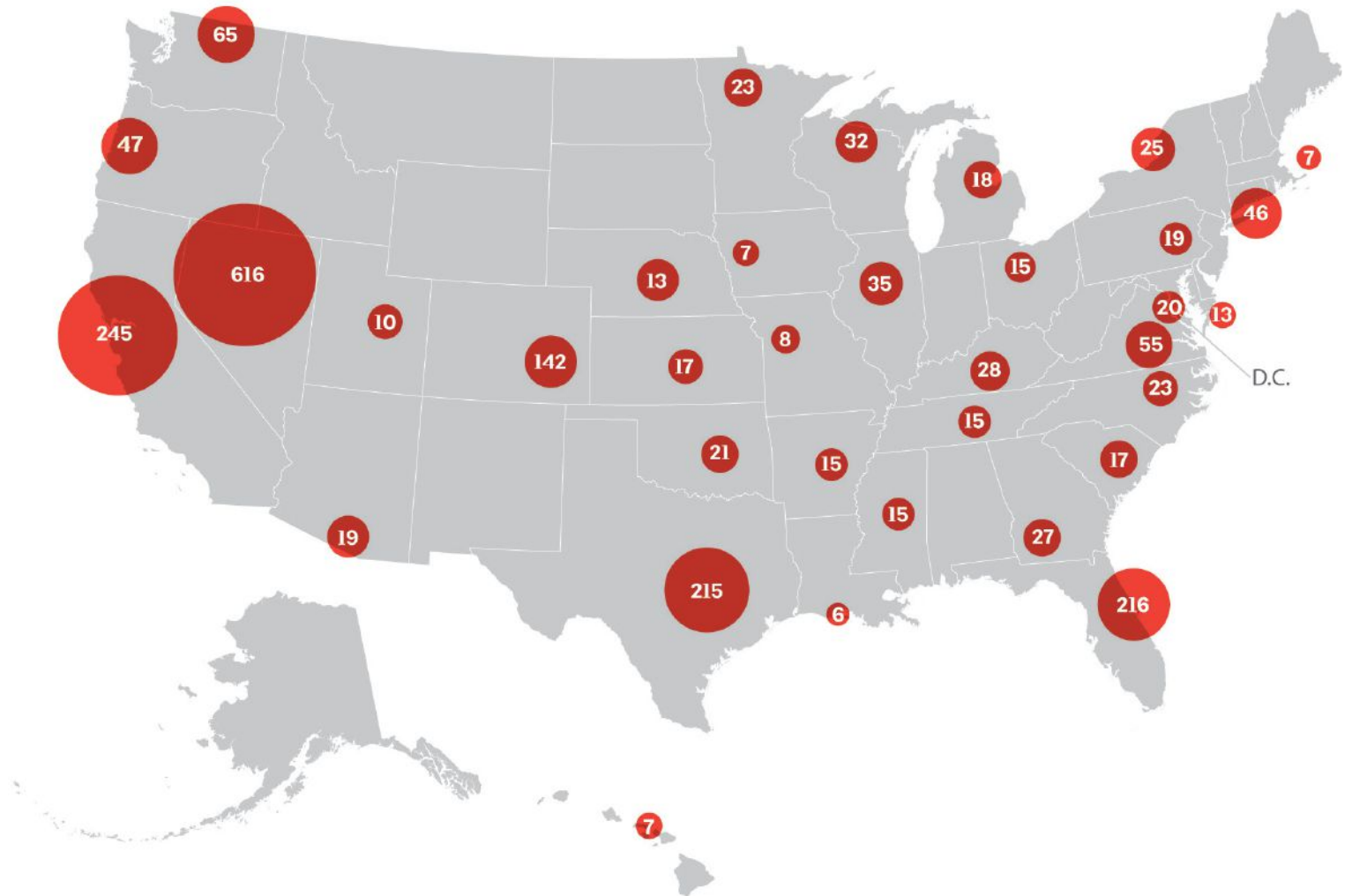
Ben Schulman

AIAFeature

# How Architecture and Design Can Hinder Active Shooters

Realistic paths to safer spaces.

Mimi Kirk



This map shows the combined number of fatalities and injuries from mass shootings by state between 1982 and 2018. Adapted from Mother Jones' "US Mass Shootings, 1982-2018: Data From Mother Jones' Investigation."



In June of this year, a 38-year-old man with a grudge against the Annapolis, Md., *Capital Gazette* newspaper entered the four-story building that houses the paper, blasted through the office's front doors with a shotgun, and proceeded to kill five staff members in a matter of minutes.

Though such public mass shootings are extremely rare—and only a tiny fraction of all U.S. gun deaths—a spike in active shooter incidents in 2017 as well as earlier tragic cases such as Connecticut's Sandy Hook Elementary School shooting of 2012, in which 20 children between the ages of 6 and 7 years old died, have stoked fears and amplified calls for strategies to deter active shooters.

Much attention has been paid to making schools safer in the wake of Sandy Hook and other more recent shootings, such as at Marjory Stoneman Douglas High School in Parkland, Fla. Calls to increase security in all types of buildings and spaces, from offices to hospitals to concert venues, are also widespread—and architects are among those responding to those calls. Given the absence of gun control legislation, design serves as a tangible way to address the problem.

Architecture and design have long played a role in making public buildings and spaces feel safer. After the 1995 Oklahoma City bombing, designers placed bollards and concrete planters outside federal buildings to deter truck bombs, and installed glass able to withstand a blast in windows and doors. Efforts to better secure buildings—whether federal, commercial, or otherwise—surged after 9/11.

New York City–based architect Barbara Nadel is editor-in-chief of the 2004 volume *Building Security: Handbook for Architectural Planning and Design*. She says that while some building types, such as government facilities, must be concerned with hardened exteriors to protect them from explosives and vehicle bombs, threats such as cybersecurity and active shooters have been of increased concern to the public and the building industry since 9/11. Regardless, the first step to determine potential threats and vulnerabilities for any building or site is a risk assessment.

Security consultants, who may also be former law enforcement or military officers, often conduct these assessments. Their recommendations may involve architectural and landscape design elements as well as technology and facility operations. For instance, an assessment may recommend a limited number of entrances, technology like closed-circuit TV or metal detectors at public entrances, and training staff to know exactly what to do and who to call when they detect a threat.

“The owner will decide which elements from the risk assessment to pursue, as there's a price tag attached,” Nadel says. “The architect should understand the potential liability if a catastrophic event occurs, and the design team and the owner have not adequately included established protective measures, or if the owner chooses to eliminate a potential recommended security element.”

At the same time, the idea is not that design can definitively protect people from an active shooter or other hazard, but rather that it can discourage such threats or create delays that save lives. Thomas Vonier, FAIA, 2016 AIA national president and an architect with wide experience in security projects, notes that architecture can't resolve problems stemming from the nearly indiscriminate availability of powerful firearms in the U.S. “We shouldn't expect building design to deter persons who turn to mass murder as a way to resolve issues or address grievances,” he says. “At best, design can facilitate early warning, offer places of refuge, and provide paths for escape.”

### Design Elements that Can Make a Difference

Zach Hudson, CEO of Orlando, Fla.–based Grantham Systems Incorporated, which trains

employees on ways to respond to active-shooter situations and provides consulting on security-related construction, explains how warning, refuge, and escape strategies are put into practice. Though each building or space necessarily demands its own design, some tactics span all cases. Hudson stresses the need for a limited number of entrances that cannot be easily breached. In the case of Sandy Hook and the *Capital Gazette*, the doors were locked but the gunmen shot through glass that abutted or compromised them to gain entry. The use of bullet-resistant glass would likely have delayed them, but even standard safety glass with wire mesh could have at least slowed the attackers down.

Entrances should also be monitored. Jay Brotman, AIA, of the New Haven, Conn., firm Svigals + Partners—the architect of the new Sandy Hook Elementary School that opened in 2016—explains that the new school is situated so that all who approach it can be observed from the more public spaces, and that people entering the building must cross a rain garden to reach the entrance. “Three footbridges span the garden and control access to the building,” Brotman explains.

Hudson adds that issuing badges to visitors and taking their photographs in an office lobby is another way to control entry and access, and Nadel notes that hospital emergency rooms in particular need a limited number of entrances with good observation by medical and security personnel and closed-circuit TV due to the unpredictable populations and cases coming into an emergency room at any given time.

Once people have entered a building—whether it's a school, office, hospital, or someplace else—they must be allowed egress from a variety of exits. Hudson says that in

# AIA Feature

CONTINUED

Orlando's Pulse nightclub shooting of 2016, many club goers were killed because they retreated into bathrooms and closets where the gunman found and shot them. "If patrons or employees have to shelter in place, there should be safe rooms available at strategic locations throughout the facility," he says, adding that a doorknob lock, hollow core doors, and drywall aren't enough protection in such rooms. "Use Kevlar wall panels," he says, "and have a secondary lock that is extra-durable or even bullet-resistant that the attacker cannot see from outside the door."

## Scaling Up to Big Spaces

While office buildings, hospitals, clubs, and the like are similar in their design needs regarding safety, concert and sports venues diverge due to their vast spaces and the fact that thousands of people congregate at them at a given time, making them particularly vulnerable sites. Though metal detectors can monitor what patrons carry into a concert or game, shooters have found workarounds. During the 2017 Las Vegas shooting, for instance, the gunman fired down on crowds at a country music festival from the 32nd floor of a nearby hotel, killing 58.

And while training is important anywhere—Nadel and Hudson both stress the need for in-depth and repeated training and drills for hospital doctors and nurses, office workers, and the like—it is particularly crucial for those who work at concert and sports venues. "You need a viable, real-world security plan," says Hudson, "and the employees must be part of that solution through training and planning." Creating a plan that ensures that people don't all run for one exit—where they would create a choke point, as well as an easy target for a gunman—is one example of such training.

This people-centered strategy of keeping buildings and areas secure relates to the tenets of Crime Prevention Through Environmental Design (CPTED), a codified set of ideas that has been foundational to risk mitigation since the 1970s. CPTED is based on the idea that criminal behavior is less likely to occur if potential criminals perceive a risk of being detected or caught. Tactics such as keeping shrubs trimmed low and placing windows so they overlook sidewalks and parking lots allow people to easily observe their surroundings and ensure "eyes on the street."

Though architects may be familiar with such security-enhancing design strategies,

they are not always prioritized in plans for construction or renovation. Architect Randy Atlas, president of Atlas Safety & Security Design, in Fort Lauderdale, Fla., and an adjunct faculty member at Florida Atlantic University, says that security is often an afterthought, making it less integrated in the design as a whole, as well as more expensive to integrate after the fact. "It's time that we consider security as a design criterion for future architecture and built environments," he says, noting that at least two cities—Tempe, Ariz., and Pompano Beach, Fla.—now require that architectural plans go through a security review.

In order to keep public spaces from looking too much like fortresses, Nadel and Brotman maintain that security must be invisible to the public eye and complement design excellence. Sandy Hook's rain garden, for instance, is meant to provide security without making it feel like it's providing security. In courthouses, public buildings and airports, for example, Nadel says an organized and welcoming lobby design can be achieved by carefully planned placement of queuing lines, metal detectors, security personnel, and screening equipment. "This applies to any building lobby where people must wait to get inside," says Nadel. "Allowing adequate space for programmed lobby elements expedites the process during peak hours."

These strategies aim to make us feel more secure while at the same time providing a sense of freedom of movement and aesthetic appeal. For architects, this creates a challenging task: They must not only provide such equilibrium in their designs but also consider the low probability of danger despite the high anxiety that has gripped American culture.

The fact is that an infinitesimal number of us will face an active shooter—many more will be killed driving our cars—and the safest place for a child, after all, is in school. But in order to feel more comfortable in this age of fear, design must respond to the vulnerability and unease many of us now feel in public buildings and spaces.

"If you're not feeling safe—whatever the facts may be—you're not going to thrive," Brotman says. "Architects need to provide a level of security that makes people feel secure. It's a balancing act." **AIA**

Mimi Kirk is a writer and editor based in Washington, D.C.

"Architects need to provide a level of security that makes people feel secure. It's a balancing act."

—Jay Brotman, AIA



# AIA Practice



ILLUSTRATION: TIMOTHY WELLS

## Where Sustainability Meets Prosperity

**The fastest-growing city in America is fueled by sustainable investments.**

Austin, Texas, is a shining example of how sustainability can contribute to the development and growth of a city. Through its Office of Sustainability and the work of local architects, the Lone Star State's capital provides a thoughtful framework for other cities to consider when crafting sustainability initiatives that drive more holistic development and help cities achieve economic prosperity.

With a five-year economic growth rate of 6 percent and about 150 people moving to the city daily, Austin has been identified as the fastest-growing city in America. Though widely known as a center of creativity and art, Austin is experiencing rapid growth in other industries. "We're seeing this really interesting convergence of government, academic, and technology," says Wendy Dunnam Tita, FAIA, a principal at architecture and engineering firm Page, and longtime Austin resident.

One of the reasons Austin is so attractive to incoming residents and sectors is the city's commitment to sustainable development. Austin has prioritized sustainability initiatives for decades, ensuring that current and future Austinites have the highest quality of life possible. "I appreciate how the city has invested in being a thought leader. It's a great city that's continuing to do research and create healthy communities and buildings," says Dunnam Tita, who is also serving as the 2018 president of AIA Austin.

Austin has set national standards for a sustainable built environment, recognizing that buildings, public space, and infrastructure are all critical contributors to a thriving population. As early as 1990, the city created the Austin Energy Green Building (AEGB) program, the first of its kind in the United States, predating the U.S. Green Building Council's LEED rating system. Since that time, Austin has invested in research centers, supported sustainability-focused nonprofits, and implemented progressive codes and policies.

The massive influx of new residents, and particularly young professionals, has required developers and architects to prioritize sustainability goals in new buildings. "Sustainability resonates with the people here in our city," Dunnam Tita says. "The people who are moving into apartment buildings and condos want a healthy lifestyle. They're moving to a healthy city, and they feel like their apartment should have that component." Austin's commitment to sustainability mirrors Page's design philosophy and approach, says Dunnam Tita, noting that in the last 10 years the firm hasn't designed a single multifamily project in Austin without a LEED (or AEGB) rating.

To solidify its commitment, the city created the Office of Sustainability in 2010. The office oversees policy development and implements programs that put community health, the environment, and cultural vitality at the center

# AIA Practice

CONTINUED

of civic life. “We’re change agents,” says Chief Sustainability Officer Lucia Athens. Describing the work of the office, Athens, a licensed landscape architect, outlines a two-pronged approach. “We function with an internal lens on city operations and then a broader, community-based lens with what’s going on in the entire Austin and central Texas environs.”

Citywide sustainability initiatives cover a variety of environmental and social topics. Though the office tracks performance in 10 major areas, Athens says the most significant strides have been in climate change and resilient design, sustainable food systems, and sustainable neighborhoods called “EcoDistricts.” “All three areas come into play in meeting some of our goals for having a compact and connected city,” she says.

“We’ve also put mandatory requirements on all kinds of large projects that the city may be entering into, such as public-private partnerships or master development agreements,” Athens says. Also, after years of research, Austin is developing a draft landscape code that will heavily incentivize green infrastructure. “I think that’s a very exciting leadership play that I hope other cities are going to be looking at,” she says. “And it’s very doable and financially feasible.”

Architects are also leveraging the creative and social infrastructure of the city to create a more sustainable local economy. “We’re very interested in engaging local makers and artists in the work that we do,” Dunnam Tita says. “It is really important to us that the prosperity of the construction and design industry permeate all the way down to local talent and small businesses. We want the prosperity of our city to raise everybody up, as opposed to edge out the creative culture.”

Considering the needs and unique characteristics of Austinites in citywide development is a priority for architects and city officials alike. The Office of Sustainability’s programming includes a dedicated focus on equity, livability, and creativity, and AIA Austin leaders meet monthly with the mayor’s office, where they encourage design thinking as a means of achieving an inclusive and sustainable future for the city. “We know from those conversations that the issue of equity is definitely in the front of their minds,” Dunnam Tita says. “We would like to create that expectation in every single project that the city touches—to have it seen through the lens of health and sustainability.” **AIA**

# AIA Perspective



PHOTOGRAPHY: GABRIELLA MARKS

## Places for People

Danish architect and urbanist Jan Gehl, HON. FAIA, is perhaps the most widely recognized advocate for designing places with people in mind. His work has humanized cities around the world, including his hometown, Copenhagen, which is admired for its character, scale, and walkability. His most widely read book, *Cities for People*, is required reading in urban design courses.

What does it mean to put people first when designing? It begins with accountability. Design impact matters. Architects shape lives. How fully do we architects recognize and embrace the impact of our choices on the people who live in and near the spaces and places we create? “Incremental” housing designed by Chilean architect Alejandro Aravena, winner of the 2016 Pritzker Prize, is a compelling example.

Commissioned by Chile’s copper industry to build affordable housing, Aravena was guided by two “places for people” imperatives. First, how could the project reinforce the residents’ social network, not damage it? Aravena rejected his client’s direction to relocate the project onto more “affordable” land, appreciating that relocation would mean shredding the neighborhood’s fragile social fabric. He committed to designing a cost-neutral approach that would build a stronger community.

Second, how could the project provide opportunities and hope for people who had too little of both? Aravena designed “upward mobility” into his affordable housing. Adopting his now-famous sawtooth massing (see Quinta Monroy Housing), Aravena designed “incremental” expansion into the dwelling units. By filling in the gaps Aravena

left, residents can add about 40 percent more space for as little as 20 percent additional cost. The community’s social and economic fortunes were transformed by an architect who held himself accountable. Aravena designed with empathy.

Mindy Thompson Fullilove, HON. AIA, is a psychiatrist who has devoted her career to studying social networks and the impact of urban renewal, often studying projects like the affordable housing Aravena was first asked to design. Fullilove served as “public member” of the AIA board of directors from 2013–15. She often spoke to the board of the “pathological lack of empathy” in our profession and broader society. Dr. Fullilove knew exactly what she was saying using the term pathological.

Adopting the metaphor of a family, Dr. Fullilove describes why she believes our society’s lack of empathy is fundamentally self-destructive. In every city of our great nation—the wealthiest nation in history—children go to bed hungry, attend schools that don’t teach, and live in unsafe neighborhoods. We tolerate conditions as a society that we would never stand for in our families.

In the context of current social and cultural discord, the inherent optimism of our profession is its greatest asset. If our profession is to retain its value and relevance, we architects must accept our responsibility to confront human need with the full appreciation that our decisions make a difference. There are architects in every city of our great nation who, like Aravena, accept their accountability for social conditions, design with empathy, and create great places for people. Find them. Thank them. Join them. **AIA**



# Simply Brilliant Spaces

Enhanced With Specification-Grade LED Lighting



Lighting Design: ARUP | Architecture: Gensler | Photography: ©Ryan Gobuty/Gensler | Nassau Coliseum | Long Island, New York



Made to Order | Quality Tested | Advanced Expertise

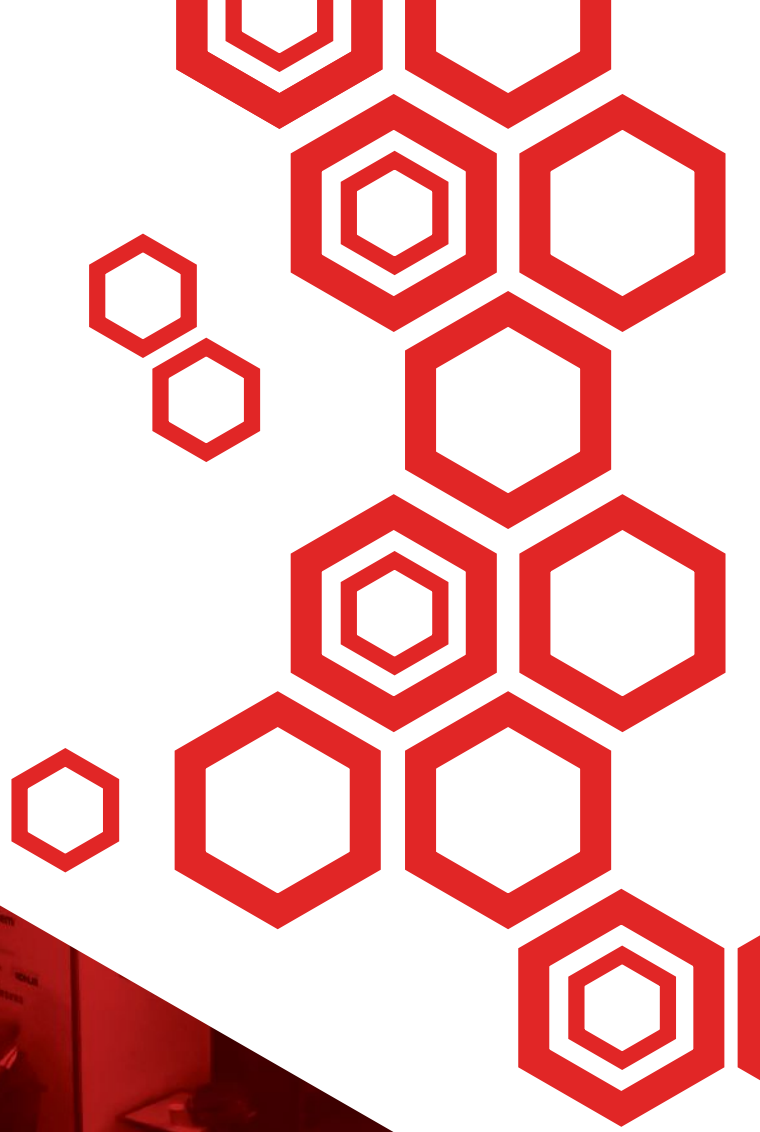
[luminii.com](https://luminii.com)



# REIGNITE THE DREAM.

**NOVEMBER 28-29, 2018**

JW Marriott • Austin, TX



Passes are limited.

## REGISTER TODAY!

[AR.HWHIVE.COM](http://AR.HWHIVE.COM)





HIVE dares to challenge the best and the brightest individuals and organizations to research, validate, showcase, and model actionable solutions as a template for small, medium-sized, and large jurisdictions throughout America resulting in social impact, a cohesive purpose, and new opportunity areas to **Reignite the Dream: Affordability for Purpose and Profit.**

## KEYNOTE

**Steven Johnson,**  
Author, *Wonderland* and  
*How We Got to Now*

## DEANS

**Fritz H. Wolff,** co-founder, Katerra  
**Anne Torney,** partner, Mithun  
**Natalie Bruss,** partner, Fifth Wall  
**Caroline Vary,** managing director,  
Asset Management  
**Carol Galante,** director, Turner  
Center for Housing Innovation  
at UC Berkeley

### Title & Underwriting Sponsor



### Founding Sponsors



### Alliance Sponsors



### Supporting Sponsors



**hive**  
HOUSING INNOVATION, VISION  
& ECONOMICS

The bottom right section of the page features a large, semi-transparent red graphic of a crowd of people at a social event. Overlaid on this is the 'hive' logo, which consists of a small white hexagon above the word 'hive' in a lowercase, white, sans-serif font. Below the logo is the tagline 'HOUSING INNOVATION, VISION & ECONOMICS' in a smaller, white, uppercase font.

USG  
Tile &  
Flooring  
Solutions

**SURPRISINGLY STRONG  
UNDERLAYMENTS.**



But strength is just the beginning  
with USG gypsum underlayments.

[usg.com/underlayments](https://usg.com/underlayments)

© 2018 USG Corporation and/or its affiliates. All rights reserved.  
The trademarks USG, IT'S YOUR WORLD. BUILD IT., the USG logo, the design elements  
and colors, and related marks are trademarks of USG Corporation or its affiliates.

**USG**   
IT'S YOUR WORLD. BUILD IT.®



“You just find something you like and you sit there with your camera and wait for a miracle, and the miracle will come. Well, my miracle came.”



Philadelphia, 1961

When Denise Scott Brown shows you her photographs, she looks less at the images on the screen and more at you, her audience, taking them in. She notes what pleases you, what doesn't, where your eyes are drawn. The silent interrogation might be unexpected—and occasionally formidable. But Scott Brown, HON. FAIA, has long made an art of looking in untraditional places and directions. She faces you, not the screen.





Availability is everything *AGC*  
when it comes to glass.

Curtainwall: AGC STOPRAY® Vision 50T

Availability is a big reason why AGC is the world's largest glass manufacturer. What does availability mean for you? Perhaps everything. It means the widest product portfolio to solve any challenge you encounter. And easy access to these products through strategically located distribution points across the continent. It means resting easier with the industry's shortest lead times. And knowing you'll get world-class support from concept to completion.

Learn more about AGC's Availability at [agcglass.com](http://agcglass.com)

**AGC**  
Your Dreams, Our Challenge



Between 1956 and 1973, Scott Brown took roughly 11,000 photographs of buildings, villages, streets, storefronts, and skylines, to inform her research and teaching as well as to illustrate her articles and books. Today, these photographs are attracting newfound critical attention, both as an unexamined body of work from one of design's most influential theorists and practitioners, and as a window into her craft, her "ethics of seeing," to borrow Susan Sontag's phrase about photography. Scott Brown's photographs and her approach to urbanism and design reflect the same singular talent: an uncanny ability to know where to look.

This summer, two London galleries, the Lethaby Gallery and the Betts Project, exhibited a broad selection of Scott Brown's photographs: a yellow shake shack framed by a sea of signs on Pico Boulevard in Los Angeles; the Mojave Desert viewed from behind the dash of a rental car; unlit neon signage decorating the Las Vegas Strip. These shows were preceded by an installation at the 2016 Venice Biennale and will be followed by a larger exhibition on Scott Brown's life and work opening in November at the Austrian museum of architecture in Vienna. The most exhaustive treatment will be a book of more than 500 images, titled *Wayward Eye*, which Scott Brown is currently compiling based on chronology, location, and her insights on urbanism.

#### Depicting the Demise of South Street

"You need to show the geometry and the proportions and the beauty of a building, but you need to show this as well," Scott Brown says. We're looking at a commercial strip of neon signs, broken and ragged; storefronts emptying but not abandoned; the worn blue façade of a modest street-corner church. In the 1960s, South Street was the commercial corridor and northern boundary of one of Philadelphia's oldest African-American neighborhoods, but when it became the city's favored route for a new highway, the Crosstown Expressway, businesses on South Street began to shutter. In the late '60s, Scott Brown collaborated with local housing activists to design a new plan for the neighborhood that preserved existing buildings and added new housing, and that aspired to help city officials imagine how the area could thrive without the expressway. The activists defeated the highway proposal a few years later, but by then the neighborhood had already been decimated. Even though Scott Brown's plan wasn't implemented, it's illustrative of the politically oriented planning and design work that she was drawn to early in her career, and how she used photography to investigate themes of power and class.



West Philadelphia, 1964



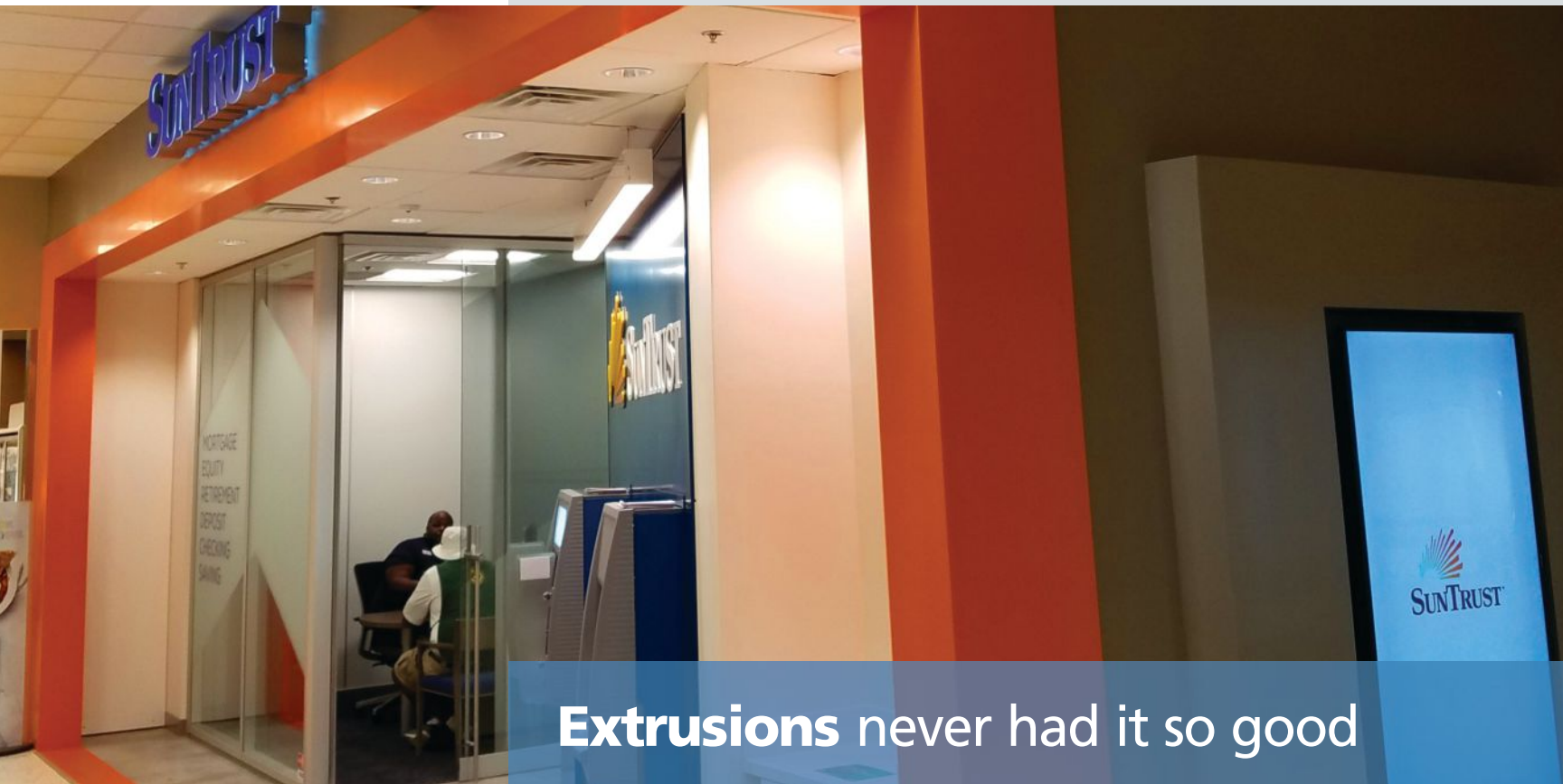
South Street, Philadelphia, mid-to-late 1960s



Philadelphia as seen across the Delaware River, 1963



High-solids spray coatings — the newest high performer from Dura Coat.



## Extrusions never had it so good

APPLIED SCIENCE

*Now aluminum extrusion panels, kick-plates, pole wraps, copings, fascias and cladding can have the same finish and protection as Dura Coat coil coatings.*

DURA COAT PRODUCTS, INC.

RIVERSIDE, CALIFORNIA • (951) 341-6500  
HUNTSVILLE, ALABAMA • (256) 350-4300  
[www.duracoatproducts.com](http://www.duracoatproducts.com)

AXALTA COATING SYSTEMS  
PHILADELPHIA, PA  
[www.axaltacs.com](http://www.axaltacs.com)



# Durapon<sup>70</sup>

DURA COAT'S NEW HIGH-SOLIDS PVDF SPRAY TECHNOLOGY SETS A HIGHER STANDARD FOR DURABILITY FOR YOUR ALUMINUM EXTRUSIONS. Durapon 70™ HS high-solids spray coating shines in monumental and commercial applications such as storefronts, curtain walls, railings, trims and fascias. The premium two-coat primer and finish coating system offers exceptional aesthetics as well as outstanding protection against corrosion, fading and chalking and meets stringent AAMA 2605-13 certification requirements.

### Green saves green

Durapon 70 HS advanced formulation allows use straight from the container without additional solvent reduction. This full-measure packaging is kinder to the environment while cutting application time and reducing applied cost.

Dura Coats's proprietary resins, PVDF and years of expertise deliver a high-solids, super-smooth finish with superior dirt- and stain-resistance. With unlimited color choices, including metallics and exotic finishes, and superior protection from whatever mother nature dishes out, we have you covered.

Call 951-341-6500 or 256-350-4300, or visit [www.duracoatproducts.com](http://www.duracoatproducts.com) for all your metal coating needs.





Santa Monica, Calif., 1968

Scott Brown had moved to Philadelphia in 1958 to study at the University of Pennsylvania's School of Design, whose faculty she joined three years later. It was in Philly that she had developed her interests in Main Street and the commercial vernacular, including billboards and signs, as well as her understanding of the intersections between architecture and political economy. She photographed both the city's wealthy and its working-class districts, climbing stairs and gazing out windows to survey the context of entire streets: in one instance a residential block with two-story worker row houses, a hopscotch court drawn in chalk, and a large monolithic factory building rising behind the residents who congregated in the street.

One afternoon, Scott Brown experienced her "miracle"—a fortuitous moment that she ascribes to French photographer Henri Cartier-Bresson. "He says you just find something you like and you sit there with your camera and wait for a miracle, and the miracle will come. Well, my miracle came." Scott Brown was sitting by a wall graffitied with the words "I love you." The neighborhood was underserved and the wall poorly maintained, the message of love subversive. And then a group of school girls in white uniforms walked into the frame. As one stares ahead, another glances toward the lens; the orange on her dress collar matches the orange of the scrawl on the wall.

It's a striking image, like many of Scott Brown's photographs. But it's the collection as a

whole that best reveals her subjectivity: her love and understanding of patterns; her fascination with iconography; her dedication to the question and complexity of scale. In short, the collection reflects many of the concerns that informed her groundbreaking study of Las Vegas, which she conducted with her longtime partner Robert Venturi, FAIA, and Steven Izenour, and which transformed architecture—and art and culture more broadly. She met Venturi at Penn, where they taught together, shared notes, and critiqued one another's work. When they left in 1965—he to Yale University and she to UC Berkeley and then to UCLA—she was already intrigued by the sprawling cities of the American West. When they married in 1967, Scott Brown was developing a studio on the Vegas Strip for UCLA; after the wedding, they moved it to Yale.

#### Reversing an Earlier Erasure

During these heady, productive, contentious years, Scott Brown's photography was often viewed as a pleasant-enough yet unserious pursuit. Real designers sketched—or so the conventional wisdom went (and often still goes). In 1968, when Scott Brown and Venturi published their first article on Las Vegas, in the journal *Architectural Forum*, about A&P Parking Lots, the editors printed these bios: "Mr. Venturi is the Philadelphia-based architect whose recent book *Complexity and Contradiction in Architecture*



# SEAMLESS DESIGN



Photo features selections from Panoramic Porcelain Surfaces™

## ONE SLAB FITS ALL WITH FLEXFIT™ SIZE SOLUTIONS

Achieve any look you want, inside and out, with Panoramic Porcelain Surfaces™. Plus – with our FlexFit™ Size Solutions choose one of our convenient, standard stocked sizes or create any design with our custom cut-to-size program. Dream it, design it, we can do it!

 A DIVISION OF MOHAWK INDUSTRIES

 **daltile**®  
IMAGINE WHAT'S POSSIBLE™

Visit [daltile.com](http://daltile.com) for more information or  
to find a location near you.

©2018 Daltile

created a good deal of controversy at the time of its publication. Denise Scott Brown, who took most of the photographs accompanying this article including the one on our cover, is a teacher in architecture and urban design and an earlier contributor to 'The Forum'. She is also Mrs. Venturi."

The bio perfectly encapsulates the prejudices of its era: Scott Brown is "a teacher" rather than a UCLA professor, and "Mrs. Venturi," which was never her name. But before any of this we learn that she "took most of the photographs," a sneaky little clause that constricts her contribution first and foremost to the images and, in turn, diminishes their import as well. In 1968, the design world placed little value on women or photography; grouping them together made a sort of undermining sense.



Maple Shade, N.J., 1963



Soweto, Johannesburg, South Africa, c. 1956-57



# Safe buildings can build your reputation.

Find out how **Thermafiber® SAFB™ FF** is designed for healthy buildings.

Salesforce Tower  
San Francisco, CA

For Salesforce Tower, we worked with architects and contractors to create a custom **Thermafiber®** perimeter fire containment system. It's designed to contain fire and prevent hot gases from entering rooms through voids that would normally exist at the intersection of floor assemblies and exterior walls. It's pioneering fire safety. And the latest innovation from the experts at the Owens Corning Building Science Solution Center, who helped create the first formaldehyde-free mineral wool and the first insulation to receive Homeland Security's Safety Act designation as a Qualified Anti-Terrorism Technology. The result is the tallest building in San Francisco – smarter, safer and more comfortable.



**OWENS CORNING®**  
COMMERCIAL BUILDING SOLUTIONS

Fiberglas® | Foamular® | Thermafiber®

Download spec files at [owenscorning.com/commercial](http://owenscorning.com/commercial)

# Feeney CableRail... Beauty Made Easy

Our *CableRail* stainless steel cables offer a view-friendly railing infill option that's attractive, durable, and ultra-low maintenance, while our automatic-locking *Quick-Connect*® cable fittings make installations a breeze.

Free catalog  
1-800-888-2418 or  
visit [www.feeney15.com](http://www.feeney15.com)

CABLE·RAIL®

feeney® 

Photo: Decks by Kiefer



Las Vegas, late 1960s



Los Angeles, 1968

Today, Scott Brown's photographs are helping to reverse the earlier erasure of her contributions—an erasure the photographs themselves once indirectly aided, which makes their current recognition almost poetic. It's a recognition that comes at a moment when, perhaps for the first time, the male gaze is starting to lose its privileged position.

Indeed, one particular photograph won't appear in Scott Brown's book or in any gallery frame: the photograph for which she is most famous, the one that Venturi took of *her* on their first trip to Vegas together, in 1966. Her power pose—legs wide, hands on hips—is an awesome, radical image; she's depicted in a way that few women were then seen. But this is how someone else saw her, not what she was seeing through the lens.



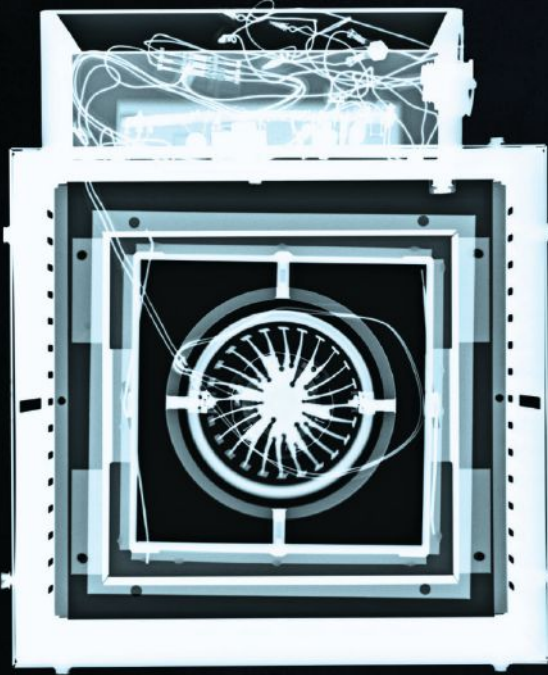
00:22:54 24362  
01:01 03MD C  
CM-100\_0m  
+100\_Km  
+00\_0  
AZ\_90

A

29:07MN  
:3 / 03 / 2018 16:39:52  
3G-RCL-TRIM Madison Adjustable Gimbal

L

120 AV  
00 am



R

120 AV  
00 am



GUTS  
TO GLORY



**3G**  
LIGHTING

MANUFACTURING + DESIGN  
**3GLIGHTING.COM**  
1-888-448-0440

**INDUSTRY LEADING TECHNOLOGY ON THE INSIDE.  
AWARD WINNING DESIGN ON THE OUTSIDE.**

The innermost glory of 3G LIGHTING is in its guts: designed and manufactured in-house with exceptional quality. More competitively priced than ever, our products ship quickly to meet today's most aggressive delivery schedules.



**HANOVER**<sup>®</sup>  
Architectural Products  
[www.hanoverpavers.com](http://www.hanoverpavers.com)

---

**Porcelain Pavers**



Philadelphia, 1961



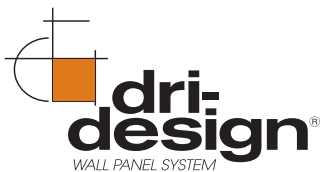
Mojave Desert, c. 1965



# FORM + FUNCTION.



The Dri-Design Metal Wall panels on the Nordstrom Toronto Eaton Centre feature the Inspire Finish in a Shadow Series panel with varying levels of gloss. This variation gives the individual cassettes distinguishing pattern when viewed both near and far. Utilizing a custom Dri-Design detail, Custom LED light bars were also incorporated into the façade. The detail allows the light bars to be hidden within the horizontal joints.



616.355.2970 | [dri-design.com](http://dri-design.com)

- No sealants, gaskets or butyl tape means no streaking and no maintenance for owners.
- Not laminated or a composite material, so panels will never delaminate.
- At Dri-Design, we have a strict policy of recycling and creating products that the world can live with.
- Fully tested to exceed ASTM standards and the latest AAMA 508-07.
- Available in a variety of materials and colors.
- Non-combustible and NFPA-285 compliant. UL Listed.

Nordstrom Toronto Eaton Centre | Design Architect: Callison/RTKL  
Architect of Record: Queen's Quay Architects





Chelsea™ TILE w/eborized walnut ©2017 modularArts, Inc.



Chelsea™ TILE w/silver mirror ©2017 modularArts, Inc.

### InterlockingRock® TILES W/INSERTS

These natural gypsum tiles incorporate inserts that are available in a variety of materials, including walnut, ebonized walnut, silver or gold mirror. Inserts are designed to cover mount points and joints, creating a continuous, uninterrupted pattern over a wall of any size.

**modulararts®**

www.modulararts.com 206-788-4210 made in the USA

So we only see the photograph that she took, moments before, of Venturi. They had been driving across the desert from L.A. when Scott Brown spotted three towers in descending height: the Dunes Hotel resort and casino flanked by its famous, spade-shaped sign and a sort of oversized brick chimney. She imagined Bob as a fourth tower, and decided to style him with his back to the camera—an anonymous, midcentury everyman looking toward the young city. It's jarring to see the photograph alone; you instinctively search for its counterpart.

But then you contemplate what Scott Brown was beginning to understand. Las Vegas wasn't the sort of place that the architectural establishment paid much attention to back then; it was too crass and unrefined. But Scott Brown saw a sophistication to its architecture, a logic to its excess. Her gaze was playful—and prescient.



Las Vegas, 1966



# Fin-ish.

How do you add a final touch of performance to a facade? Our terracotta fins affix to the curtain wall to provide shading and add visual rhythm. Engineered and extruded to your precise specifications, ensuring an end result that expresses your vision.

[NBKUSA.com](http://NBKUSA.com)

**NBK** | ARCHITECTURAL  
TERRACOTTA  
A Hunter Douglas Company 

TERRACOTTA FINS, 1333 H ST. NW WASHINGTON DC.  
PROJECT ARCHITECT: GENSLER.



WHAT LIES BEYOND LUXURY.

*There is a level that transcends luxury.*

*Few comprehend it.*

*Still fewer possess it.*

*And in the realm of windows and doors  
this level is occupied by one name – HOPE'S.*

Photo Courtesy of Boston Properties, Inc.

**HOPE'S®**

[hopeswindows.com](http://hopeswindows.com)

HOPE'S STEEL & BRONZE WINDOWS & DOORS – LUXURY TRANSCENDED.



“In an ideal world, the new additions would have featured a proper and distinct set of spaces and a new, resonant character, both on the inside and the outside.”

**How the Frick's Expansion Works (Just Barely)** by Aaron Betsky

Any quibbles with the proposed renovation and expansion of New York's Frick Collection should be filed under the category "First World Problems." That does not mean, however, that the \$160 million (projected as of now) nip-and-tuck of this venerable institution—designed by New York-based Selldorf Architects and approved by the New York City Landmarks Preservation Commission this summer—is an achievement. Instead, it shows the powerlessness of contemporary architecture in the face of both the good buildings that make up its heritage and entrenched interests and attitudes.

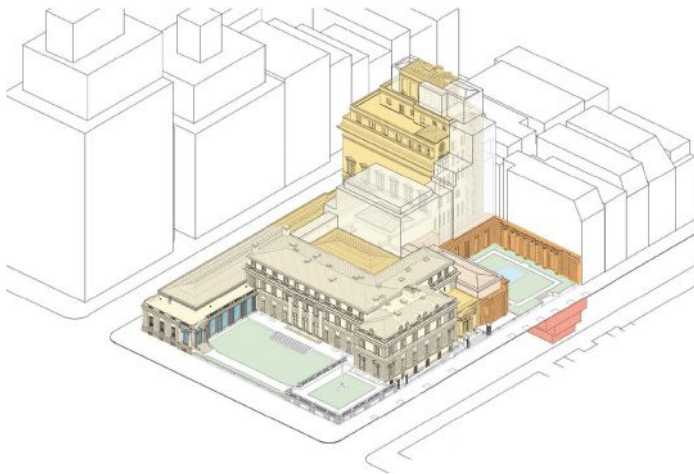
This is especially frustrating because the Frick is one of the most brilliant examples of how a renovation done with care and smarts can enhance and expand a building's use and beauty. The original structure was designed by the New York firm of Carrère & Hastings as a home for the Pittsburgh robber baron Henry Clay Frick and his family. Completed in 1914, it took its place on Fifth Avenue alongside a pastiche of Italian city palaces and French chateaux, largely financed by the often ill-gotten gains of the Gilded Age tycoons. The Frick mansion distinguished itself with a certain delicacy in detailing and siting. Its single most important contribution to the city was

the front garden, running the length of the avenue and extending Central Park into the private realm, which made the whole appear both more modest and, paradoxically, more luxurious than the neighboring buildings that loomed over the street.

In 1935, the best Neoclassical architect this country has ever produced, John Russell Pope, renovated and expanded Frick's residence so that the building could serve its new purpose: as a museum showcasing the family's collection of old masters. He added the Garden Court and Oval Room, two of the most perfectly scaled and detailed spaces in New York, as well as a seven-story library and research center to the rear.

Pope's achievement was, above all else, to make the transformation seem natural. The (to my mind) somewhat prissy detailing and massing of the original was left facing Fifth Avenue and Central Park, while the addition scaled the building up to the height and bulk of the apartment blocks that were by then beginning to cast shadows upon and replace the mansions. Pope's more muscular and sculptural detailing similarly transformed the texture of the building, both inside and out. In the 1970s, landscape architect Russell Page's rear garden completed the building's transition by giving each block an appropriate place and scale.

How the Frick Expanded Over the Years



- 1914 · Original Frick residence by Carrère & Hastings
- 1924 · Original library by Carrère & Hastings (demolished 1934)
- 1935 · Museum and library addition by John Russell Pope
- 1941 · Vault addition by Eggers & Higgins
- 1977 · Reception hall and garden by Bayley, Van Dyke & Poehler
- 2011 · Portico gallery by Davis Brody Bond
- 2020 · Current proposal by Selldorf Architects

#### The Needs of a Modern Museum

What Pope didn't do was provide the kind of spaces appropriate to a modern museum. Today, institutions like the Frick are machines for bringing people and art together, and that process requires a lot more space—for exhibitions hung with care, but also for education and conservation, and for management and support services. In addition, there is the extra square footage needed to accommodate larger crowds—from making sure people are not waiting outside in the rain, to selling them tickets and checking their coats, to allowing those who are less able to enter and move through the building. The Frick has struggled with these issues for years and, after several failed attempts, now seems to have found a way to answer to those demands.

Selldorf's design does appear to be more or less successful in terms of those functional issues. Visitors will be able to move through the existing foyer—beautiful but cramped—and into the kind of ticketing lobby they might recognize from other museums or boutique hotels. A small set of special exhibition rooms have been carved out on the main level, so that the Frick can host special exhibitions without disturbing the display of its permanent collection.





## THROUGH THICK AND THIN.

Trust Endicott to help you create uninterrupted design. The same beautiful colors, bold textures and assorted sizes—available in both face and thin brick—so you can build spaces that move.



Endicott's keyback thin brick is manufactured to meet the requirements of ASTM C1088, Exterior Grade, Type TBX, and the more stringent size tolerances of +0" -1/16 required for precast applications.

Endicott Clay Products Company | Endicott Thin Brick & Tile, LLC

402-729-3315 | [endicott.com](http://endicott.com)



Proposed First-Floor Plan



Proposed Second-Floor Plan



- Galleries (existing)
  - Galleries (special exhibitions)
  - Galleries (second floor)
- Research/curatorial
  - Administration
  - Retail/visitor services/café
- Operations/building support
  - Education
  - Mechanical

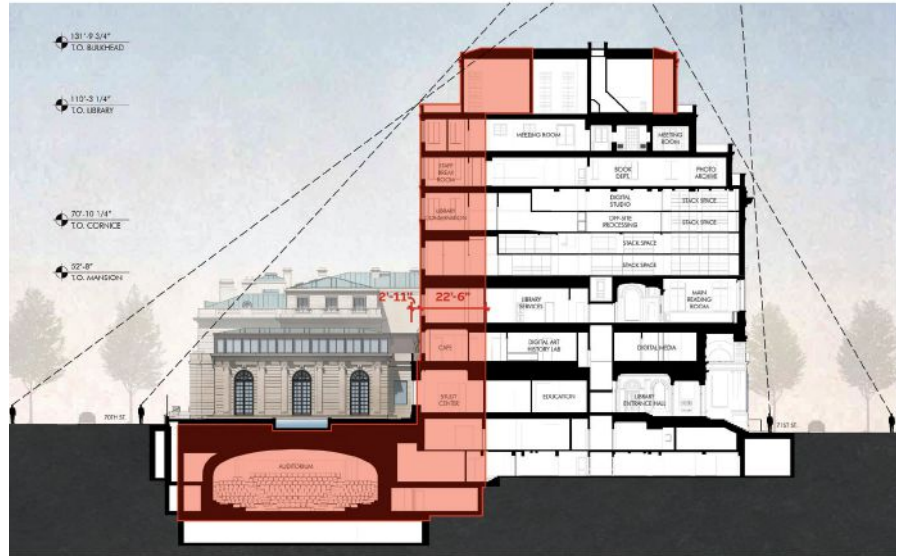
COURTESY THE FRICK COLLECTION





Section

“What Pope didn’t do was provide the kind of spaces appropriate to a modern museum. ... Seldorf’s design does appear to be more or less successful in terms of those functional issues.”



**CONGRATULATIONS**

TO HANLEY WOOD'S JESSE H. NEAL AWARD WINNERS

Hanley Wood is committed to publishing quality content that serves the information needs of construction industry professionals. Our editors have once again been honored by the most prestigious editorial awards program. Join us in congratulating them.

**2018 WINNERS**

ARCHITECT  
Grand Neal Winner

ARCHITECT  
Best Subject Related Package

THE JOURNAL OF LIGHT CONSTRUCTION  
Best Technical Content

**2018 FINALISTS**

ARCHITECT

BUILDER

THE JOURNAL OF LIGHT CONSTRUCTION

MULTIFAMILY EXECUTIVE

PROSALES



For  
The Only  
Public School of  
Architecture In  
New York City

The City College  
of New York

BERNARD & ANNE SPITZER  
SCHOOL OF ARCHITECTURE

The City College of New York Bernard & Anne Spitzer School of Architecture invites nominations and applications for the position of dean, the academic and administrative leader of the school and its urban research and advocacy center, the J. Max Bond Center. The school seeks an inspirational leader, ambitious entrepreneur, and collegial partner who will articulate a clear vision for the school that translates into a sound operational plan, engages a critical, cogent, and imaginative pedagogy, and enhances the school's impressive diversity.

**Application**

bit.ly/ssadeansearch

ssa.ccny.cuny.edu

A new staircase, whose shape attempts to pay homage to Carrère & Hastings' original residential version just a few steps away, will take visitors up to new permanent collection galleries on the second floor.

The offices have been tucked into a new attic. In the basement, all mod cons will be on offer, including a purpose-built auditorium that will replace the Music Room, where the lucky few



The Frick entrance circa 2009



A rendering of Selldorf's proposed redesign

who secured tickets could enjoy intimate concerts. A small ribbon of space tacked onto the Pope library addition will greatly expand that building's usefulness and provide new offices and facilities. Unlike in previous versions of the expansion plans, the Page garden will remain intact.

#### Just Another Art Museum

So, what's not to like? For one thing, Annabelle Selldorf, FAIA, is no John Russell Pope. Her design evidences no conception of classical architecture:

## IC/Air3

: designed by Guto Indio da Costa  
modernfan.com







**“In a fast-track project, Graham helped to design – and delivered – exactly what we were looking for.”**

JAMES VOELZKE, FAIA, LEED AP  
Principal  
MV+A Architects

PROJECT NAME: RODIN SQUARE  
OWNER: DALIAN DEVELOPMENT

## WINDOW WALL EXPERTS

If you're looking for aesthetics, ventilation, flexibility, high thermal efficiency, and greater speed in mid- to high-rise new construction, talk to us. Our window wall system can meet your needs by offering various ventilating styles, from projected and casement to sliding windows, as well as terrace and sliding glass doors. All thoughtfully integrated into your design.

YOUR VISION. OUR EXPERIENCE.™  
**GRAHAM**  
ARCHITECTURAL PRODUCTS

[grahamwindows.com](http://grahamwindows.com) | 800.755.6274



# A LUXE ADDITION TO MODERN SPACES

S-32 IN STAINLESS STEEL



# BANKER

YOUR WIRE MESH AUTHORITY

[WWW.BANKERWIRE.COM](http://WWW.BANKERWIRE.COM) | 1-800-523-6772

its rules, its proportions, or its potential.

There's also the unfortunate fact that the operation will turn the Frick into just another art museum. True, it will still be easy to escape to the historic rooms, where the modifications made over the years—to secure the art and improve the viewer experience—are largely invisible. But the new spaces will be characterless; they will lack any distinct qualities of their own—unlike, say, the steel-and-glass addition Renzo Piano, HON. FAIA, designed for the Morgan Library, a building that another robber baron, J.P. Morgan, left to the city of New York. That characterless anonymity will also plague the exterior façade design, which really does call to mind the work of the many cosmetic surgeons in the surrounding neighborhood. Taut and almost featureless, Selldorf's proposed additions appear so without distinguishing elements that I am at a loss for how to describe them.

What should have happened? In an ideal world, the new additions would have featured a proper and distinct set of spaces and a new, resonant character, both on the inside and the outside. But neither the preservation guidelines that have the Upper East Side in a vise, the heirs to the Frick traditions, or the affluent neighbors who look down at the building from their neighboring apartments would ever allow something like that to happen. Failing that, an architect who really understands how classicism works might at the very least be able to continue Pope's work. It's not too late for that: Selldorf came up with a reasonable set of floor plans; a good Neoclassicist could style those with a bit more elegance.

What should really happen is that the Frick should just move everything apart from the permanent collection out of the building. It should recognize that, at its core, it is and always will be a house museum exhibiting old masters to a limited audience. Whatever else it wants and needs to do should happen elsewhere, perhaps in Long Island City or New Jersey—or maybe even in Pittsburgh, where Frick built the empire that financed all of this in the first place. Like the Cooper Hewitt, which has been trying for decades, without success, to turn Andrew Carnegie's mansion farther up on Fifth Avenue into a world-class design museum, the Frick should realize that some buildings were never meant to be modern cultural and educational institutions. Spending \$160 million to contribute a new cultural and research institution that is not overstuffed and hunkered down, and that's not in this enclave of white privilege, would seem a much better strategy for all concerned.





**Karndean**  
Designflooring

Commercial

## See Flooring Differently

As an expert in your field, you have a reputation to uphold. We know the feeling. With 45 years of experience specializing in luxury vinyl flooring, we've built a reputation on original visuals, quality and durability. From one expert to another, trust us when we say your reputation is safe with Karndean Designflooring underfoot.

See for yourself at  
[www.karndean.com](http://www.karndean.com).

Three innovative luxury vinyl formats.  
**Gluedown • Loose Lay • Rigid Core**





ROCKY MOUNTAIN  
H A R D W A R E  
HOSPITALITY





VETERANS HONOR PARK | CHESTERFIELD, MO  
POWERS BOWERSOX ASSOCIATES  
CUSTOM CONCRETE BY TECTURA DESIGNS



# MATERIALS USED: HONOR, PRIDE AND CONCRETE.

When you build a memorial, you make it unforgettable. One visit to Veterans Honors Park in Chesterfield, MO, and you are forever touched. As it represents our nation's highest honor, this site features the highest quality precast concrete with special touches like custom engraving and subtle underlighting. With Tectura, the possibilities with concrete are anything but.

**TECTURA**  
designs.

*Let's build bold.*

[TECTURADESIGNS.COM](http://TECTURADESIGNS.COM)

Rotations, Voids, and Spatial Inflections from Animate Archi-Tectonics:  
Structural Configurations Between Lines, Planes, and Volumes studio



INTRODUCTION BY KATIE GERFEN  
STUDIO DESCRIPTIONS BY CLAY RISEN



**JURY****Yolande Daniels**, principal, Studio Sumo, New York**Eric Owen Moss**, FAIA, principal, Eric Owen Moss Architects, Culver City, Calif.**Jennifer Yoos**, FAIA, principal/CEO, VJAA, Minneapolis

We pin a lot of hopes on today's architecture students. That's nothing new, really: The next generation has always been scrutinized to see what principles and ideas they will develop and where they will steer design in the years to come. But in an era of climate change, rising housing costs, and a changing landscape of social awareness, that scrutiny has taken on a new sense of urgency. Change is necessary, and new approaches and innovators can help make it possible. — — — — —

— — — To that end, the Studio Prize celebrates the most innovative academic studios in North America, and offers a preview of the ways students may approach design problems in their future careers. Selected by an esteemed jury of practitioners—Yolande Daniels, Eric Owen Moss, and Jennifer Yoos, all educators themselves—this year's six winning studios (including two recipients of the Sloan Award, which recognizes sustainable water conservation and management) use novel means of investigation not only to hone students' formal design skills, but to tackle issues of local and global importance, whether they're re-envisioning zoning for climate change-impacted areas, exploring housing typologies that create more affordable density, or imagining how cities can adapt as sea levels rise. The lines of inquiry instigated by the professors and addressed by the students—each of the latter will receive a share of the \$25,000 in prize money provided by program sponsor, Sloan—suggest that the next wave of architects will be well prepared to help tackle the pressing problems we face. — — — — —

## Animate Archi-Tectonics: Structural Configurations Between Lines, Planes, and Volumes

The Cooper Union

The Irwin S. Chanin School of Architecture

**Studio Brief** | Working from Paul Klee's observation that "drawing is taking a line for a walk," this studio introduces first-year undergraduates to the principles of line, plane, and volume through a series of additive—or "animate"—exercises. The studio culminates in a presentation by each student of a portfolio of drawings and models, along with a narrative explanation of the work.

**Investigation** | Mersiha Veledar, an assistant professor at the Cooper Union, doesn't believe in easing her first-year students into the school's rigorous undergraduate program—and it shows in the way she designed her studio, Animate Archi-Tectonics, which throws them headfirst into a deep exploration of how lines, planes, and volumes come together to create architectural forms.

The studio is split into three phases, beginning with an examination of the ways lines intersect. From those drawings, students investigate how the forms created by those intersections function at different scales and dimensions; they then build models, which they test in terms of scale and habitation—inserting doors and stairs, for example.

"In my book the most exciting thing about this studio is showing students how abstractions can be made real," Veledar says.

Students build on those line drawings and models in the next two phases, which move into a study of planes and then volumes—in this way, the students' projects are "animate," a way of emphasizing the dependence of even the most intricate designs on these basic architectonic elements.

The studio functions on multiple levels: not only in its explicit content, but in its structure—even the requirement that each project have a narrative and a title serves a pedagogic purpose, Veledar said. The student narratives had to explain how they developed their project, as well as how the final version coheres as a statement.

"They have to learn how to argue through a project, and how to present it," Veledar says.

Though Veledar's studio is a challenge for students who are just a few months out of high school, she said she was impressed with how much they were able to advance within just a few months. The jurors agreed. "I think the work is beautiful," said juror Eric Owen Moss, FAIA, who was also impressed with Veledar's unconventional approach to introducing basic architectural concepts. "It does seem to suggest that there is another way to see, study, and speculate about form and shape."

### Studio Credits

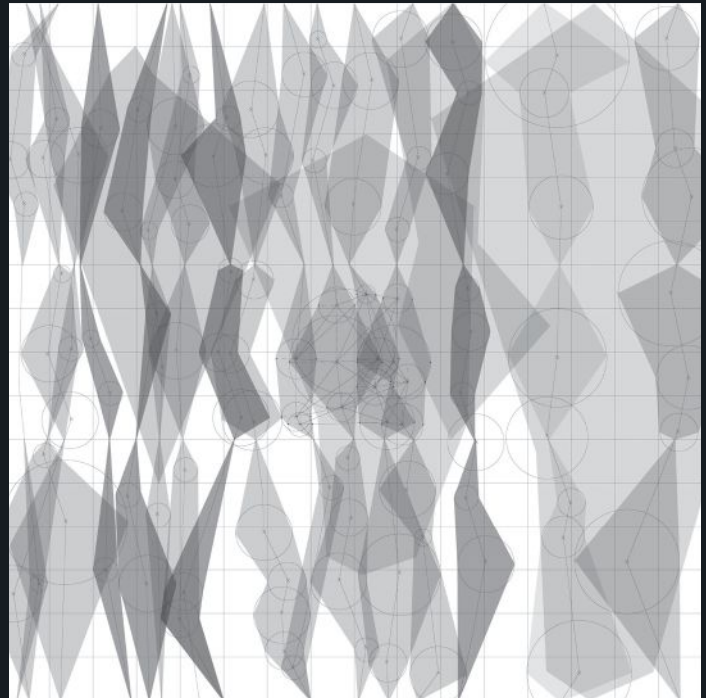
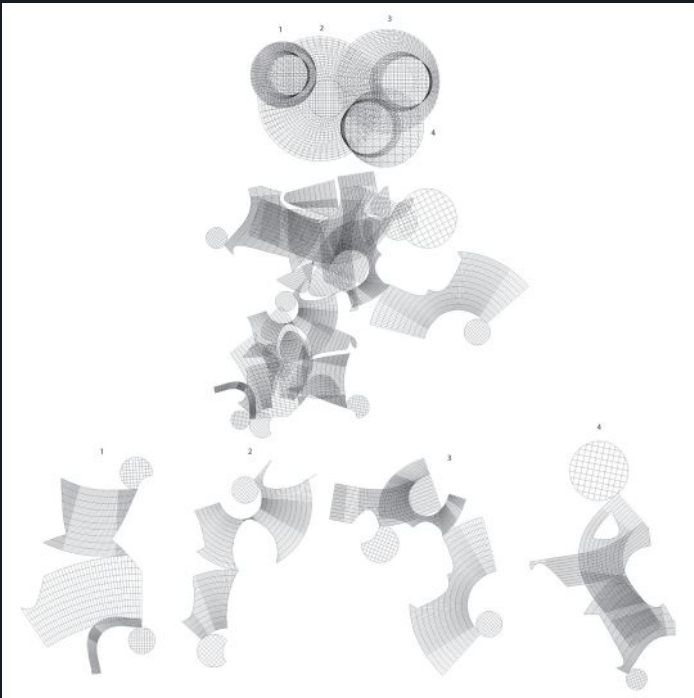
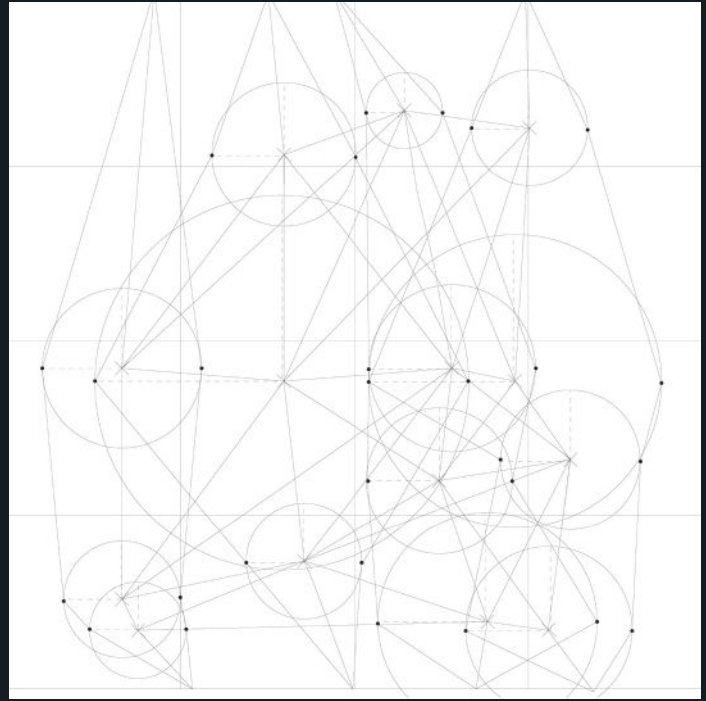
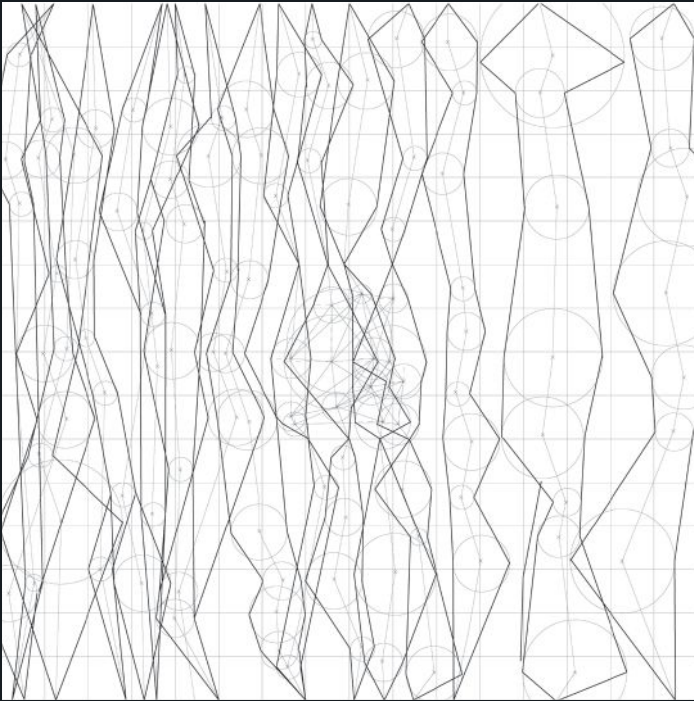
**Course Name:** Animate Archi-Tectonics: Structural Configurations Between Lines, Planes, and Volumes  
**School:** The Cooper Union, The Irwin S. Chanin School of Architecture  
**Level:** B.Arch., year one  
**Duration:** Fall 2017 semester  
**Professors:** Mersiha Veledar (assistant professor, studio coordinator, proportional time); Alexa Tsien-Shiang

(assistant professor, adjunct); Yasmin Vobis (visiting professor II)  
**Students:** Xinyi (Cindy) Guo, Jiwon (Jenny) Heo, Sidney Hoskults-Linet (submitted projects); Suet Wa Au, Xiaohan Bao, Ezekiel Binns, Jiawen Chen, Amanda Cheng, Thomas Choi, Kevin Chow, Ji Yong Chung, Tilok Costa, Yuval Gesser, Kai Huang, Kyungmin Kim, Maria Eleni Komninou, Sanjana

Lahiri, Sebrina Leventis, Julia Maevski, Ahzin Nam, Tiam Schaper, Chulin Yu  
**Techniques/Tools:** freehand sketches; drawing techniques (AutoCAD LT, Rhinoceros 3D, Grasshopper scripts, photographs, Adobe Creative Suite); animations (Adobe Photoshop, Final Cut Pro); drawing nomenclatures (2D plans, sections, composite drawings, unrolled elevations,

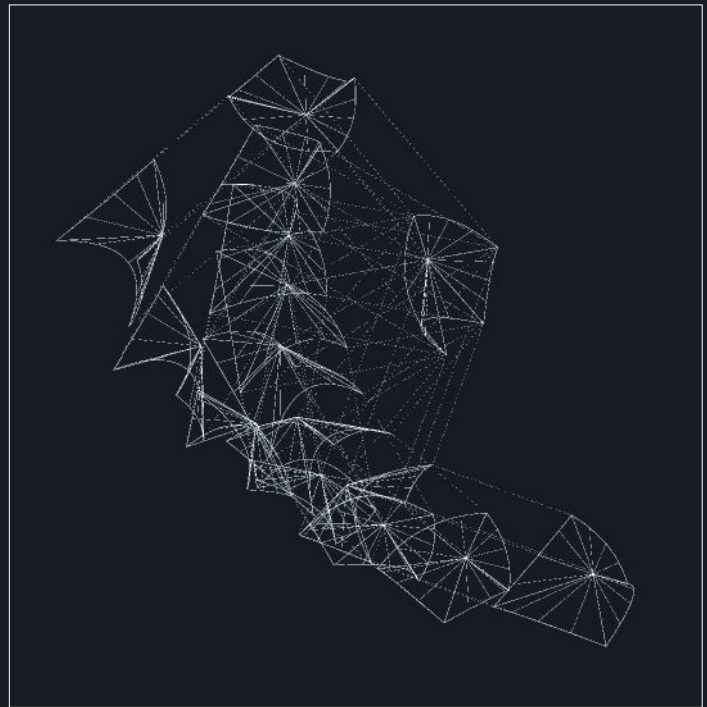
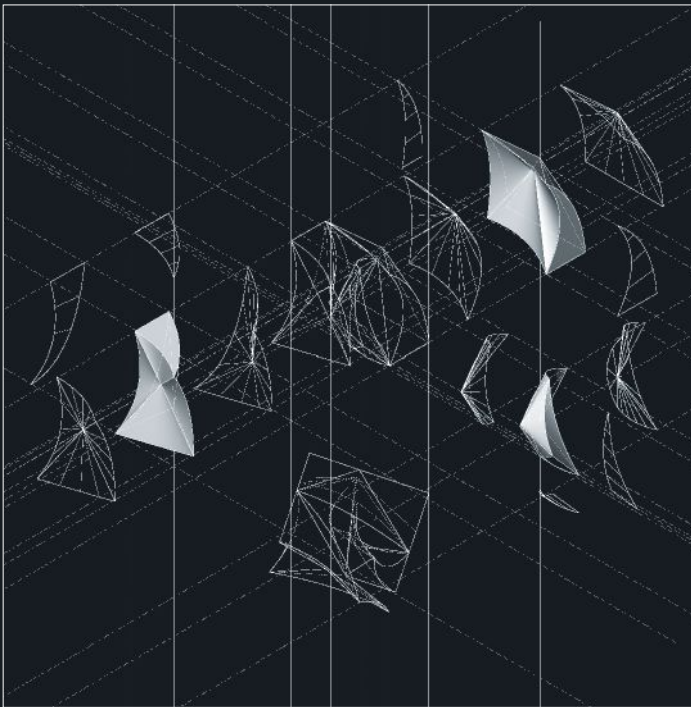
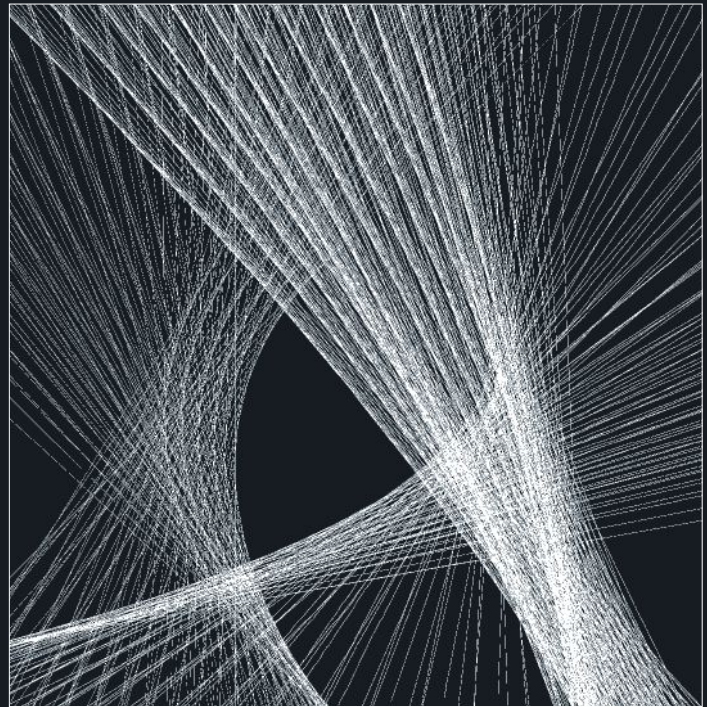
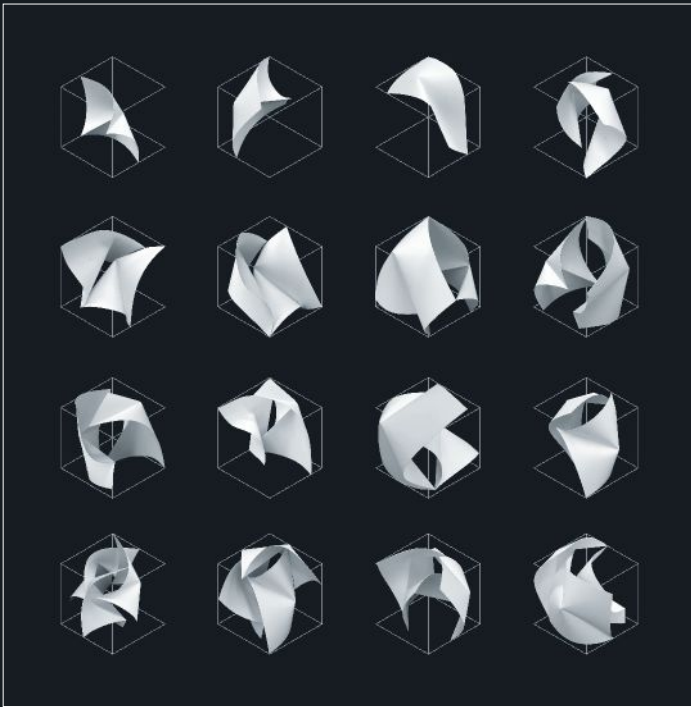
3D oblique "de-assembly construction" drawings, "object rotation" drawings, exploded "part-to-whole" axonometrics, "generating concept" animations); analog model making (paper, wood, and metal shop tools); digital model making (Rhinoceros 3D, 2D laser cutter, 3D printing tools)





### Bundled Matrix |

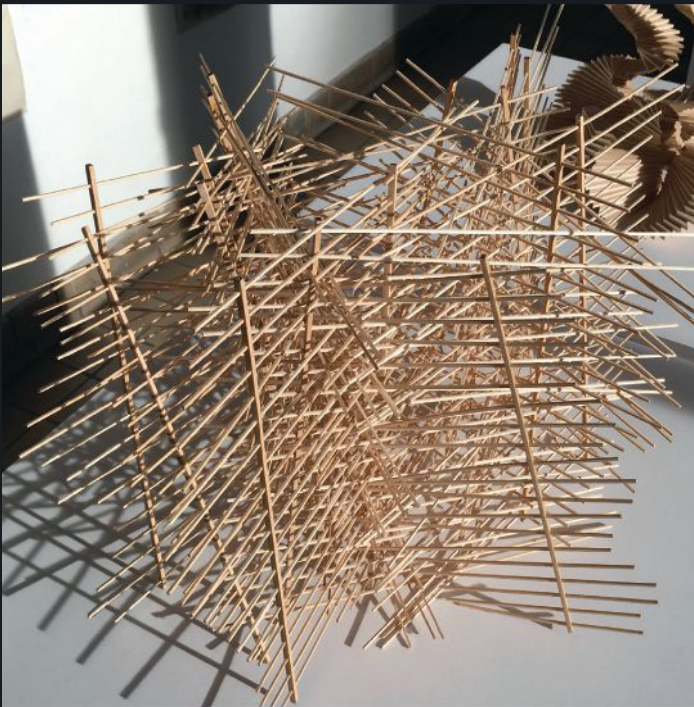
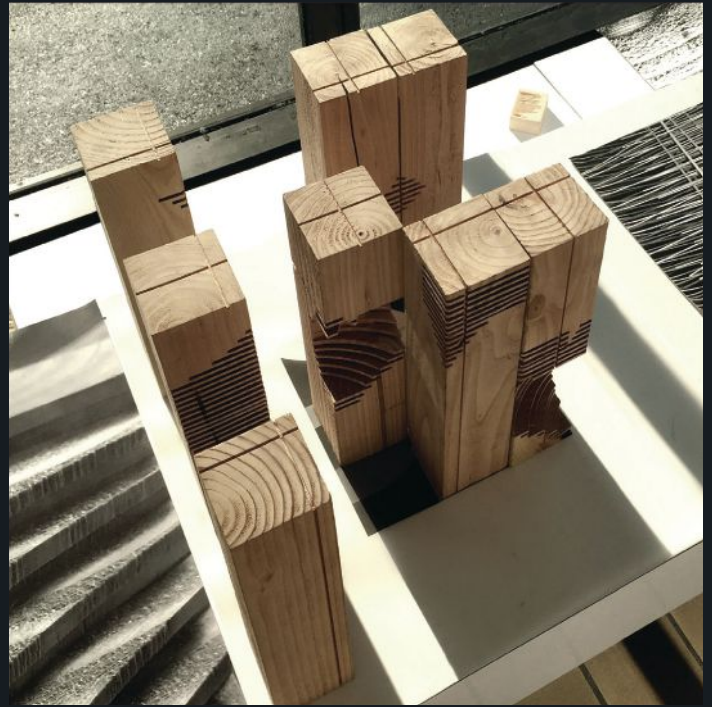
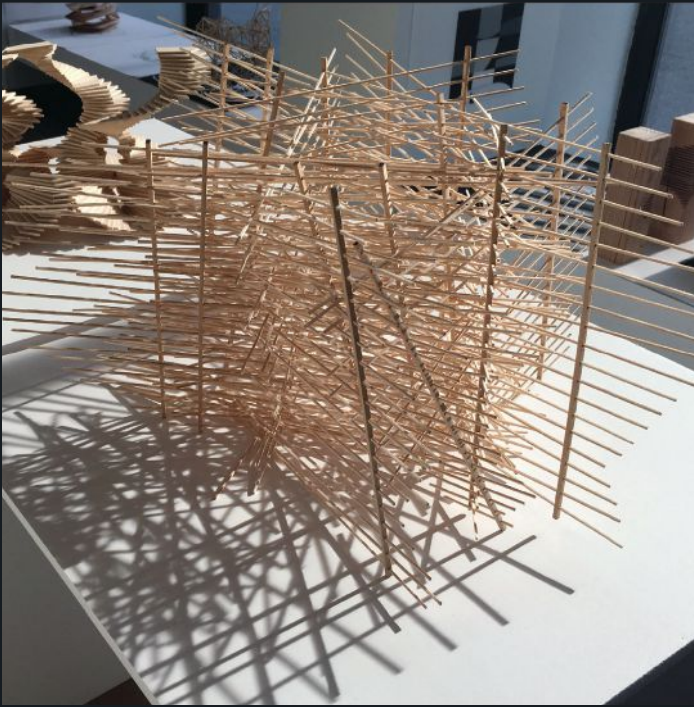
For the “line” phase of the studio (above), Jiwon (Jenny) Heo turned to the inspiration of sculptor Ruth Asawa’s woven mobiles and objects to create a generative field of lines that could be understood in plan or section. Heo created a sequence of drawings composed of bundled matrices of circles and lines. Those bundles were given verticality and form in later phases, and translated to an occupiable space defined vertically by stairs and skylights.



### Rotations, Voids, and Spatial Inflections |

Xinyi (Cindy) Guo investigated voids as a kind of spatial algorithm, creating a series of surfaces in the planes phase (above) that she explored in physical and digital models. Guo developed structural models by either folding or rotating the various linear components. She then rotated these elements to create iterations of inhabitable voids, and used light to animate the spaces.





### Tectonic Rhizome |

Sidney Hoskults-Linet looked to the idea of a rhizome—a constantly expanding root system—to develop a scheme that could grow and respond during the line, plane, and volume phases, maintaining continuity while responding to changing parameters. Hoskults-Linet identified horizontal and vertical pathways as the project additively evolved from lines to planes, but, as it moved to three-dimensional models for volumes (above), used subtraction to create circulation routes for both users and light.

## Capstone, San Francisco Section

University of Arizona  
College of Architecture, Planning & Landscape  
Architecture

**Studio Brief** | For this final studio in the University of Arizona's undergraduate architecture program, students were tasked with designing a large-scale project along a large pier in southeast San Francisco. The fall semester seminar included site visits, readings, and analysis by the students, who then developed their individual projects during the spring studio.

**Investigation** | San Francisco's Dogpatch neighborhood sits snugly on the city's southeastern shore, between Potrero Hill and a long line of piers jutting into San Francisco Bay. Both the neighborhood and the piers were once hotbeds of industrial activity, and after decades of decline are now being transformed by waves of development pushing in from the north.

In other words, it's the perfect subject for an architectural studio, says University of Arizona associate professor Susannah Dickinson. "It's so close to downtown, yet underutilized," she said. "It's prime real estate." The waterfront focus also exposes her students to a new ecology. "Coming from a landlocked location, it's something they haven't had to work with before," she says.

Dickinson gave the students a specific site—Pier 70, a 69-acre industrial span just east of Dogpatch—but provided them with only general guidelines on what to design (for example, they had to consider issues of sustainability, sea-level rise, and the existing community). In a way, the site itself provided the parameters: With climate change and sea-level rise pressing issues in the Bay Area, they were forced to consider issues of sustainability and adaptability in their designs. "That line shifting between land and water became a real design challenge," she said.

A heavy emphasis on research and analysis of the site and the broader urban context, before any design work took place, paid off in the projects' sensitivity not only to their immediate environment, but to the Bay Area as a whole.

One project, the Urban Aquatic Conservatory, created a nature preserve that blurred the line between land and water in the middle of a rapidly densifying neighborhood, while also acting as a "sponge" and filter for rainwater coming from the surrounding hills. Another, the Floating Metropolis, imagined a San Francisco 82 years in the future, in which hyper-urbanization and rising sea levels have forced residents to develop entire communities that live on, and off of, the coastal waters.

Each of the projects has a "poetic aspect to it," juror Yolande Daniels said, which, she noted, is tied to a "consciousness of ecology" as a core aspect of both the design challenge and each resultant solution.

### Studio Credits

**Course:** Capstone, San Francisco Section  
**School:** University of Arizona, College of Architecture, Planning & Landscape Architecture  
**Level:** B.Arch., year five

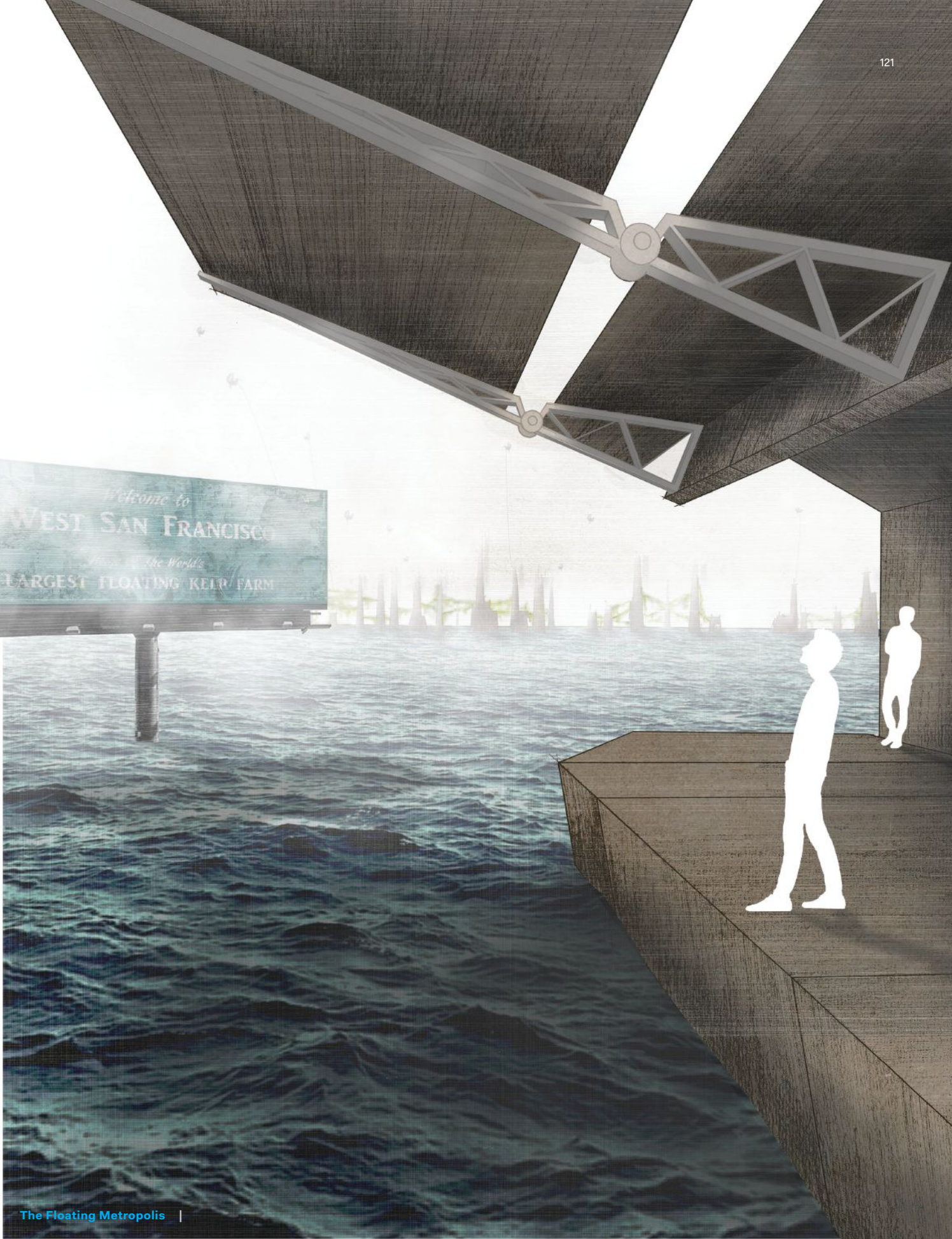
**Duration:** Fall 2017 seminar followed by Spring 2018 studio  
**Instructor:** Susannah Dickinson (associate professor, chair MS.Arch)  
**Students:** Luyi Huang, Morgan Oster, Kate Stuteville (submitted projects);

Chris Bernhardt, Connor Holden, Scott Hunter, Farhaan Khan, Andrew Kraut, Patricia Lui, Shannon McQuaid, Jeffrey Moser (independent project), Truc Nguyen, Ty Rodriguez, Kiuk Seong, Christopher Tansey, Nathaniel Wong

**Techniques/Tools:** collage; physical models (digital and analog formats); 3D modeling (Rhinoceros 3D and Grasshopper, with various plug-ins)



Welcome to  
**WEST SAN FRANCISCO**  
*Home of the World's*  
**LARGEST FLOATING KEEL FARM**







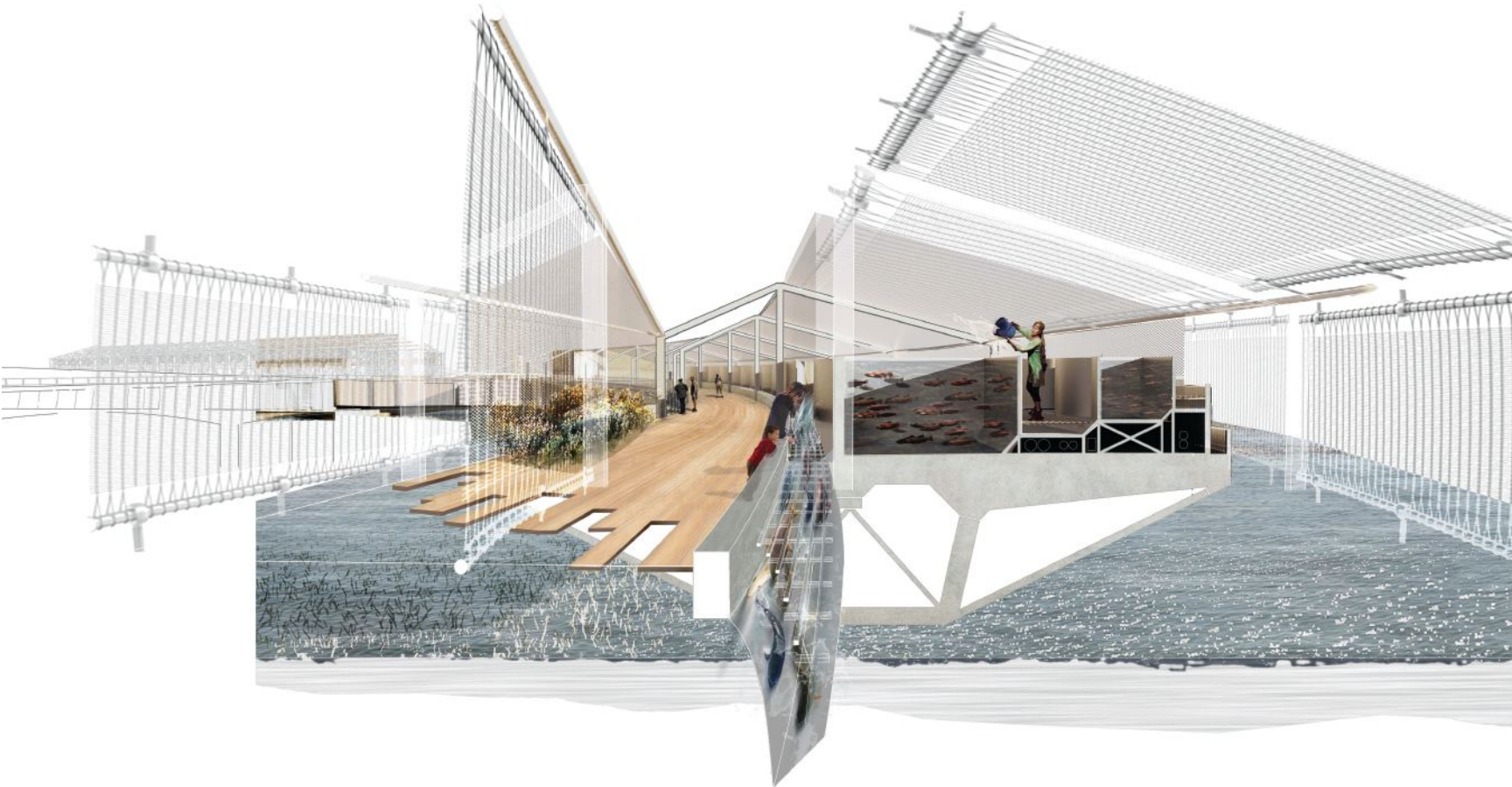
### The Floating Metropolis |

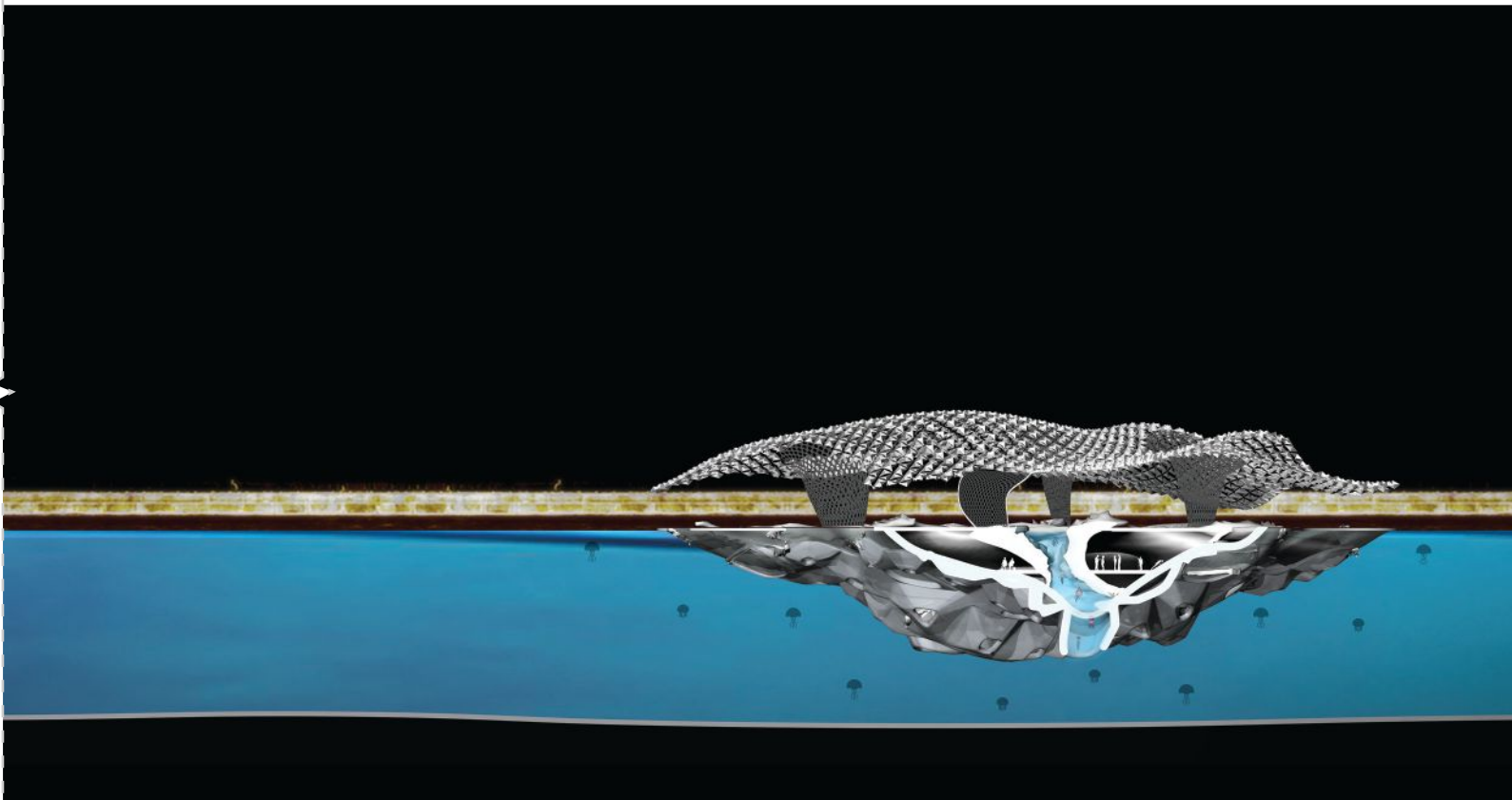
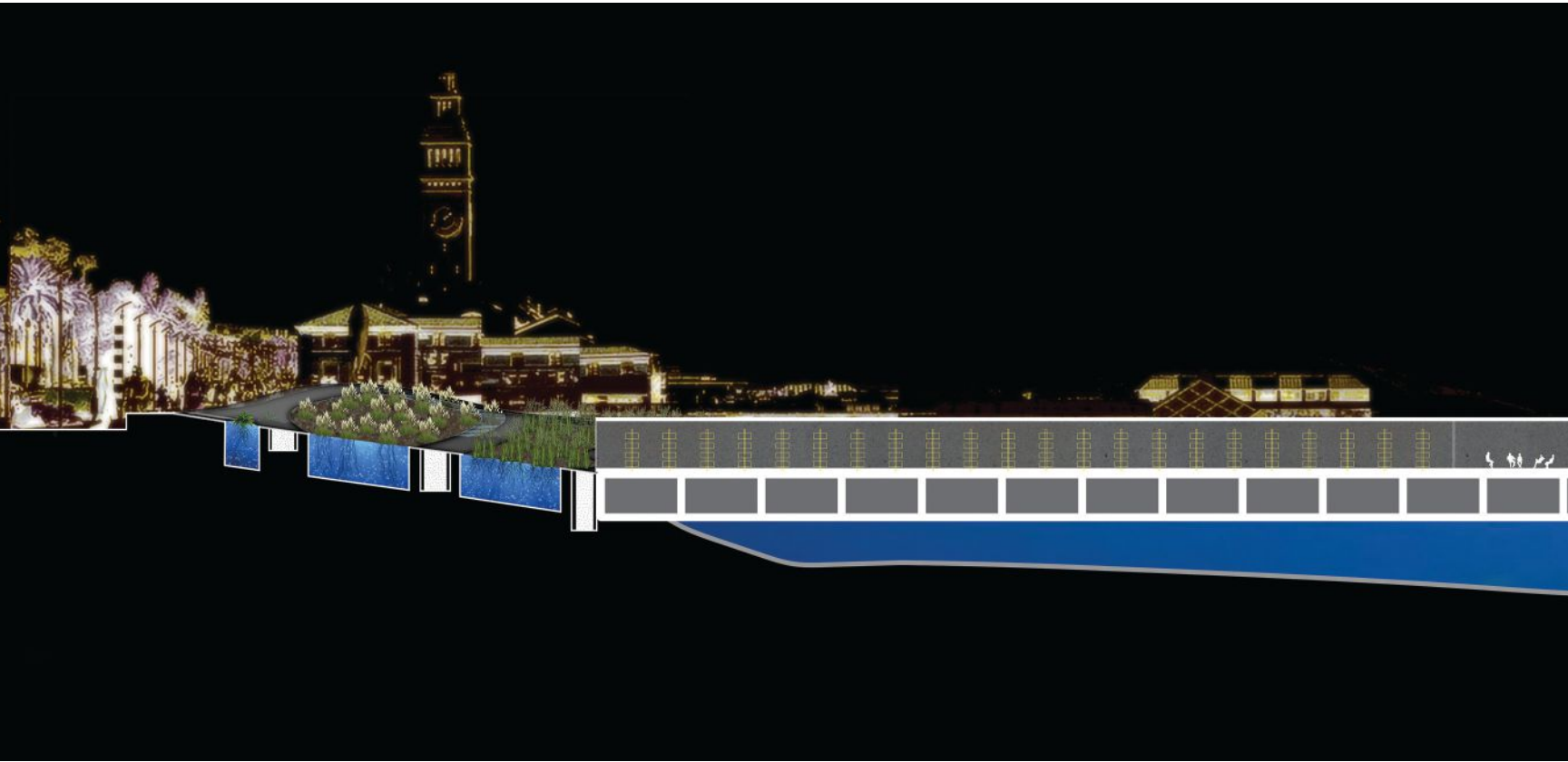
Kate Stuteville proposes a community for the year 2100 that takes advantage of an as-yet unexplored site: the surface of the rising sea itself. Stuteville anticipates developments in what will be half-submerged relics of industrial infrastructure that currently sit at the edge of San Francisco's land mass, with structures that rely on osmotic power—harvesting energy from the difference in pressure where salt and fresh water meet. Nets will harvest fresh water from the city's pervasive fog and provide infrastructure to hold the floating community together.



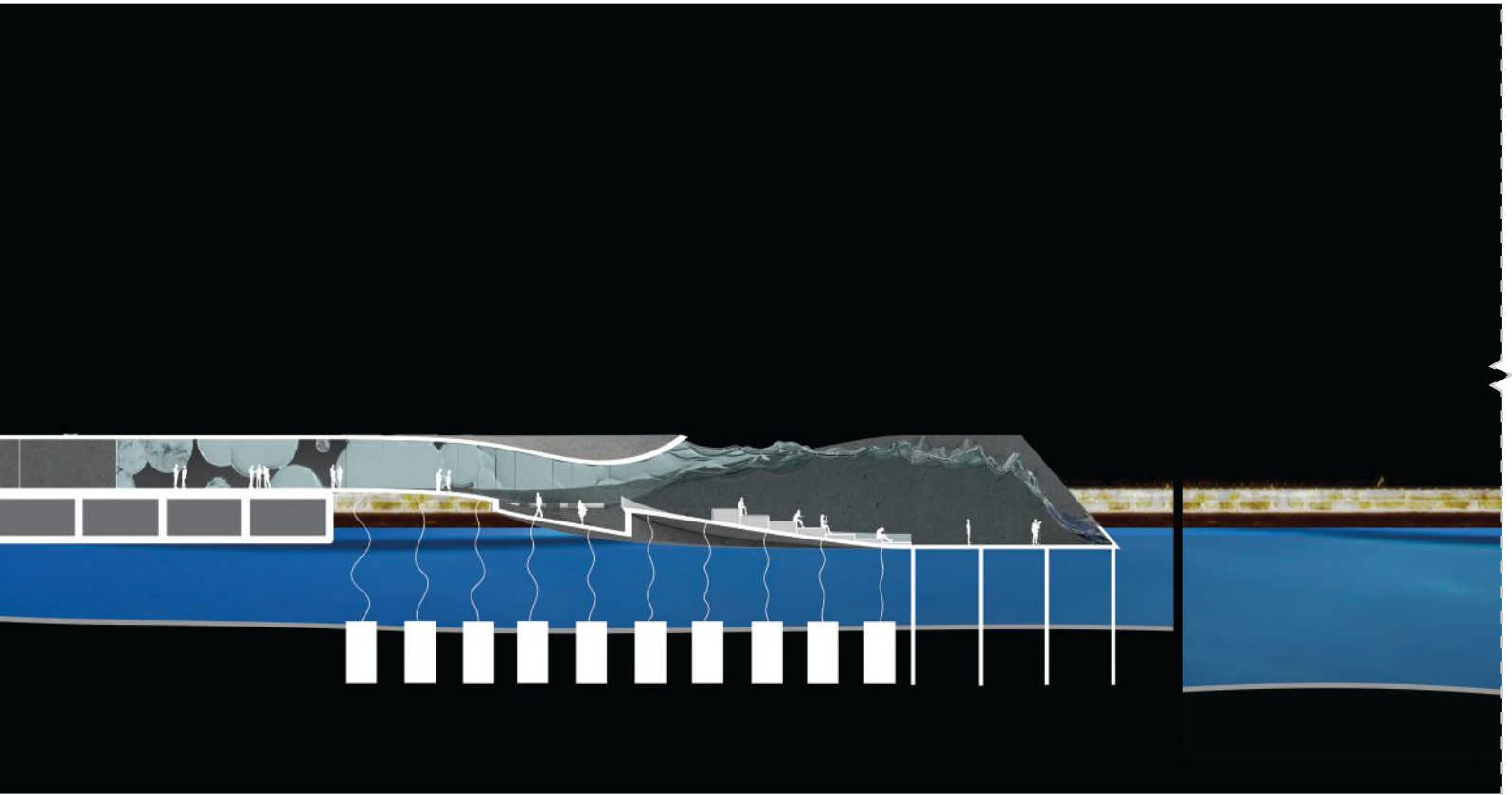
### Urban Aquatic Conservatory |

Morgan Oster looks to blur the boundary between water and land, while reversing damage to estuaries that have been harmed by overdevelopment and pollution: In Urban Aquatic Observatory, vegetation on the coastline takes the place of infill development and acts as both a sponge to absorb rising sea levels and a filter to mitigate contaminants. The addition of a wildlife research center and an urban fish hatchery seeks to educate residents about the surrounding habitats and the effects of climate change, as well as to help restore the populations of species that are now endangered as a result of human impacts on the landscape.









#### Soft Infrastructure |

Luyi Huang envisions a softer edge to the city of San Francisco, and her project explores extending infrastructure that can adjust to rising water levels in the Bay. This adaptable boundary would include monitoring and filtration systems to clean the water, and it would incorporate spaces for research and community programming to educate residents about both the marine habitat and the effects of climate change—turning a challenge for the city into an opportunity for engagement.

## A Home is Not a House (ARC695 Advanced Architectural Design: Integrative Studio)

University of Texas at Austin  
School of Architecture

**Studio Brief** | In pursuit of a new approach to medium-density housing, students in this third-year master's studio designed 20- to 24-unit complexes for a site in Austin, Texas. The students spent the first half of the studio studying existing housing typologies around the country, from micro-unit apartments to townhouses and detached single-family homes, before splitting into groups of two to design their own development.

**Investigation** | The high cost of housing and the diminishing availability of land to build on is a pressing problem in many American cities, including Austin, which has grown from 656,000 people in 2000 to nearly a million today. Too often, though, the solutions on offer are either impractical micro-apartments, looming high-rise blocks, or the pushing of residents further into the suburbs in search of affordable housing.

With Austin in the middle of rewriting its zoning code, Martin Hättasch, a lecturer at the University of Texas at Austin School of Architecture, decided to investigate the possibilities of a new type of medium-density housing, one that would fit into the increasingly crowded neighborhoods that ring downtown, and counteract the skyrocketing rents and land values that are pushing out longtime residents. “It was personal for me,” Hättasch says. “I live and teach in Austin, and anyone who’s been here for a few years or so has experienced some issues when it comes to housing.”

Hättasch has taught a version of this studio before, but this was the first time he told his students to focus on housing and to ignore mixed-use programs—because he says, too often, when mixed-use is an option, designers tend to design around the commercial side and overlook the housing side as boring. “When I was in school, no one talked about housing,” he says.

The results, he says, speak for themselves. The students created a series of projects that found ways to incorporate both density and privacy, while creating communal spaces inside the developments. In one, Urban Village, students designed housing units of varying sizes, some with multiple households in them, spaced around a network of courtyards. Another, Massif, riffs on contemporary row house design, while a third, Patios and Porches, utilizes a grid plan to create alternating “intermediate” spaces between private homes and the public realm.

The plans won praise from the judges, who found them a clever response to a pressing problem—medium-density housing—that too few architects are grappling with these days. “It’s unusual but doable,” said juror Eric Owen Moss, FAIA. “It occupies a place in the housing landscape that is underrepresented.”

### Studio Credits

**Course:** A Home is Not a House (ARC695 Advanced Architectural Design: Integrative Studio)  
**School:** University of Texas at Austin, School of Architecture  
**Level:** M.Arch. without pre-professional

degree, year three  
**Duration:** Spring 2018 semester  
**Instructor:** Martin Hättasch (lecturer)  
**Students:** Ian Beals, Jim Chen, Rebecca Gawron, Paul Hazelet, Krishnan Mistry, Allison Walvoord (submitted projects);

Emily Andrews, Tatiana Baglioni, Andre Boudreaux, Winn G. Chen, Kirsten Stray Gundersen, Bradley Jury, Dylan King, Stephanie McConnell, Amelia Mickelsen, Elijah Montez, Brenden Murphy, Sean Reynolds, Joseph Rocha,

Sydney Steadman, Ezra Wu  
**Techniques/Tools:** physical models (laser cutting, 3D printing, CNC milling); digital models (Rhinceros 3D); 2D drawing (AutoCAD, Autodesk Revit)

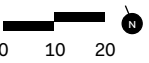




**Urban Village** |

Allison Walvoord and Krishnan Mistry designed a plan that challenges the notion that one household must occupy one building volume. In Urban Village, dense clusters of living spaces are arranged around shared spaces of different scales, but some units extend across multiple volumes while other larger volumes can hold multiple units. The scheme examines how the seemingly opposing ideas of individual expression and collective living can be embodied in a single complex.

Ground-Floor Plan



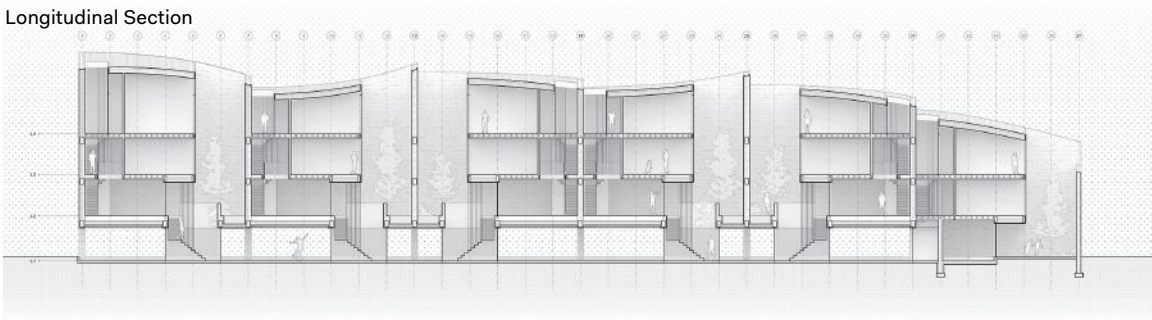


#### Massif |

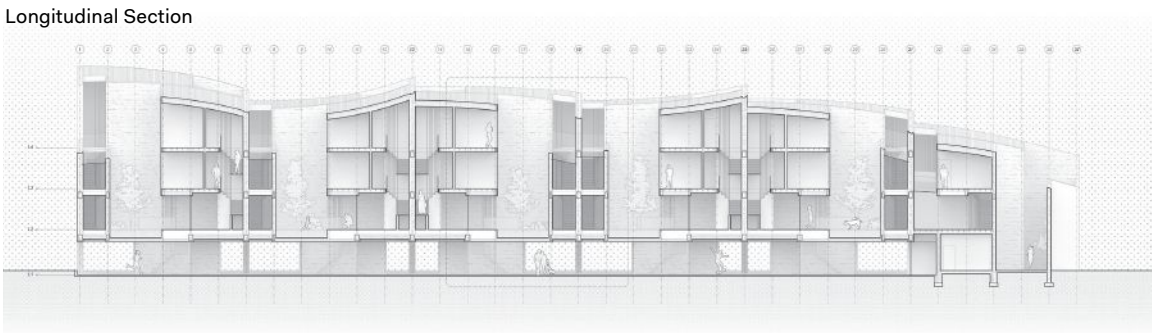
Jim Chen and Ian Beals named their complex after rock formations that are marked by faults and flexures—a nod to the fact that this design creates a dense block of housing that bridges residential and commercial areas. The design riffs on the row house typology, increasing density by using a system of shear walls that extend through the entire site in order to fit more units—three total—per bay. Each unit has its own street entrance, and a network of internal courtyards lightens the density of the project.



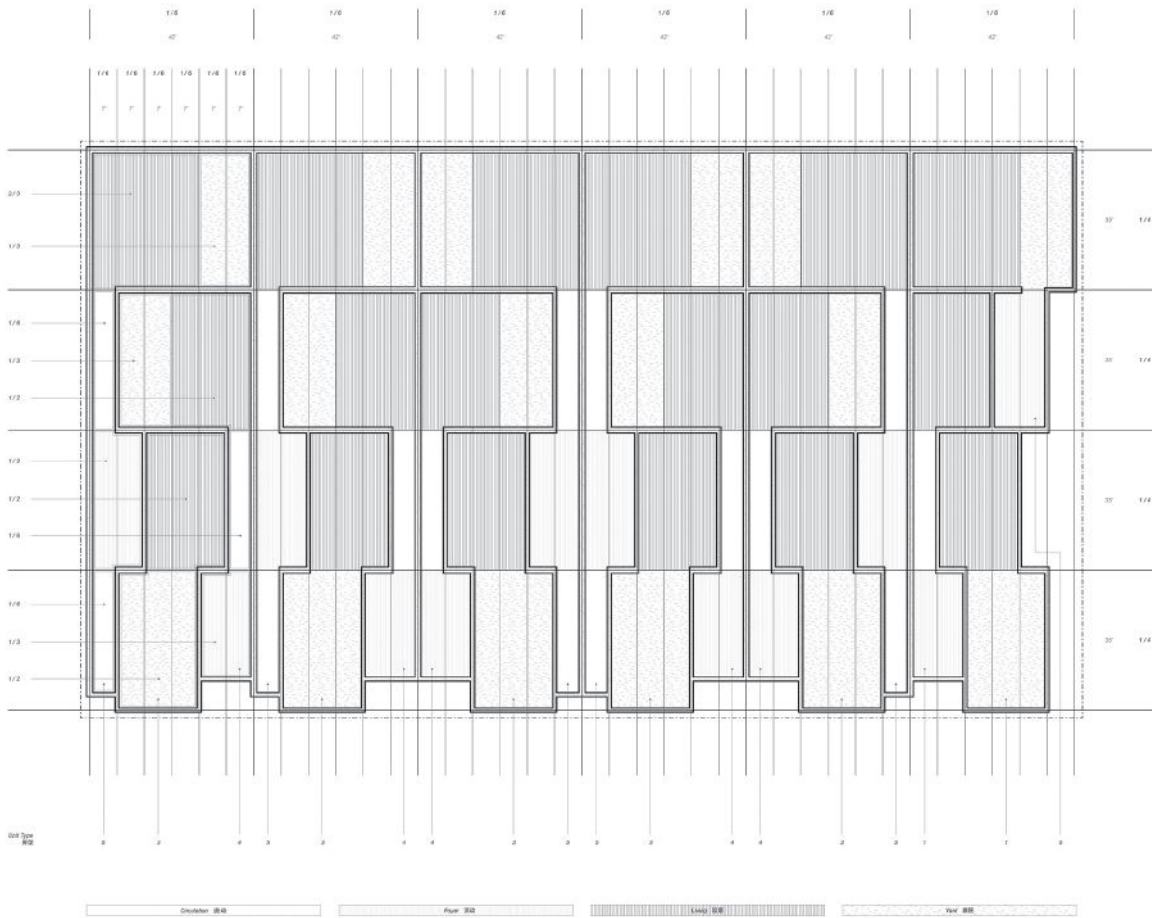
Longitudinal Section



Longitudinal Section



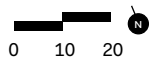
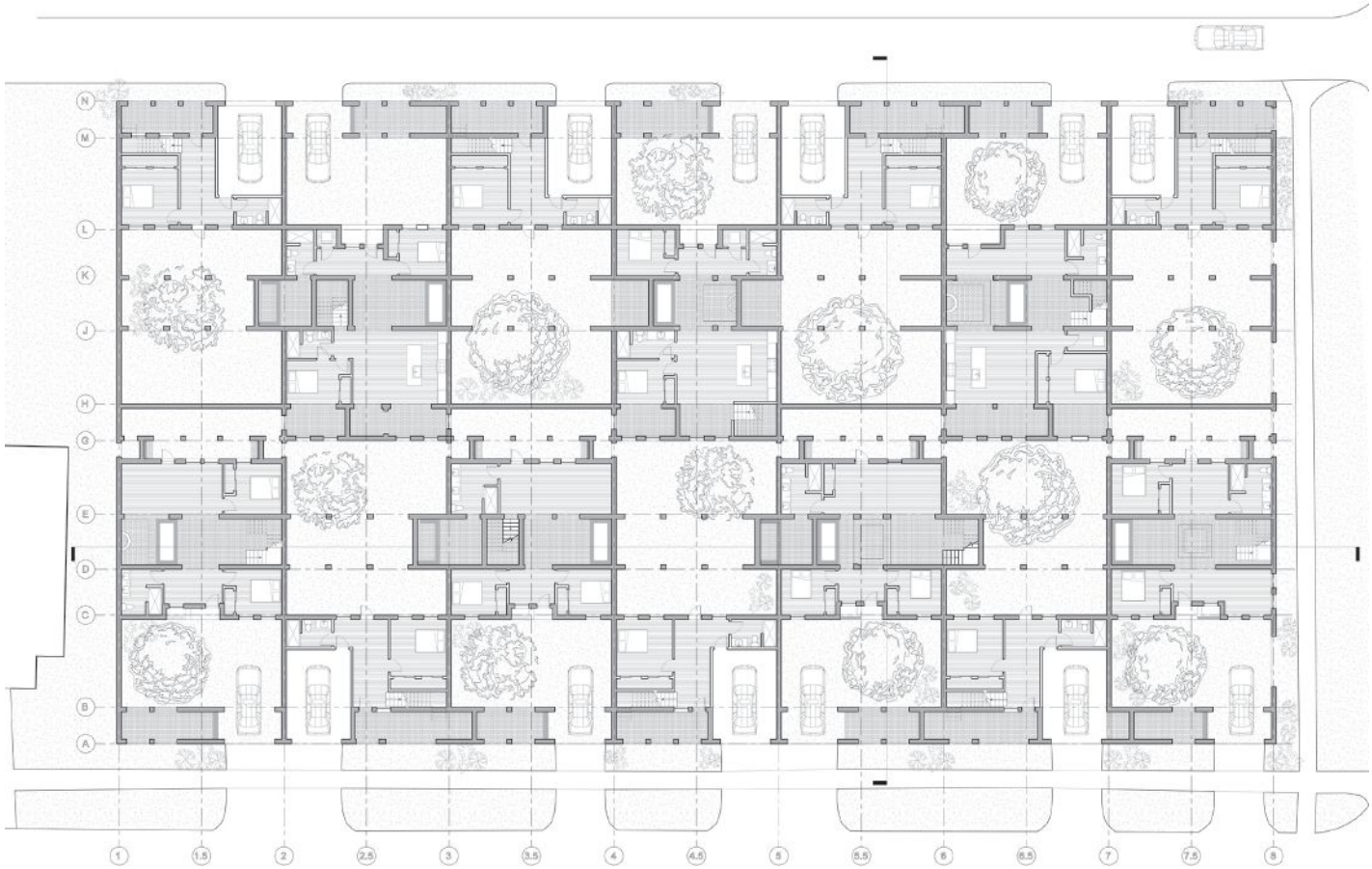
Diagram



Section



Ground-Floor Plan







#### Patios and Porches |

Paul Hazelet and Rebecca Gawron alternated enclosed living areas and open-air patios in an offset grid; interstitial spaces hold circulation and services. Load-bearing masonry structure contrasts with lush vegetation in the gardens, and the dispersed outdoor spaces ensure views of greenery from each unit and a higher ratio of windows per unit than a standard mid-density complex would allow.

## The New Grand Tour—A New Visitors Center for CERN

University of Michigan  
A. Alfred Taubman College of Architecture and  
Urban Planning

**Studio Brief** | Second-year master's students at the University of Michigan were asked to plan a visitor center for the European Organization for Nuclear Research, known by its French acronym CERN, in Switzerland, which is planning a major expansion and renovation. Supported by grants from CERN, the students first explored the conceptual aspects of design within the context of scientific research and made site visits to the CERN campus, outside Geneva, before developing their individual projects.

**Investigation** | With some 16,000 scientists, CERN is one of the largest and most famous facilities of its kind in the world, but until now it has not been noted for its architecture, let alone for being open to visitors from outside the academic world. But plans for a significant expansion in the campus size—including a new, 100-kilometer particle accelerator—and increased public attention after the discovery of the Higgs boson make well-designed reception facilities for tourists a must.

CERN already had a relationship with the University of Michigan and one of its associate professors, Matias del Campo: He had been an artist in residence in 2016, and after his tenure there was complete, the center asked him to devise a studio to develop ideas for the proposed expansion.

Such a project was perfect for architecture students, says del Campo, who ran the studio with assistant professor Sandra Manninger. Not only did the center offer a wide mandate for the design, but the nature of its research gave students a lot to chew on. “Architectural issues connect to issues in physics, because both disciplines are trying to understand space and matter,” del Campo says.

The professors and CERN encouraged the students to design the visitor center to be more than just an exhibit space and a gift shop. In one example, the students behind the Wanderweg project devised a network of trails that drew visitors far beyond the campus itself and into the mountains around it, below which run, invisible from the surface, the current and future particle colliders. All three of the submitted projects have an intricately patterned quality to them—the result of the studio’s focus on reflecting the sophisticated, mathematical nature of the campus and its uses.

The site visits proved crucial, and led to projects that spoke to a deep understanding of the needs and ideas underlying the CERN effort—“not the kind of things you see in student work,” said juror Eric Owen Moss, FAIA.

### Studio Credits

*Course:* The New Grand Tour—A New Visitors Center for CERN  
*School:* University of Michigan, A. Alfred Taubman College of Architecture and Urban Planning  
*Level:* M.Arch., with pre-professional

degree, year two  
*Duration:* 2017–2018 yearlong studio  
*Instructor:* Matias del Campo (associate professor); Sandra Manninger (assistant professor)  
*Students:* Westley Burger, Victor

Dionisio, Sung-Su Kim, Yongjoon Kim, Feier Lan, Xin Shen, Dongfang Xie, Nathan Wesseldyk, Shufan Zhang (submitted projects); Bob Allsop, Daniel Barrios, Ashish Bhandari, Kevin Bukowski, Stephanie Bunt, Benny Cruz,

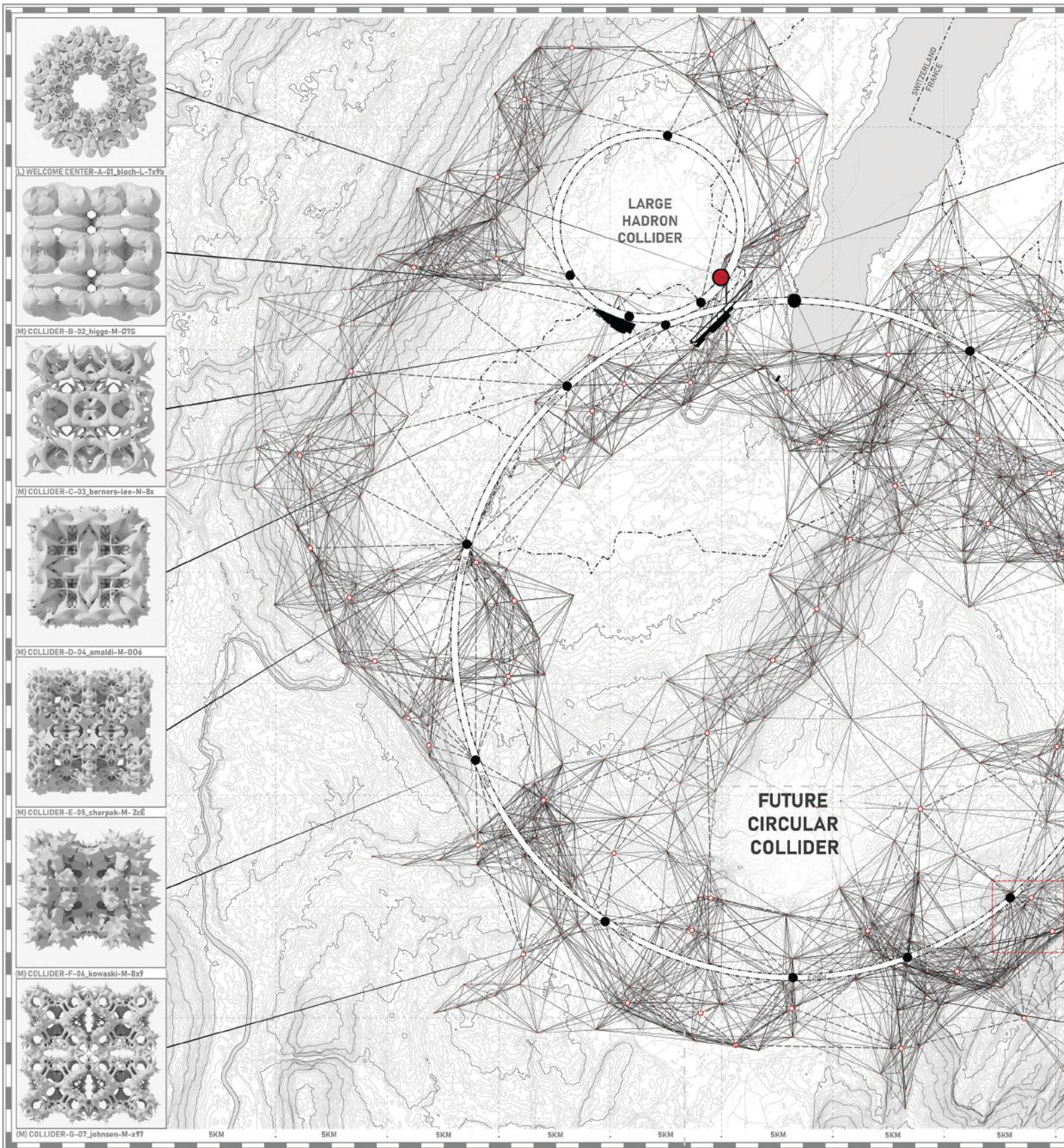
Allison Ford, Wei Wu  
*Techniques/Tools:* Autodesk Maya; Unity; Rhinoceros 3D; Grasshopper; CNC milling; 3D printing; laser-cutting



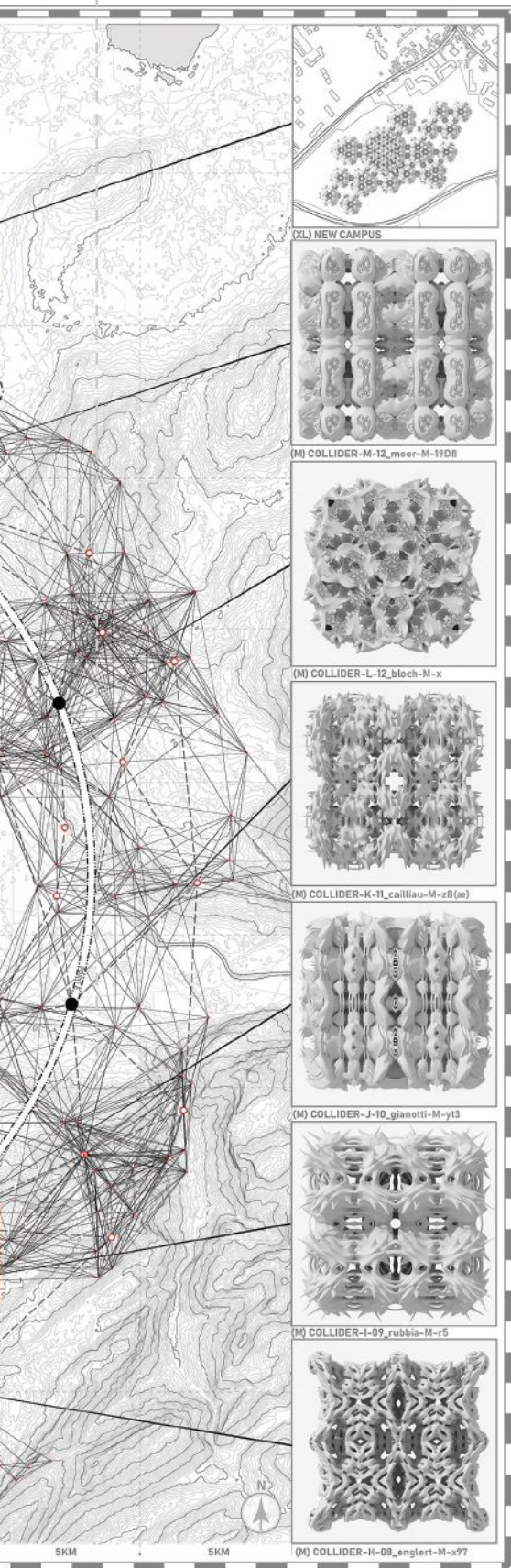




Site Plan Diagram



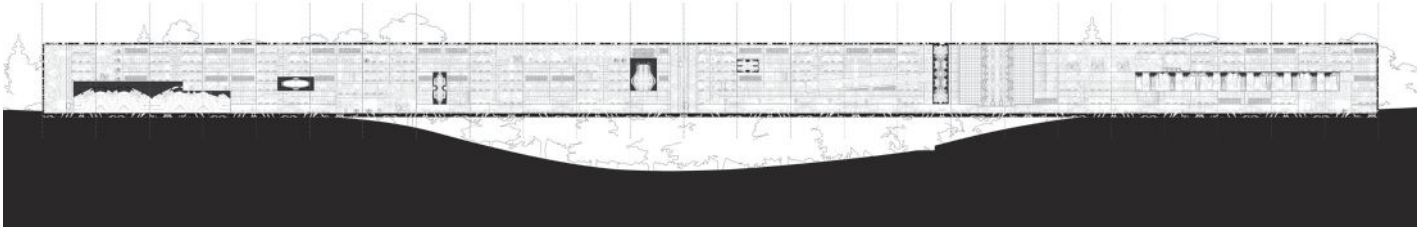




### Wanderweg |

Westley Burger, Feier Lan, and Dongfang Xie came to the conclusion that the best way for visitors to grasp the mission of CERN is to understand both the science that has come before and the natural forces that the research seeks to investigate. In Wanderweg, a central visitor center is the jumping-off point for a 100-kilometer trail around the Future Circular Collider, with additional pathways diverging from each of the 12 collider points beneath the ground. Along this path through the Alps, visitors also see the remnants of past experimental infrastructure, housed in mid-scale structures.

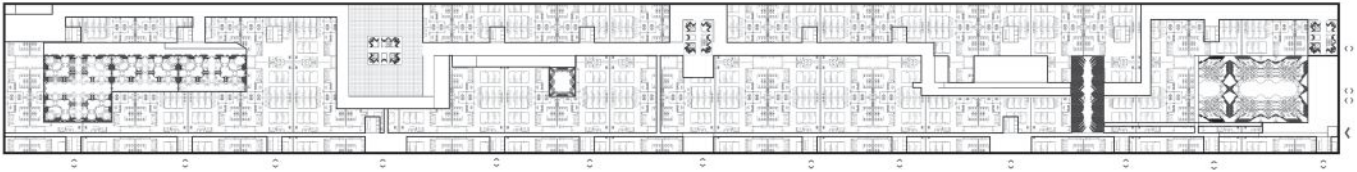
Section



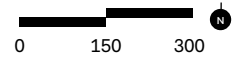
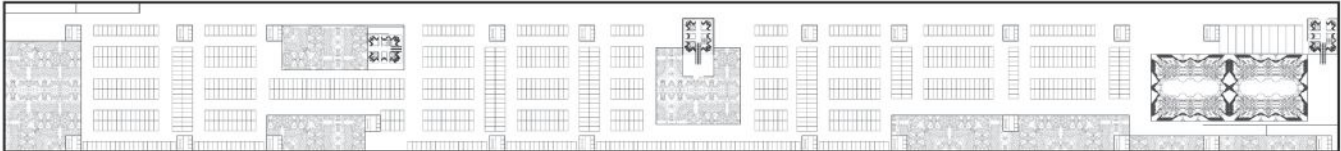
Third-Floor Plan



Second-Floor Plan



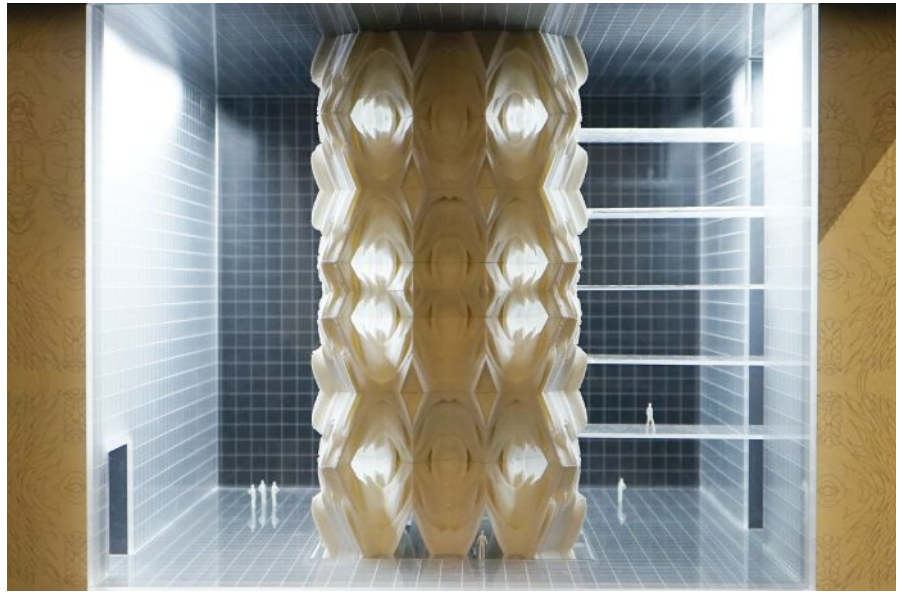
Ground-Floor Plan



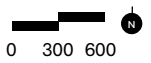
### Ominous Delineation: Precision and Ambiguity |

Victor Dionisio, Xin Shen, and Shufan Zhang created a systematized geometric language for the design of their visitor center, which they then translated into volumes. These complex objects sit within the simple and precise form of a low bar in the landscape. The building is designed to be both relatable and to evoke new and unfamiliar sensory experiences, making visitors think about their relationship to architecture.



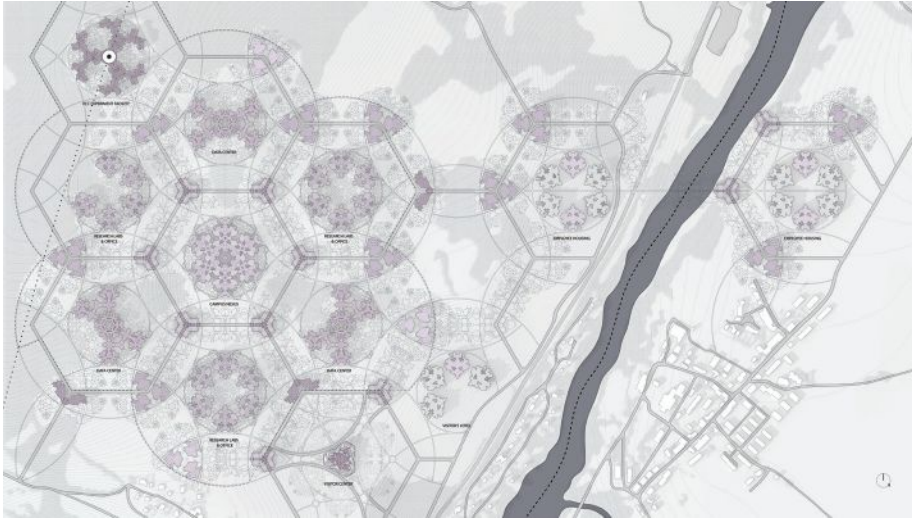


Site Plan



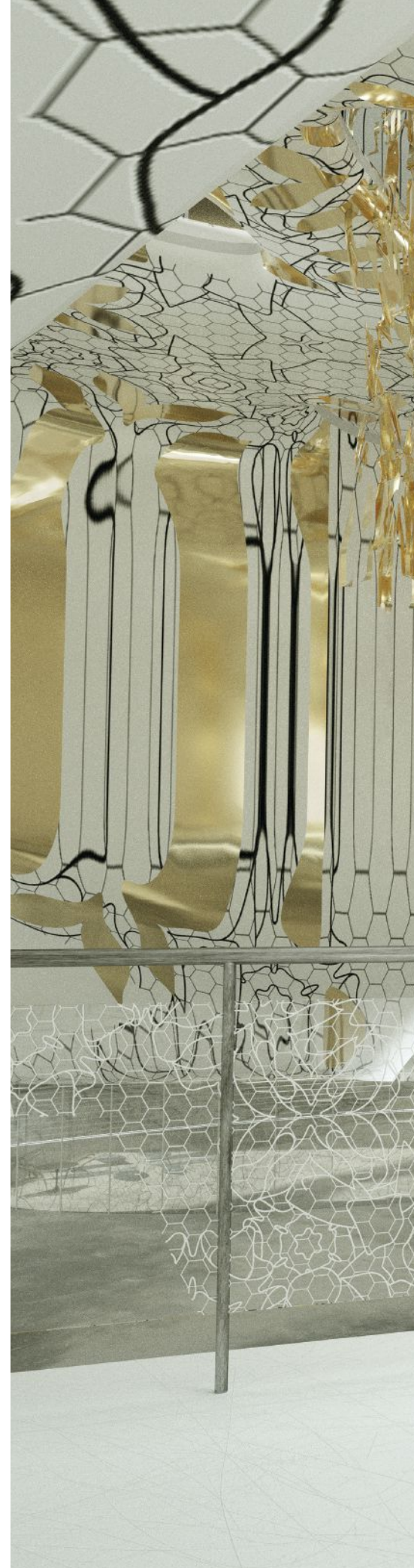


## Site Plan Diagram



### Ensemble Adorné: Finite Boundary and Infinite Patterns |

Sung-Su Kim, Yongjoon Kim, and Nathan Wesseldyk looked to pattern as a means of understanding and conveying how multiple complex systems can be overlaid to find moments of interaction. But that analysis of pattern resulted in more than just the decorative scheme that adorns their center. It also serves as the basis for an organizational logic: that the growth of a pattern in plan over time—both at an urban and building scale—can respond to the spatial needs of CERN while maintaining a sense of continuity through the campus.









## Coding Flux: In Pursuit of Resilient Urbanism in South Florida

University of Toronto  
John H. Daniels Faculty of Architecture,  
Landscape and Design

**Studio Brief** | Tackling the challenges of climate change in one of North America's most environmentally vulnerable regions, students did a deep dive into the geography, urban development, and building codes along Florida's Atlantic Coast, concluding with a set of long-term strategies for dealing with a changing climate, increasingly erratic weather, and rising sea levels.

**Investigation** | In 2010, four coastal counties in the Miami area united in a compact to address the growing threat of climate change. But, argues University of Toronto assistant professor Fadi Masoud, they're stuck using outdated zoning codes that assume a static environment and offer few checks on development.

"The landscape there is dynamic, but the planning is very status quo," he said. "Why isn't there a better way to think about how the landscape affects where you can build, and how that changes over time?"

Working closely with government planners in Broward County, north of Miami, Masoud charged his students with a three-part task: create a dynamic GIS (geographic information system) map of the region to understand where rising water levels will have the most impact; study the current zoning tools and their limits, interviewing county officials during a weeklong visit to the area; and finally, develop a design response.

The responses, which the students presented to Broward County representatives who visited Toronto, ranged from a "freshwater credit" system that incentivizes residents to capture excess rainwater in cisterns on their property to a "flux" zoning code that changes as rising sea levels impact land-use patterns around the county. Yet another proposal considers the county's western border, which abuts the Everglades wetlands, more as an inland "coast," with recreational and tourism possibilities, and less as a site solely for real estate development, which might leave the area more vulnerable to sea level rise. Juror Jennifer Yoos, FAIA, lauded the students' approach to "rethinking how these design processes should be done."

This was the fourth time Masoud has led a hands-on, pragmatic studio focused on South Florida, and Broward County officials say it was the first time their office had worked with such a studio on planning ideas. They say they welcomed the outside insight, and have begun to incorporate some of the students' ideas, like flux zoning, into their long-range planning.

Masoud chalks up the success to the intense site visits and the close cooperation with county officials. "I continue to be surprised at how important it is to actually meet the people in charge, and see that they are just as excited to see what an academic design studio can do."

### Studio Credits

*Course:* Coding Flux: In Pursuit of Resilient Urbanism in South Florida  
*School:* University of Toronto, John H. Daniels Faculty of Architecture, Landscape and Design  
*Level:* M.Arch. without pre-professional degree, year three; Master of

Landscape Architecture, year three; Master of Urban Design, year three  
*Duration:* Fall 2017 semester  
*Instructors:* Fadi Masoud (coordinator, assistant professor), Elise Shelley (assistant professor)  
*Students:* Chaoyi Cui, Marianne

Lafontaine-Chicha, Meikang Li, Niloufar Makaremi, Leslie Norris, Natalie Schiabel, Qiwei Song (submitted projects); Zainab Al Rawi, Meng Bao, Chukun Chen, Mengqi Dai, Jessica Guinto, Tania Hlavenka, Joshua Kirk, Alexandra Lazaervski, Ning Lin, Aidan

Loweth, Carlos Portillo, Rayna Syed  
*Techniques/Tools:* animated analytics (GIS, Adobe After Effects, CNC milling); codification workshop (Adobe Creative Suite, After Effects, Rhinoceros 3D); design strategies (Rhinoceros 3D, Adobe Creative Suite, After Effects)



Primary Via



Secondary Via



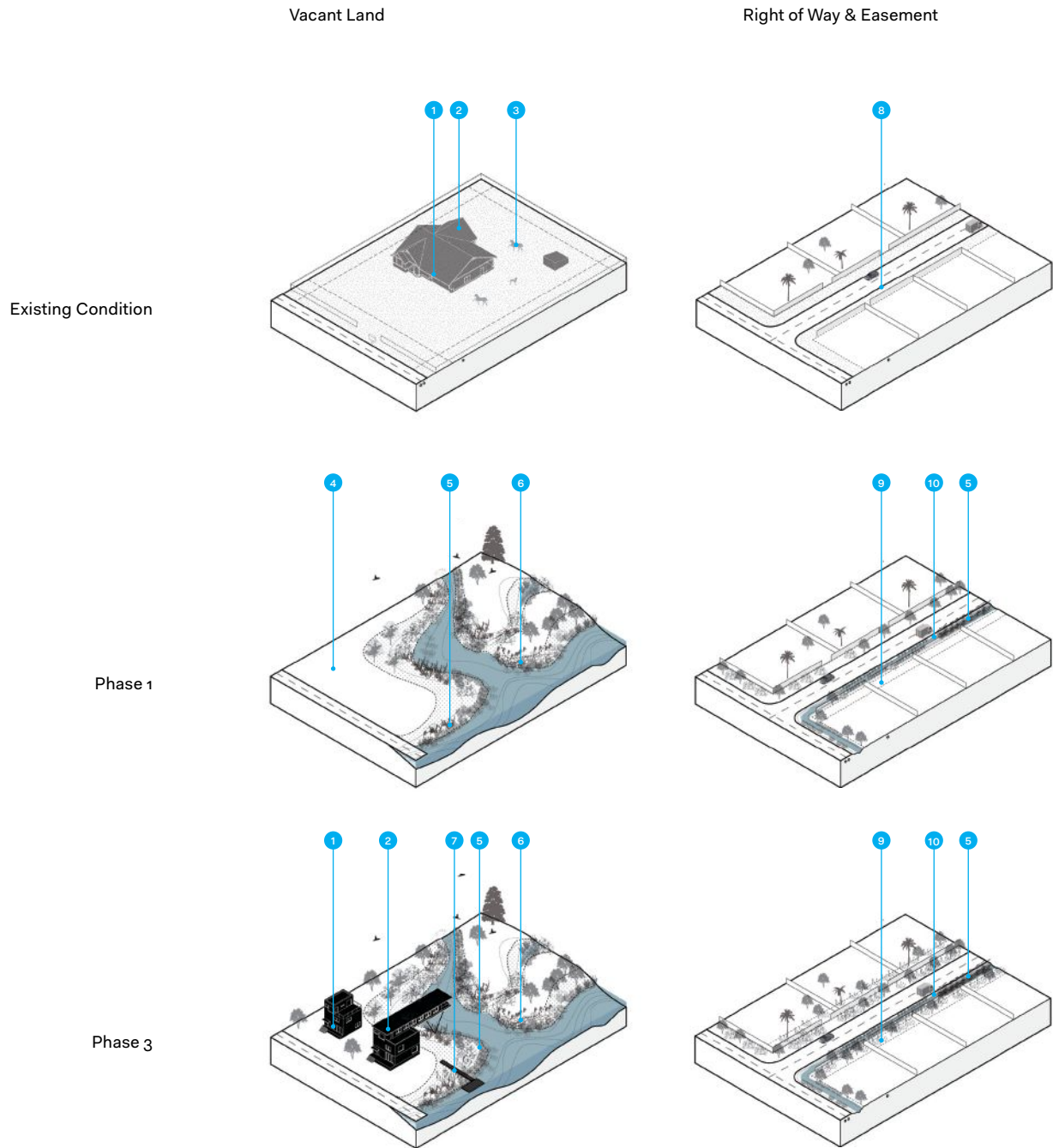
Tertiary Via



**The Via Network**

Marianne Lafontaine-Chicha and Niloufar Makaremi address the sunny day flood phenomenon in South Florida by envisioning new infrastructure for Ft. Lauderdale. These floods are caused by high tides that are only getting worse: A University of Miami study found that such flooding has increased 400 percent since 2006. A proposed network of "Vias"—a cross between a street and a canal—would be able to mitigate floodwaters during tidal floods, as well as create an alternative transit network, add green space and vegetation canopies, and provide additional evacuation routes in case of storms.

- 1. Existing street level
- 2. Projected water table level
- 3. Current water table level



**The Drainage Filter for the Everglades: Imagining a New Basin S-8** |

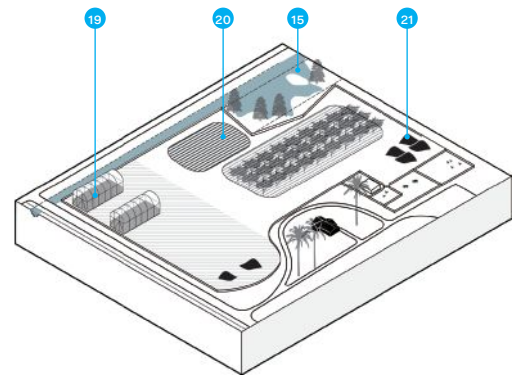
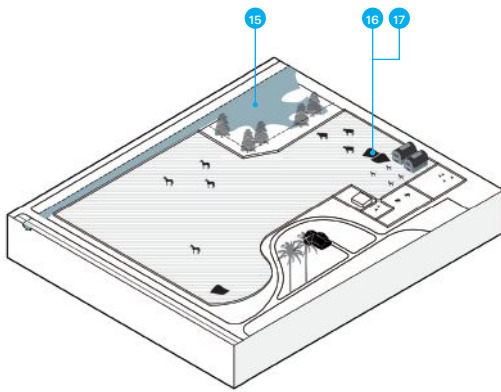
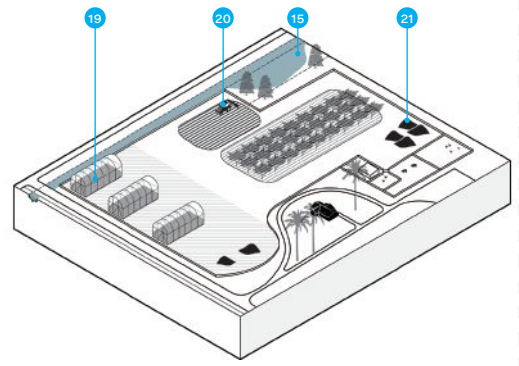
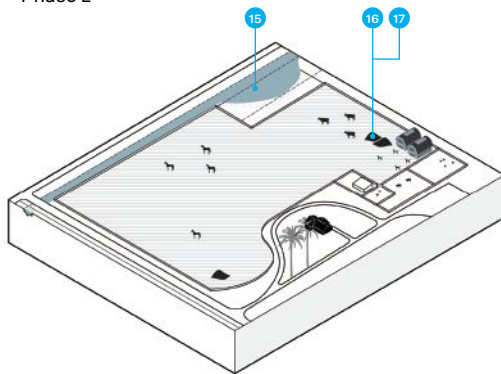
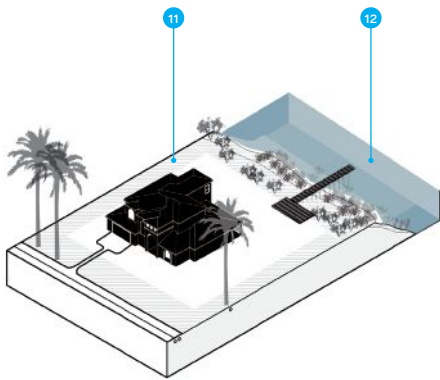
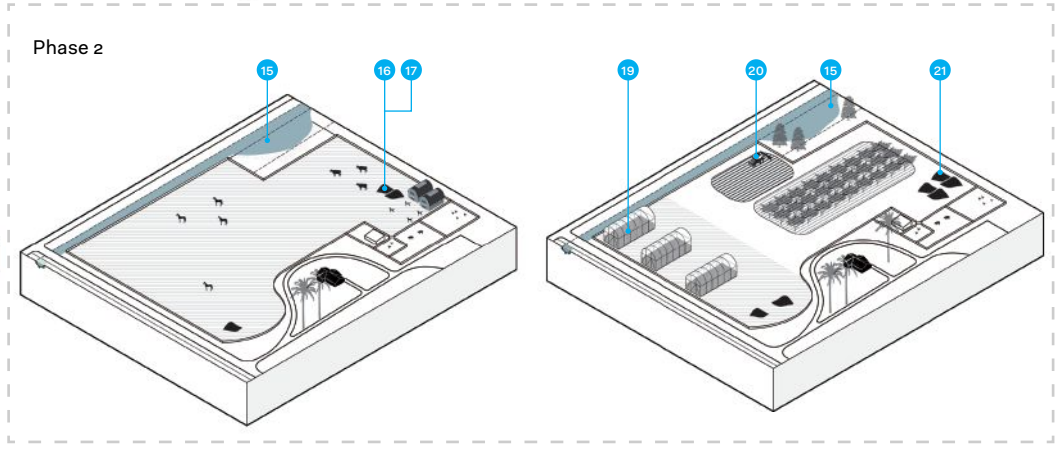
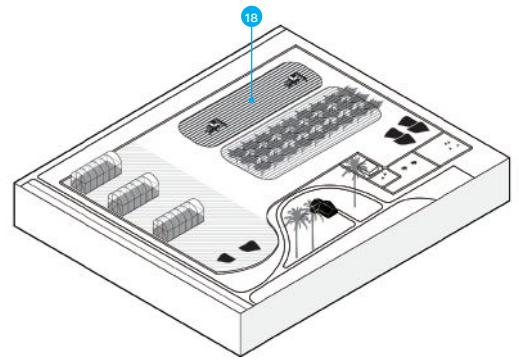
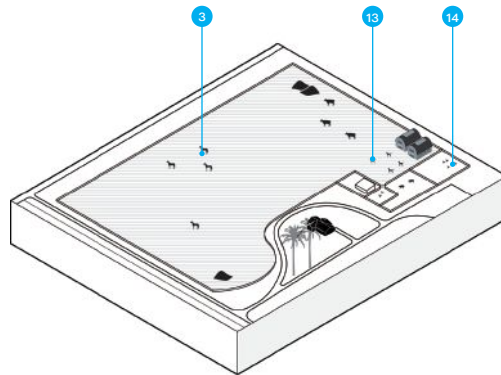
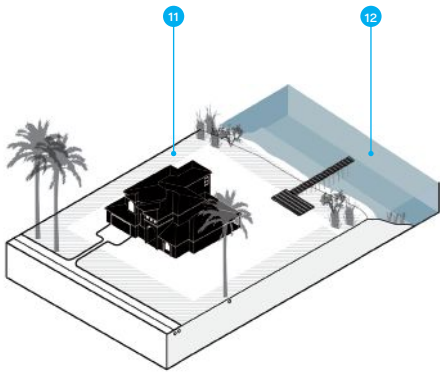
Qiwei Song, Meikang Li, and Chaoyi Cui have envisioned a way to make suburban and exurban communities a major factor in the restoration of the Everglades, by creating a toolkit of topographic and phytoremediation strategies for manmade infrastructure to filter pollution out of stormwater runoff. By rethinking the grading and vegetation of open spaces, as well as encouraging voluntary participation from private landowners, the students envision a network of channels—bringing more water into urban areas—that would make a functional green landscape, lengthening the distance between sources of runoff and the Everglades, and naturally filtering the water along the way.



PUD (Public Development Area)

Ranch

Nursery

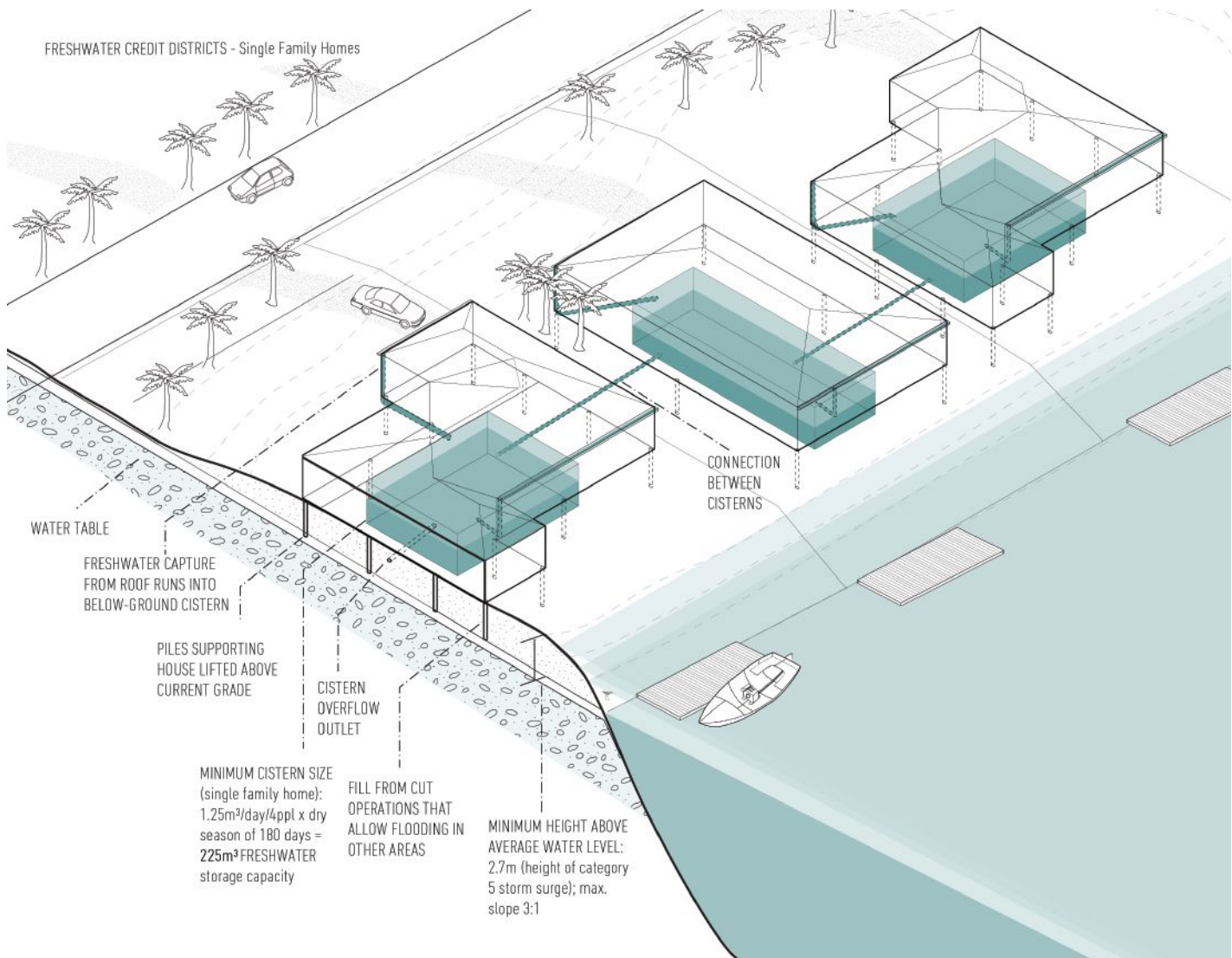


- 1. Coverage
- 2. Residential use
- 3. Horse, cattle, sheep, goat
- 4. Vacant residential
- 5. Planting strip
- 6. Wetland
- 7. Dock

- 8. Permeable public right of way
- 9. Easement
- 10. Filtration right of way
- 11. Minimum perimeter landscape
- 12. Body of water
- 13. Dog, cat
- 14. Fowl, rabbit

- 15. Filtration strip
- 16. Forage
- 17. Waste
- 18. Pesticide
- 19. Greenhouse
- 20. Non-mechanical agriculture
- 21. Fertilizer

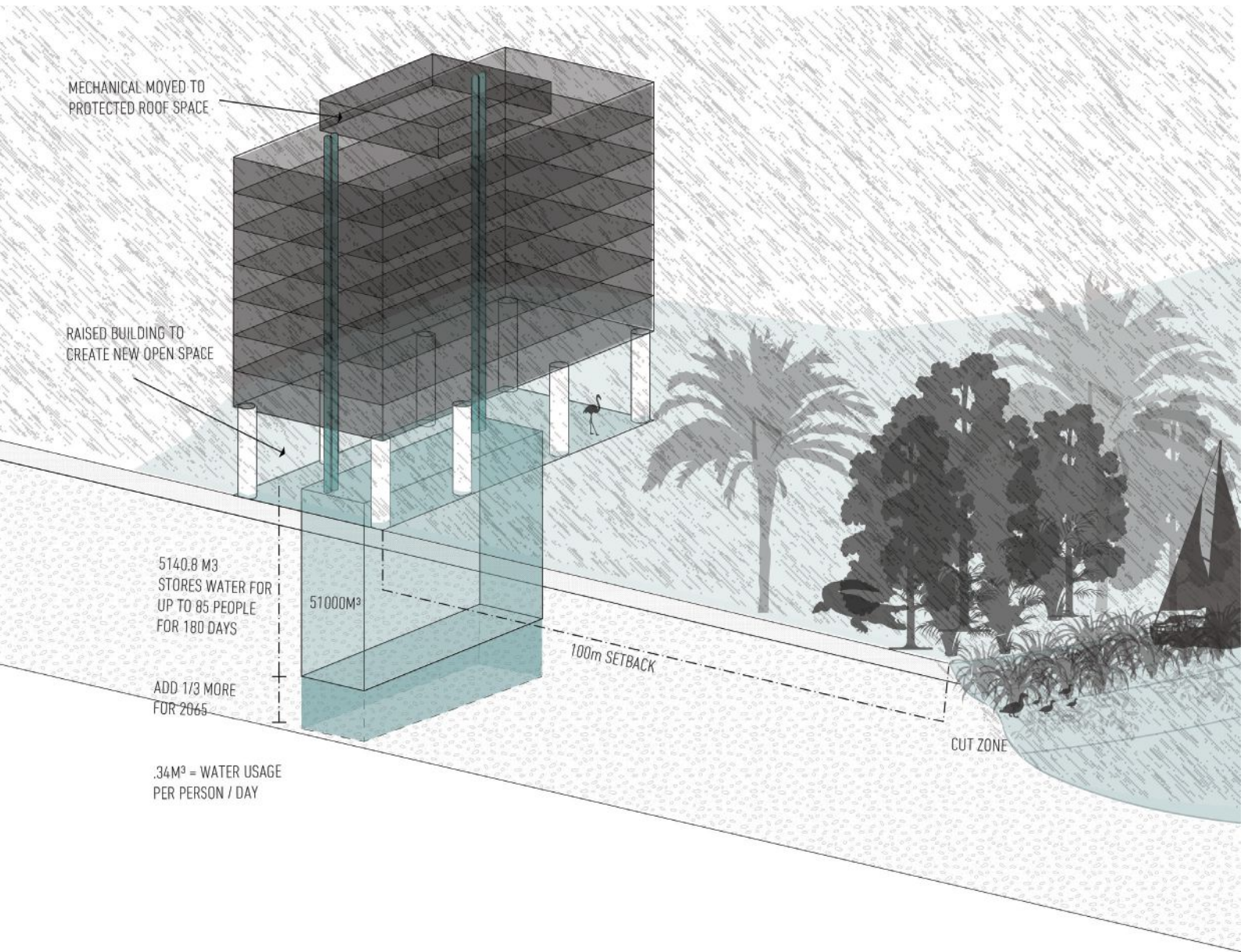
## Diagram of Freshwater Districts with Single-Family Houses

**Buffer + Fill: Freshwater Credit District Plan**

Leslie Norris and Natalie Schiabel address freshwater scarcity in South Florida with their plan to employ cut-and-fill techniques that would both protect property from flooding and create a network of freshwater storage basins. A series of berms would redirect water to floodable parkland from residential areas prone to flooding during a Category 3 hurricane. Within the berms, a series of networked storage tanks create neighborhood-scaled infrastructure that could manage, dispense, credit, and exchange the fresh water—turning the hazard of too much rain from increasingly frequent storms into a benefit for the community.



Diagram of New Protected/Shaded Open Space and Freshwater Reservoir



## The Architectonics of Music, Advanced Studio VI

Columbia University  
Graduate School of Architecture, Planning  
and Preservation

**Studio Brief** | Twelve students, divided into teams of two, were asked to design a music performance and research center to celebrate the work of the French-American composer Edgard Varèse, using a brief selection of his music as inspiration. After an initial period of investigation into the relationship between music and architecture, each team designed large-scale study models as their final project.

**Investigation** | Edgard Varèse was a leading figure in the early 20th century musical avant-garde, and is considered one of the forefathers of electronic music. Born in Paris, he spent most of his life in New York, on Sullivan Street in Lower Manhattan. He also had a close affiliation with architecture—in 1936, the Dutch corporation Philips chose him to write a piece of music for its Le Corbusier–designed pavilion at the 1958 Brussels World’s Fair.

Varèse’s relationship with architecture made it easy for Steven Holl, FAIA, who is a tenured professor of architecture at Columbia University’s Graduate School of Architecture, Planning and Preservation, to select him and his music as the focus of a recent course in his popular Architectonics of Music studio, offered to first-year masters in architecture students. “Music is an engulfing experience,” Holl says, explaining why he created the studio. “You can turn away from painting or sculpture, but music engulfs you—just like architecture.”

Holl began teaching the Architectonics of Music intermittently in 1986, and has co-taught it every year since 2010 with adjunct assistant professor Dimitra Tsachrelia, ASSOC. AIA, who is also an associate at Steven Holl Architects, and married to Holl. Each studio focuses on a different composer, though the structure of the class remains the same.

This year, the students were asked to design their venues for a specific site: a vacant lot not far from Varèse’s home on Sullivan Street. Beyond programmatic requirements for an archive, library, performance space, and support facilities, Holl had the students choose a portion of Varèse’s music as inspiration. For example, drawing on Varèse’s incorporation of “found objects” in the form of everyday sounds into his music, one team used abstracted versions of household objects like soda cans and light bulbs to inform how they shaped balconies, elevators, and other features of the interiors.

The judges praised Holl and his studio for de-centering the traditional approach to academic design exercises. “Studios that take students out of what they think architecture is ... are really important,” said Jennifer Yoos, FAIA.

### Studio Credits

*Course:* The Architectonics of Music, Advanced Studio VI  
*School:* Columbia University, Graduate School of Architecture, Planning and Preservation  
*Level:* M.Arch., with pre-professional degree, year one; M.S. Advanced Architectural Design (AAD) with

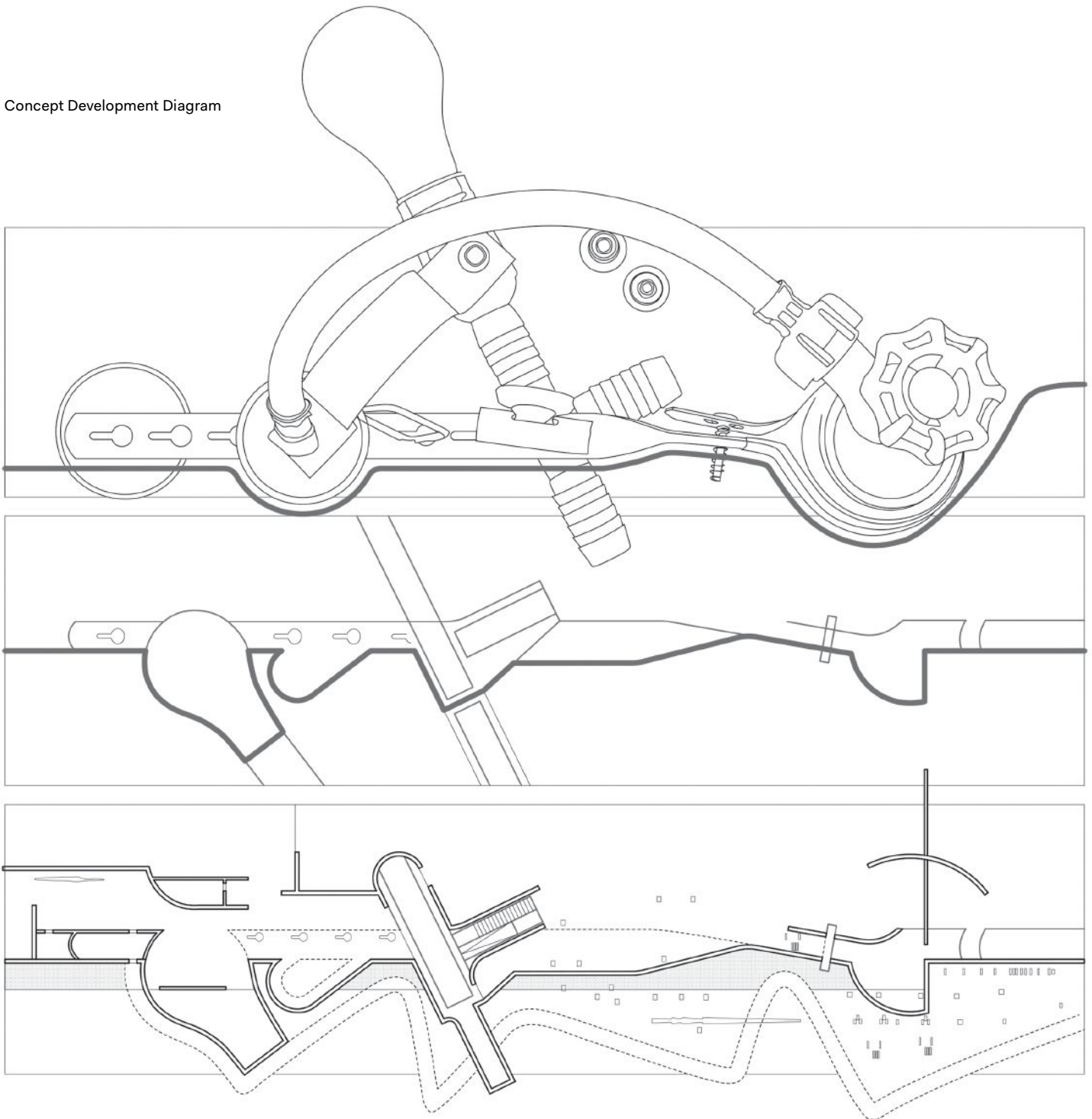
pre-professional degree, one-year program; M.Arch, year three (Columbia University joins their M.Arch. third-year students with the AAD students)  
*Duration:* Spring 2018 semester  
*Instructor:* Steven Holl, FAIA (tenured professor of architecture); Dimitra Tsachrelia, ASSOC. AIA (adjunct assistant

professor of architecture); Raphael Mostel (composer, studio adviser)  
*Students:* Kutay Biberoglu, Xiaodan Ma, Ziqing Nie, Lirong Tan, Jian Zheng, Zhenggu Zhou (submitted projects); Yu Cao, Hongsuk Lee, Suliuyi Li, Nika Mo, Konrad Ka Chin Tai, Haoxiang Wei  
*Techniques/Tools:* advanced physical

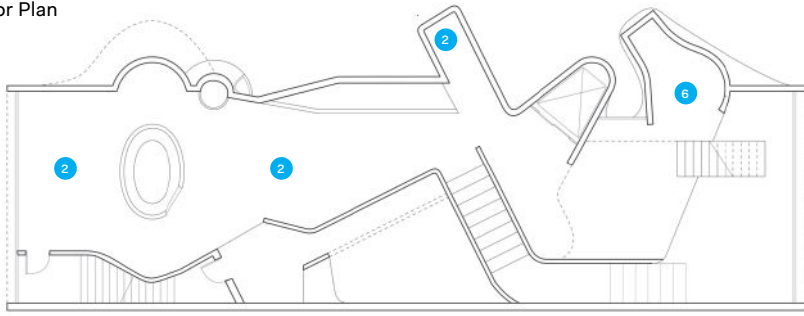
model making (CNC milling, 3D printing and casting); advanced 3D modeling and rendering (V-Ray for Rhino); video editing (Adobe Premiere Pro); photography; writing



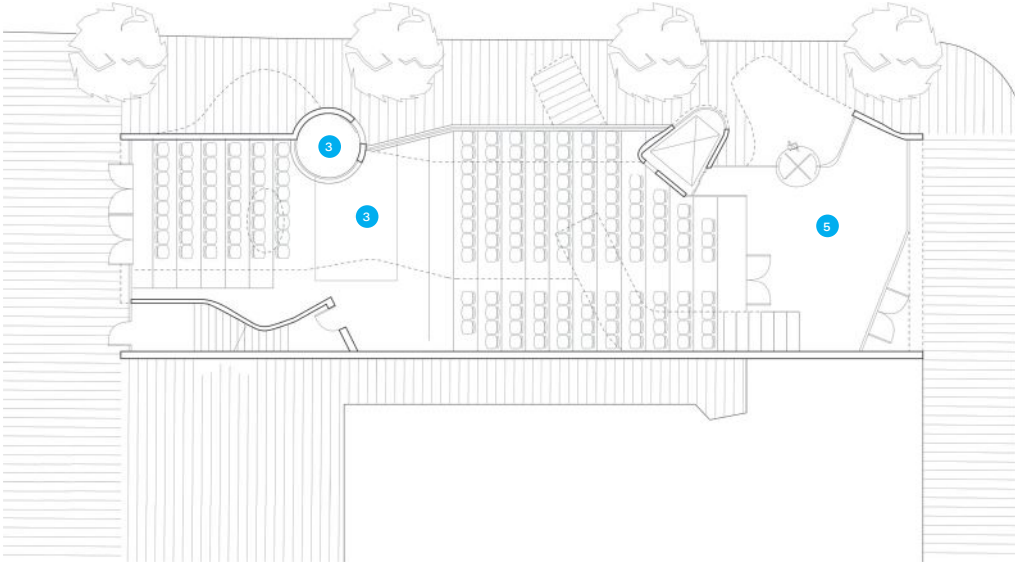
Concept Development Diagram



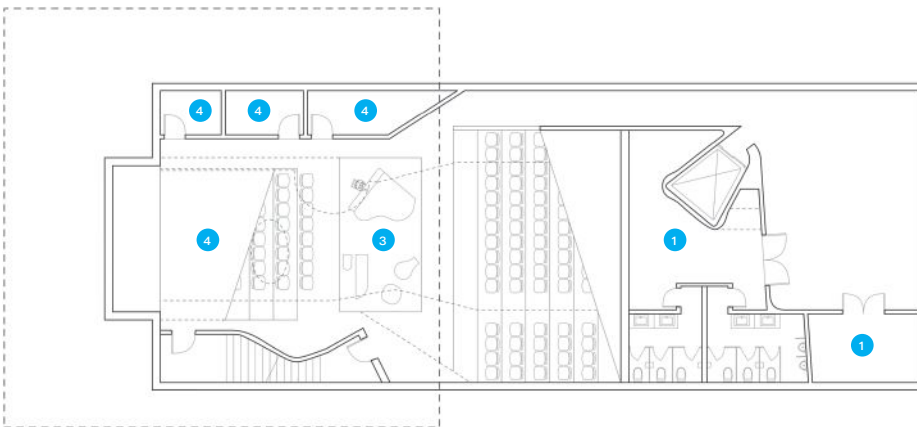
Second-Floor Plan



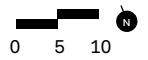
Ground-Floor Plan



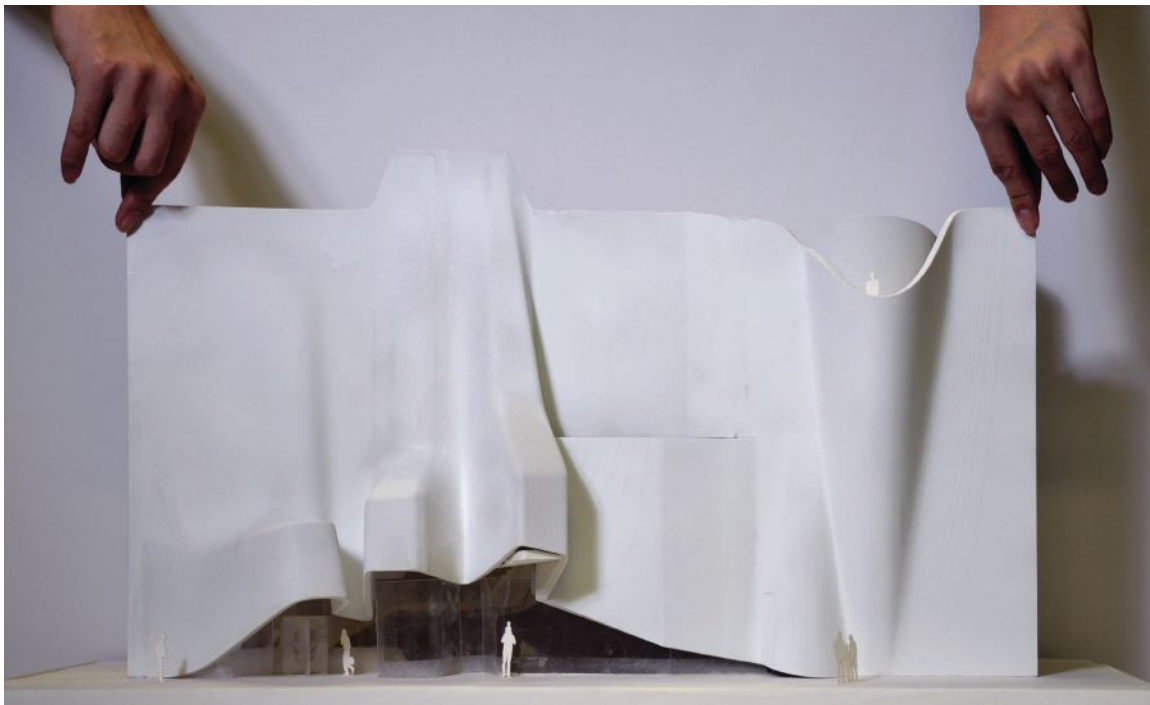
Lower-Level Plan



- 1. Varèse archives room
- 2. Gallery
- 3. Music hall
- 4. Green room
- 5. Lobby and information
- 6. Audio booth



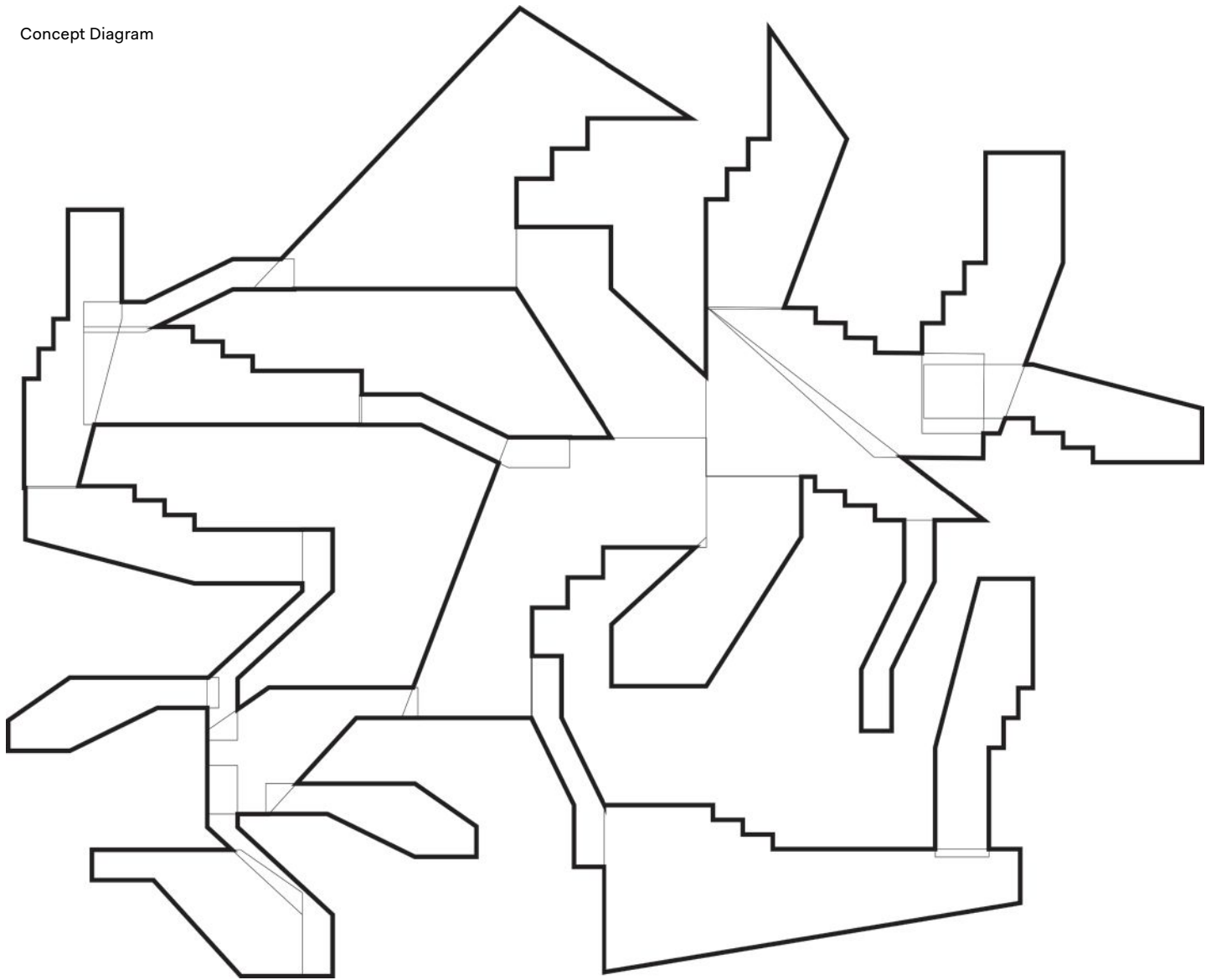




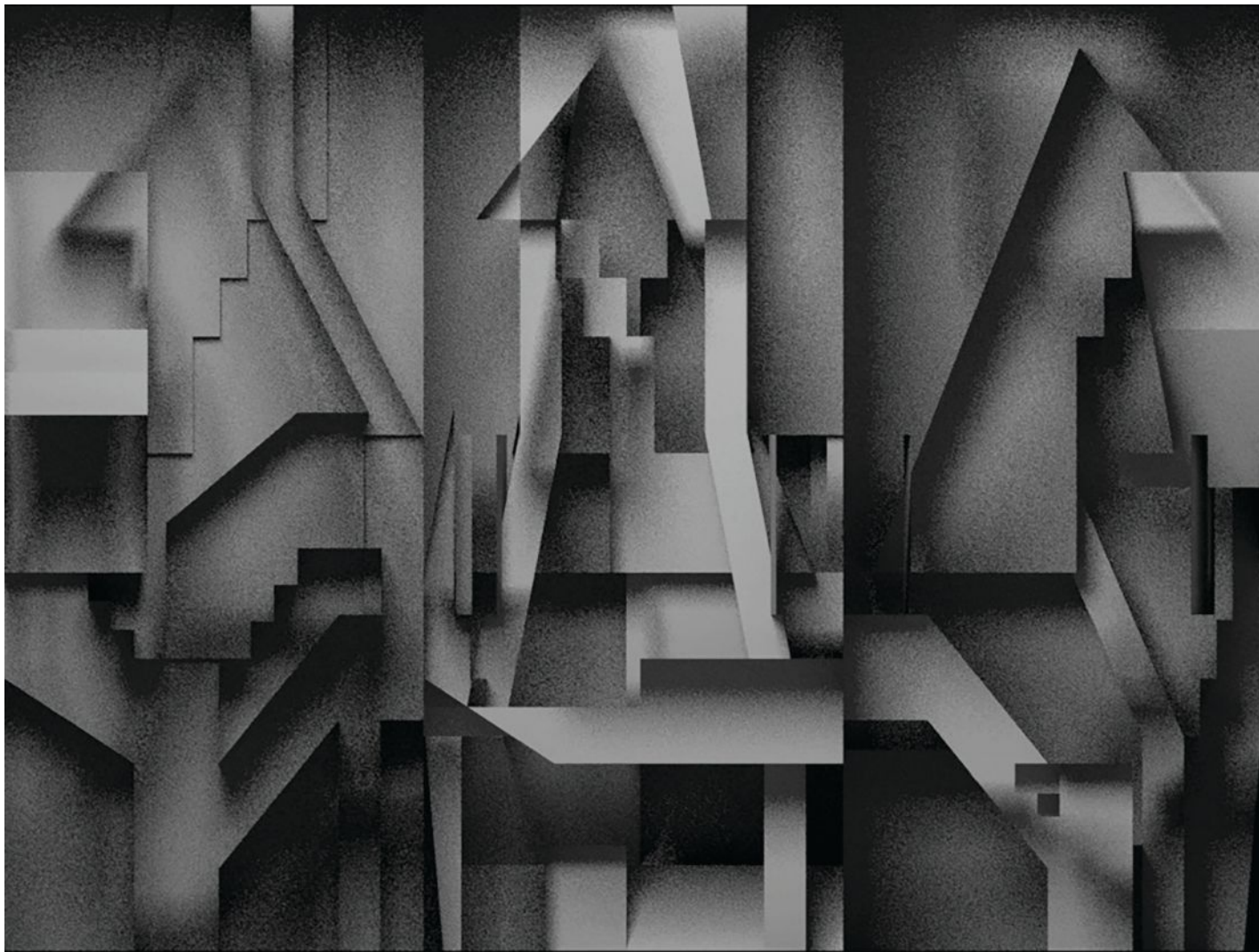
### Edgard Varèse Music Center—Found Objects |

Lirong Tan and Xiaodan Ma looked to Varèse's incorporation of sounds recorded in the street into his musical compositions as inspiration for their design, using a collection of ordinary objects—including a soda can, a light bulb, and other found items—to shape the spaces and volumes within the building. A curtainlike cladding envelops and organizes these spaces, and creates a soft edge between city and building.

Concept Diagram

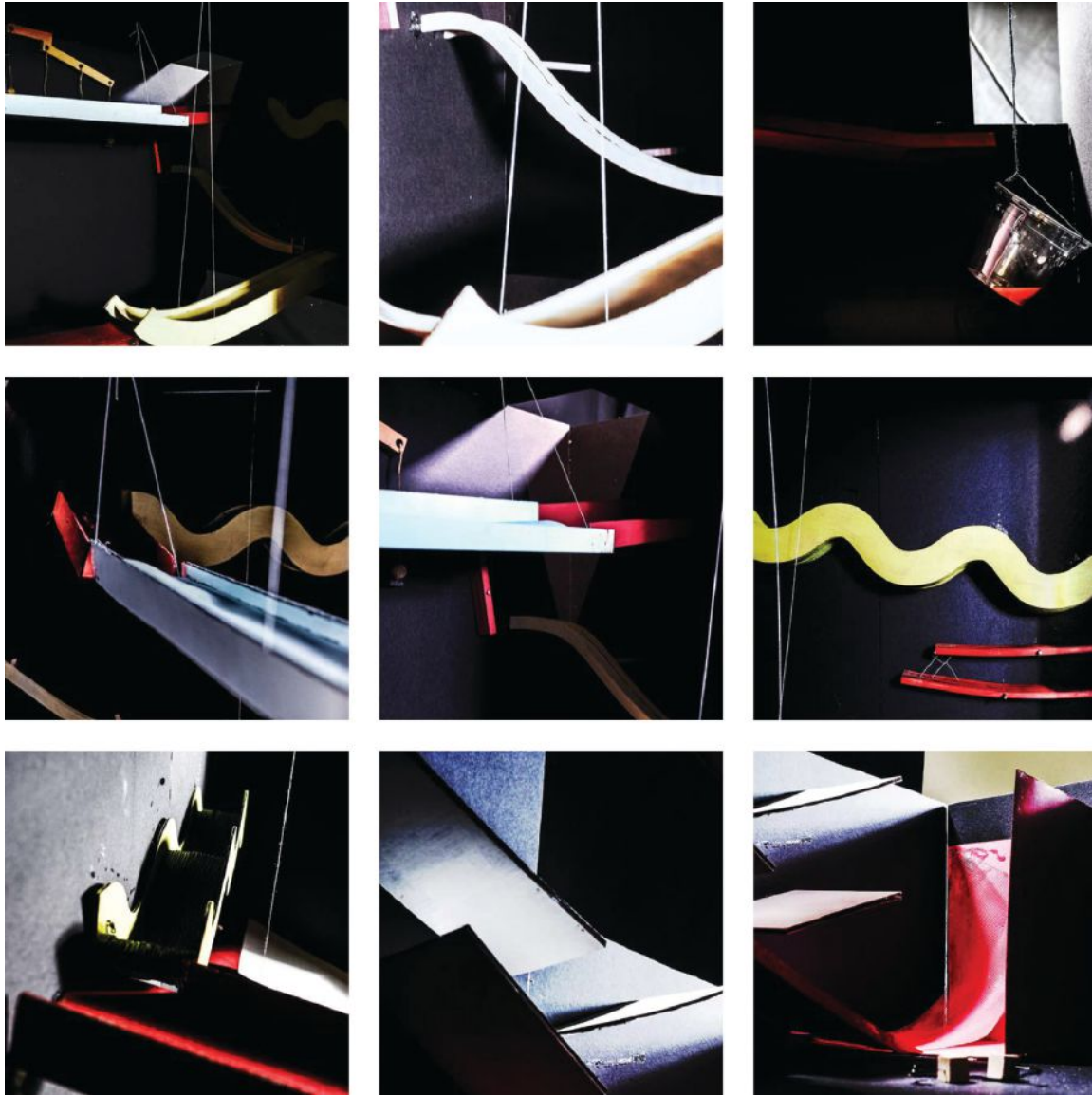






#### Edgard Varèse Music Center—Ionization |

Kutay Biberoglu and Ziqing Nie found inspiration in Varèse's 1931 piece "Ionisation," in which the composer drew from Cubism to fragment collections of sounds into different timbres, expanding and splitting them to create a larger whole. Likewise, Biberoglu and Nie transformed and fragmented traditional architectural elements for their design, including space, color, and acoustics. They started with two spaces that they repeat over and over to form the larger complex, and then went through a series of spatial iterations to create a collection of unique environments.

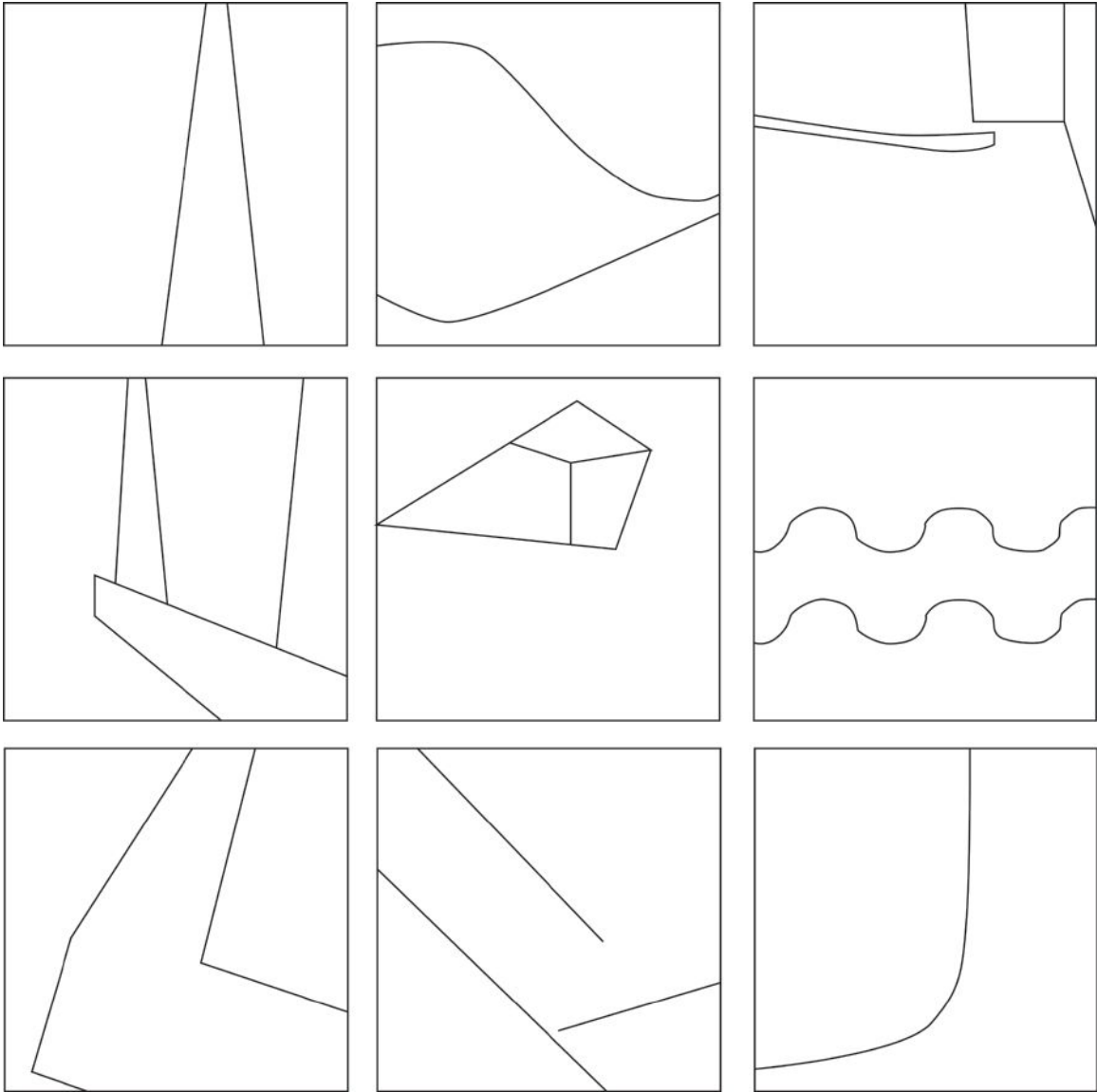


#### Edgard Varèse Music Center—Events & Trigger |

Zhenggu Zhou and Jian Zheng focused on “Poème Electronique,” the piece that Varèse composed for the 1958 Brussels World’s Fair. After analyzing the electronic elements in the composition, Zhou and Zheng created a Rube Goldberg machine that uses a rolling ball to simulate various sounds, and then translated the movement of that ball into the spatial elements of their design for a music center. They connect larger spaces such as an auditorium, library, and archive using smaller “trigger” spaces that direct movement through the building, which were influenced by the short transitions that connect and lead to longer movements in Varèse’s piece.



Concept Diagram





# AEC CARES

## projectHouston 10.5.18

**During hard times, children want to be with their moms...**

The Santa Maria Hostel in Houston offers services and support to women seeking treatment for substance abuse. Their safe, supportive housing allows children to remain with their moms during their recovery.

Ready to help these women on their path to a better life? Join AEC Cares as we renovate Santa Maria's Jacquelyn House.

**8<sup>TH</sup> Annual AEC Cares event - projectHouston**  
Friday, October 5<sup>TH</sup> 2018  Visit [AEECCares.com](http://AEECCares.com)

THANK YOU TO OUR DESIGN TEAMS & CURRENT SPONSORS

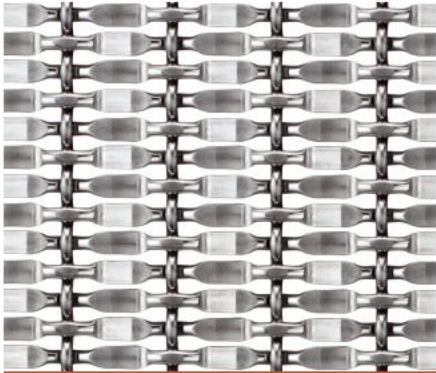
amoARCH • D.E. Harvey Builders • Kirksey Architecture • LKB Architecture • Powers Brown Architecture  
Rivers Barden Architects • Terralab Landscape Architects • University of Houston





# BANKER

WWW.BANKERWIRE.COM



Discover the widest variety of woven wire mesh available for indoor and outdoor applications.

## THE STRONGEST, SAFEST, MOST RELIABLE MATERIAL LIFTS ON THE MARKET.

Integrated with patented safety features and custom-built to exact specification, PFlow material lifts provide long-term benefits and proven performance your customers will appreciate.

**21 Series: 8,000 LBS Lifting Capacity, 2 Levels of Travel, 22' of Vertical Travel**

**414.352.9000**  
**www.pflow.com**

Made in the USA, Milwaukee, WI



MATERIAL HANDLING SOLUTIONS



## LUMICHRON

The Illuminated Haven for Time

888-788-4838

Tower & Commercial Clocks  
Manufacture, Sales, and Service  
www.lumichron.com



## WhiteWalls.com

Whiteboard Steel Wall Panels



WhiteWalls.com 800 624 4154

## THE MOST INSPIRING SPACES BEGIN WITH NORTHWEST HARDWOODS.

America's largest and only coast-to-coast hardwood lumber producer.

**NWH** northweighthardwoods.com

## AVADEK

Walkway Cover Systems & Canopies



custom designed *canopies* and *trellis structures* for any location

contact us today to start the design process

www.avadek.com  
1.800.777.4031

## THE MODERN FAN CO

A Collection of Ceiling Fans  
Designed by Ron Rezek

modernfan.com



IC/Air3

: designed by Guto Indio da Costa

## Simply Brilliant Spaces



Lighting Design: ARUP  
Architecture: Gensler  
Photography: ©Ryan Gobuty/Gensler

## luminii

Enhanced With Specification-Grade LED Lighting

luminii.com



Clearly Evolving

Introducing the latest evolution in low-e glass.

For a sample, call 855-887-6457 or visit vitrogazings.com/sb90



## FOR INFORMATION on how to be a part of the next ARCHITECT MAGAZINE special advertising section,

contact Jaeda Mohr at 202-736-3453.





**UNDER ARMOUR  
BRAND HOUSE**



Featuring Ellison Balanced Doors.

**Ellison**  
CUSTOM CRAFTED BALANCED DOORS  
ellisonbronze.com



**LSI**  
**CONTROLTrack**  
Dynamically Controlled,  
Aesthetically Clean,  
Continuous Slot  
Track System

www.LightingServicesInc.com

Availability is everything *AGC*  
when it comes to glass.



Learn more about AGC's Availability  
at [agcglass.com](http://agcglass.com)

**AGC**  
Your Dreams, Our Challenge




Photo: Boston Properties, Inc.

**Hope's Windows, Inc.** provides luxury homes across the country with the world's finest steel and bronze windows and doors. Explore Hope's in detail and you'll quickly discover durability and longevity, a quality of refined elegance impossible to achieve with other materials, and a level of freedom to design and build custom windows and doors for truly extraordinary homes.

THE WORLD'S FINEST  
WINDOWS AND DOORS SINCE 1912

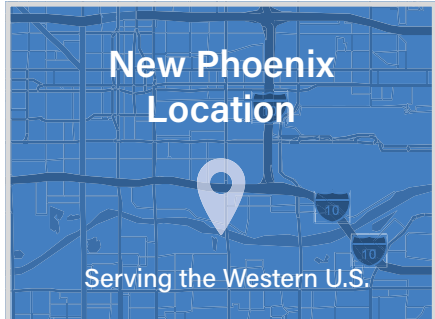
**HOPE'S®**  
www.hopeswindows.com



**LUMENTURE**

THE LIGHTING QUOTIENT®  
elliptipar® tambient® lumenture®  
www.LightingQuotient.com

**New Phoenix  
Location**



Serving the Western U.S.

**PAC-GLAD**  
PETERSEN

PAC-CLAD.COM

**TECTURA**  
designs.  
A WAUSAU TILE INC. BRAND

PAVING | SITE FURNISHINGS | TERRAZZO  
CUSTOM PRECAST CONCRETE



TECTURADESIGNS.COM | 800.388.8728



**WAC Lighting introduces Pixels**

Pixels illuminate virtually any surface with a flexible paper thin, modular and scalable product. Uniquely versatile, Pixels can backlight architectural features and signage or can be applied to stone, acrylic, glass, mica and other fine materials to extend the boundaries of what can be illuminated imaginatively on ceilings, walls, floors and other surfaces in any shape or size.

**WAC Lighting | 1.800.526.2588**  
www.waclighting.com

**ARCHITECT**

**Content Licensing  
for Every Marketing Strategy**



**Marketing solutions fit for:**  
Outdoor | Direct Mail | Print  
Advertising | Tradeshow/ POP  
Displays | Social Media | Radio & TV

Leverage branded content from Architect to create a more powerful and sophisticated statement about your product, service, or company in your next marketing campaign. Contact Wright's Media to find out more about how we can customize your acknowledgements and recognitions to enhance your marketing strategies.

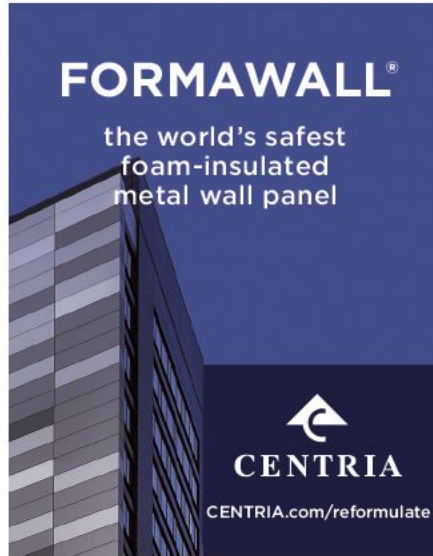
Call Wright's Media at 877.652.5295, visit our website at [wrightsmedia.com/sites/hanleywood](http://wrightsmedia.com/sites/hanleywood) or email us at [hanleywood@wrightsmedia.com](mailto:hanleywood@wrightsmedia.com)






**Fabricicoil**<sup>®</sup>

fabricicoil.com  
800.999.2645



**FORMAWALL**<sup>®</sup>

the world's safest  
foam-insulated  
metal wall panel

  
**CENTRIA**  
CENTRIA.com/reformulate

## POWER GROMMET

PCS75



POWER OUTLET OR USB CHARGER

**MOCKETT**  
DOUG MOCKETT & COMPANY, INC.

www.mockett.com • (800) 523-1269

# Human **x** Nature

the intersection of humanity and  
the built environment

 **GREENBUILD**<sup>®</sup>  
INTERNATIONAL CONFERENCE AND EXPO

CHICAGO 2018  
NOVEMBER 14-16

REGISTER TODAY  
[GREENBUILDEXPO.COM](http://GREENBUILDEXPO.COM)

Advertiser	Page	Website	Phone
3G Lighting	97	www.3GLighting.com	1.888.448.0440
AEC Cares	154	www.AECCares.com	
American Institute of Architects	74	www.aialeadershipinstitute.com	
American Institute of Architects	76	www.adfilmfest.com	
American Institute of Steel Construction	17	www.aisc.org/steelday	312.670.2400
ARCAT	C3	www.arcacat.com/charrette	
Architect Fall 2018 Call for Products	65	www.architectproductcall.com	
Arktura	21	www.arktura.com/atmosfera-family	
ASI Accurate Partitions	19	www.asi-accuratepartitions.com	708.442.6800
Banker Wire	110	www.bankerwire.com	1.800.52.6772
Bobrick	27	www.bobrick.com	
BOK Modern	106	www.bokmodern.com	
CaesarStone Quartz Surfaces	8-9	www.caesarstoneus.com/metropolitan	
Cascade Architectural	23	www.cascadearchitectural.com	800.999.2645
CENTRIA	70	www.CENTRIA.com/reformulate	
CPI Daylighting	55	www.cpidaylighting.com	800.759.6985
CUNY	107	www.cuny.edu	
Dacor	2-3	www.dacor.com	
Daltile	93	www.daltile.com	
Doug Mockett & Co. Inc.	36	www.mockett.com	800.523.1269
Dri-Design	99	www.dri-design.com	616.355.2970
DuraCoat	91	www.duracoatproducts.com	951.341.6500
E. Dillon and Company	71	www.edillon.com	800.234.8970
Ellison Bronze	57	www.ellisonbronze.com	
Endicott Clay Products	105	www.endicott.com	402.729.3315
Feeney	96	www.feeney15.com	1.800.888.2418
Goldbrecht USA Inc	65*	www.vitrocsaUSA.com	310.988.4455
Graham Architectural Products	109	www.grahamwindows.com	800.755.6274
Hanover Architectural Products	98	www.hanoverpavers.com	
HIVE	84-85	www.AR.HWHIVE.com	
Hope's Windows	102	www.hopeswindows.com	
Kalwall	36	www.kalwall.com	800.258.9777
Karndean International	111	www.karndean.com	
Latch	11	www.latch.com	
Lighting Services, Inc.	49	www.LightingServicesInc.com	800.999.9574
LP FlameBlock	29	www.LPCorp.com/FlameBlock	



Advertiser	Page	Website	Phone
Luminii	83	www.luminii.com	
Lutron	C4	www.lutron.com/shadesbylutron	
Marvin Windows and Doors	15	www.marvinwindows.com	
Merchandise Mart Properties, Inc.	65*	www.luxehome.com	312.527.7939
Modernfold	25	www.modernfold.com	800.869.9685
Modular Arts, Inc.	100	www.modulararts.com	206.788.4210
NBK	101	www.NBKUSA.com	
Northwest Hardwoods	30	www.northwesthardwoods.com	
Oldcastle BuildingEnvelope®	C2-1	www.obe.com	1.866.Oldcastle
Ornamental Metal Institute of New York	10	www.FACADETECTONICS.ORG/EVENTS	
Owens Corning	95	www.owenscorning.com/commercial	1.800.GET.PINK
Owens Corning	66-69	www.owenscorning.com/commercial	
P/A Awards	43	www.paawards.com	
Pabco Gypsum	16	www.pabco gypsum.com	
Panasonic Eco Solutions North America	31	www.reinventingventing.com	
Rocky Mountain Hardware	112	www.rockymountainhardware.com	
SAFTIFIRST	45	www.safti.com	888.653.3333
SageGlass	59	www.sageglass.com/seamless	
Seiho International	72	www.seiho.com	626.395.7299
Sherwin-Williams	61	www.swproindustrial.com	
Sierra Pacific Windows	4-5	www.SIERRAPACIFICWINDOWS.com	800.824.7744
Simpson Strong-Tie	63	www.go.strongtie.com/mpbz	800.999.5099
Steel Institute of New York	14	www.metalsinconstruction.org	
TAKTL	7	www.TAKTL-LLC.com	412.486.1600
The AGC Glass Company North America	89	www.agcglass.com	
The Lighting Quotient	53	www.LightingQuotient.com	
The Modern Fan Co.	108	www.modernfan.com	
The Valspar Corporation	37, 39, 42	www.coil.sherwin.com/architect	
Think Wood	34	www.thinkwood.com/architect	
Times Square Lighting	51	www.tslight.com	
USG Corporation	86	www.usg.com/underlayments	
VIEGA	47	www.viega.us/About-us	
Vitro Architectural Glass (formerly PPG Glass)	12-13	www.vitroglazings.com/acuity	
VT Industries	33	www.VTDoors.com	1.800.827.1615, ext 10512
Wausau Tile	113	www.TECTURADESIGNS.com	

# Editorial: Let's Do Better by Dementia

How do you design for someone who is losing their mind? People with dementia experience visual, spatial, and perceptual symptoms, in a variety of combinations, that the rest of us can scarcely imagine. They often become less able to detect movement, differentiate between colors, and register contrast, such as between black and white. A blue floor surface may read as a body of water. A white porcelain toilet may be invisible against a backdrop of white tile. People with dementia see double, they lose depth perception, their field of vision narrows, and they have difficulty coping with visual stimuli, reflections, glare, and sudden changes in light level. They bump into things, get disoriented or lost easily, and have difficulty grasping objects such as door handles. They may lose the ability to recognize everyday objects. My father, who died of Alzheimer's and Parkinson's last month, and had a hearty appetite to the end, tried on separate occasions to eat a stick of deodorant, a rubber doormat, and a Styrofoam cup. It'd be funny if it weren't so very sad.

Perhaps these symptoms wouldn't matter, architecturally, if dementia patients all conformed to the chairbound, somnolent stereotype. But many suffer from extreme restlessness and agitation, which compels them to roam wherever possible, and often at night. In the memory care facilities where he lived during the last year of life, Dad developed an alarming habit of walking into other people's rooms uninvited.

Perhaps these symptoms wouldn't matter if dementia patients remained out of sight and mind, where our fearful society habitually banishes them. The situation, however, is growing too big to ignore. The Alzheimer's Association reports that 5.7 million Americans, including one in 10 over 65, suffer from Alzheimer's, which is the most prevalent of the neurodegenerative diseases. More than 16 million provide (unpaid) care to loved ones with Alzheimer's. An additional 2.2 million suffer from other forms of dementia such as vascular, frontotemporal, and

Lewy body dementia. A 2017 study put the cost to the U.S. healthcare system of the nine most prevalent neurological diseases at \$800 billion per year—more than the country's entire annual military budget. These numbers will grow as the nation's 76 million Baby Boomers progress into old age. A 2018 study estimated that by 2060, 9.3 million will be living with Alzheimer's, and another 75 million will be in the early, undetectable stages of the disease. They deserve to live, and die, with dignity. Architecture must be ready to help them.

Unfortunately, design for dementia hardly registers as an area of academic or professional inquiry, compared to ostensibly glamorous project types like skyscrapers and museums. Health- and elder-care projects in general are red-headed stepchildren, receiving too little recognition from peers and the media (*mea maxima culpa*). The AIA/AAH Healthcare Design Awards are one welcome exception, another is the interest and research of firms such as Nord Architects and Perkins Eastman and of innovative younger practitioners such as Matthias Hollwich, AIA, Jack Sardeson, and Deane Simpson. Given the scope of the issue in terms of both human and economic cost, design for our aging population and for people with dementia in particular deserves a more central place in the collective architectural consciousness.





Looking for a free way  
to promote your firm?



National Memorial on Mount Herzl - Kimmel Eshkolot Architects

Studio Arts - Ibrahim Ibrahim

WAYA - Lazzarini Design

ACE HOTEL - JAPAN

Luke Stanley Architects + Hunt Design

10 logements - titan

Zaha Hadid's Capital Hill Residence

City Center - Las Vegas, NV

# CHARRETTE

...can do that.

Another free tool from ARCAT, Charrette isn't just for organizing your projects - it can promote them too! Create your firm's portfolio, upload the photos you want, and control the project information you wish to share. Create links back to your firm's website and share contact details so clients can reach out to you. Just another way ARCAT is helping you be more productive.

learn more at  
[www.arcat.com/charrette](http://www.arcat.com/charrette)



See us at Greenbuild in  
Chicago, booth 529, Nov 14-15





## Shades by Lutron

Solar Adaptive Shades & Sustainable Fabrics  
Northeastern University Interdisciplinary Science and  
Engineering Complex  
Architect: Payette



Photos © Warren Jagger Photography

[lutron.com/shadesbylutron](http://lutron.com/shadesbylutron)

