IT'S DIFFERENT

Young Architects 13
It's Different

IT'S DIFFERENT

Foreword by Michael Manfredi
Introduction by Anne Rieselbach

Catie Newell
form-ula
Future Cities Lab
Kiel Moe
NAMELESS
William O'Brien Jr.

Princeton Architectural Press
The Architectural League of New York

Published by
Princeton Architectural Press
37 East Seventh Street
New York, New York 10003

For a free catalog of books, call 1.800.722.6657.
Visit our website at www.papress.com.

To view podcast interviews with each firm
please visit the Architectural League's website
at www.archleague.org.

Printed and bound in China
15 14 13 12 4 3 2 1 First edition

Installation photos at Parsons The New School
of Design © David Sundberg/Esto

Editor: Dan Simon
Designer: Bree Anne Apperley

Special thanks to: Sara Bader, Nick Beatty,
Janet Behning, Nicola Bednarek Brower,
Fannie Bushin, Megan Carey, Carina Cha,
Russell Fernandez, Jan Haux, Linda Lee,
Jennifer Lippert, Gina Morrow, John Myers,
Katharine Myers, Margaret Rogalski,
Sara Stemen, Paul Wagner, and Joseph Weston,
of Princeton Architectural Press
—Kevin C. Lippert, publisher

Library of Congress
Cataloging-in-Publication Data

Young Architects 13: it's different /
foreword by Michael Manfredi; introduction
by Anne Rieselbach. — 1st ed.
p. cm. — (Young architects; 13)
ISBN 978-1-61689-057-5 (alk. paper)
1. Architectural League Prize for Young
Architects and Designers—Exhibitions.
2. Architecture—Awards—United
States—Catalogs. 3. Architecture—
United States—History—21st century—
Exhibitions. 4. Young architects—
United States—Exhibitions. I. Title: It's
different.
NA2340.Y67994 2012
707.9'73—dc23

2011035987

Contents

Acknowledgments

Annabelle Selldorf, President
The Architectural League of New York

Throughout its history, the Architectural League has engaged younger members of the design community, recognizing and encouraging their talents. The Architectural League Prize for Young Architects + Designers was initiated thirty years ago, in 1981, on the occasion of the centennial of the League's founding. Created by a group of young architects under the leadership of the League's then president, Emilio Ambasz, and executive director, Marita O'Hare, the inaugural competition, exhibition, and lecture series, initially titled The Young Architects Forum, set a durable precedent.

A major component is the competition theme, which sets the League Prize apart from other portfolio competitions. The theme is developed by the League Prize committee, and changes every year to reflect current issues in architectural design and theory. Entrants, all ten years or less out of undergraduate or graduate school, are asked to review their work to identify the underlying ideas that tie it together. The League Prize committee, selected each year from past winners, asks prominent members of the design community to serve with them on the jury for the competition. In 2011, Michael Manfredi, Hilary Sample, Ken Smith, and I served as jurors alongside committee members Lonn Combs, Phu Hoang, and Aleksandr Mergold.

On behalf of the League, I would like to thank the committee and my fellow jurors for their time and commitment to the project. The League Prize would not be possible without the continuing work of League staff members Anne Rieselbach, program director, and Nicholas Anderson, program manager, who curate and administer the Prize.

Sincere thanks are due as well to the Sheila C. Johnson Design Center at Parsons The New School for Design for cosponsoring the exhibition and lecture series for a second year, and to their exhibition and events staff, Radhika Subramanian, Kristina Kaufman, and Daisy Wong. William Morrish and Alan Bruton of the School of Constructed Environments at Parsons provided helpful logistical support. Thanks also to Michael Bierut and Britt Cobb of Pentagram for the competition and exhibition graphics, and to David Sundberg of Esto for photographing the installation.

The League gratefully acknowledges the support of Dornbracht, Susan Grant Lewin Associates, and Tischler und Sohn. League programs are also made possible, in part, by the Next Generation Fund of the Architectural League and by public funds from the New York State Council on the Arts, a State Agency, and the New York City Department of Cultural Affairs in partnership with the City Council.

Foreword: Peripheral Vision

Michael Manfredi, FAIA
Principal, Weiss/Manfredi

Architecture is an impure art, tempered by false starts, hybrid opportunities, frictions, collaborative dynamics, and unlimited blind alleys. It is measured against an increasingly shifting and unclear array of social, cultural, economic, and environmental pressures. Architecture is also a promiscuous art. Positioned at the strategic intersection of landscape, engineering, planning, art, and ecology, it borrows freely and at times voraciously from these adjacent disciplines. Far from being pejorative attributes, these qualities energize and stimulate, continuously redefining architecture's agency and ultimate value.

Nowhere is this constant redefinition of architecture more apparent and visible than in the 2011 Architectural League Prize for Young Architects + Designers competition, now in its thirtieth year. The winners of the 2011 Architectural League Prize all define distinctly different terrains or territories for design, engaging both entrenched problems and illuminating unseen opportunities for architectural practice.

Each generation chooses to define itself against inherited ideologies, claiming a more relevant and projective future, whatever that might be. When Marion Weiss and I first formed our practice, the shifting cultural and economic landscape was reflected in the dichotomy between the academy and practice. Both operated in seemingly unrelated and mutually isolated worlds, offering little direction. Out of a shared sense of frustration, we sought an alternative way to make architecture more relevant, or make a more relevant architecture.

At that time, the Architectural League's design study projects offered a new platform to address the most pressing and germane questions in architecture, transcending the seemingly irreconcilable differences between architectural speculation and practice. Through a series of design studies, exhibitions, and publications, the League created an agile forum for the exchange of ideas. It was through this forum that we were able to articulate for ourselves an alternative route for practice, sidestepping disciplinary distinctions and the balkanized academic and professional worlds that prevailed. In 1987, *Vacant Lots*, the League's earliest design study, called for architects to create innovative affordable housing in the city's most vulnerable areas. This was our first collaboration, and the exhibition and publication elevated the unseen potential in these sites while illuminating pressing social and cultural challenges. Our firm's recognition by the League in 1997 as an Emerging Voice strengthened our conviction that architecture should define a strong

relationship between infrastructure and urban life. This award validated our early experiments in emerging cross-disciplinary, multiscaled projects, where peripheral vision, unfettered by the administrative limits of each discipline, allowed us to explore more critically relevant work.

Often in juried portfolio competitions for young architects and designers there is an impulse to see the work as summarizing a moment in time, framing a gestalt. This inclination contributes to a reductive view of what a generation of young architects and designers are doing at the expense of depth and nuance. Fortunately, the work that has been awarded and exhibited at this year's Architectural League Prize for Young Architects + Designers covers the broadest of territories without compromising quality, intensity, and rigor. It is work that is both overtly public and painfully quiet, almost a whisper. It is dense and thick and, at times, ephemeral, light as air.

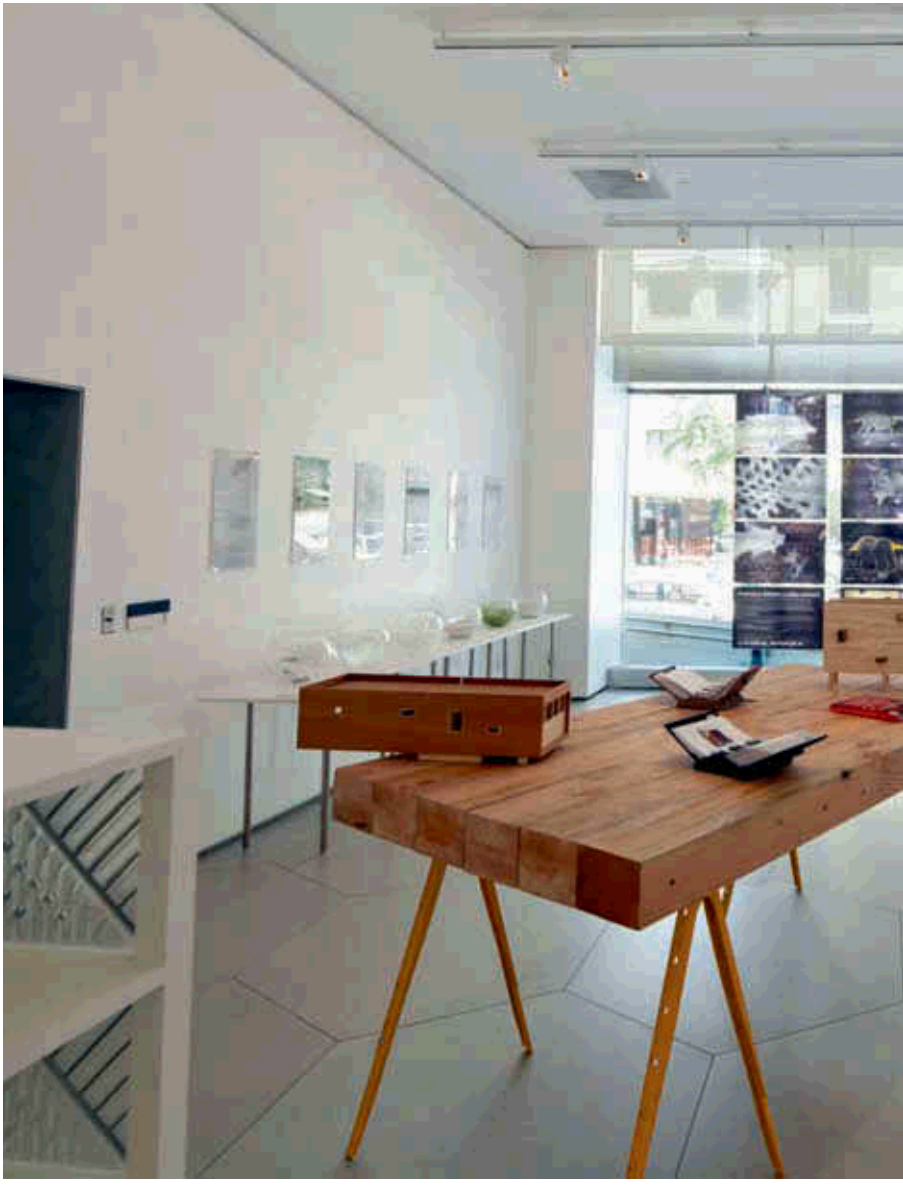
Increasingly, we operate in a climate of flux, in a market that is globally and locally readjusting itself, and in situations where the clarity of a professional career path is eroding. These practices demonstrate the crucial and immediate need for agility, to adjust, to act on intuition, and to take chances. Also apparent in these projects and practices is the conviction that opportunism and ideological positions are not diametrically opposed. This collective assumption of a pliable work ideology, where the imperatives of both theory and practice are more closely aligned, has identified a space between these extremes—both more porous and fertile than previously imagined.

The work here resists facile categorization. Projects test new materials and rethink old ones; solutions toggle between the scale of furniture and the scale of the city. In light of global environmental, economic, and social upheavals, there is a necessity to practice architecture and design in untried and unconventional modes—to generate unpredictable trajectories. In this shifting terrain, there is a growing need to see lateral opportunities that are not immediately apparent or conventionally prescribed. Peripheral vision, as these young firms demonstrate, is central to practices that not only hope to survive, but also aspire to do innovative and meaningful work.

The myth that the architect/designer toils for many years before receiving opportunities to realize his or her ambitions has been questioned by this group. These designers, no more than a decade out of school, have created their own

opportunities and embraced their own set of ambitions without waiting another decade to implement their agendas. They have staked out new territories, exploiting challenges presented by their own specific situations and circumstances. Things are indeed different out there, and each firm, with their distinct projects, seems to ask, "What is the new role of the designer? What is the possibility for architecture yet to be imagined?"

This year's Architectural League Prize submissions collectively illuminated the need for peripheral vision, to find traction in the cracks between explicitly pressing challenges and unseen opportunities, redefining and recalibrating our perception of the world around us.



Introduction

Anne Rieselbach, Program Director
The Architectural League of New York

It's Different posed the question, what is the new role of the designer? The call for entries, drafted by the League Prize committee, challenged entrants to present projects and design approaches that could provide new strategies to address existing or entrenched problems, proactive definitions of practice, and a rethinking of the design discipline in relation to new economic, political, technological, social, and cultural paradigms.

The winning work is different, tectonically and formally. Provocative and idealistic, yet often lyrically utilitarian, some projects test cutting-edge technology and the potentials of new materials, while others reimagine or recycle the most basic elements: ice, wood, packed earth, and even air. Structures and skins are designed to respond dynamically to changing climates; traditional building types are distilled to near Platonic forms; and the ephemeral memorably marks place. There is clarity and thoughtfulness to these design responses, further evidenced in the diverse approaches competition winners took when designing the installations of their work. The diverse architectures and richly textured materials of their installations provide a strikingly different mix, but each expresses a design sensibility that is integral to their work as a whole.

Ajmal Aqtash, Richard Sarrach, and Tamaki Uchikawa identify the dual emphases of their practice as "the culture of performance" and the "performance of culture." Their projects' interchangeable conceptual frames of culture and performance are determined by scale, program, location, energy, and material flow. Three projects with different performative skins—such as an energy harvesting *bris soleil*, an H_2O extraction/retention membrane, and a negative pressure shroud—were represented by sectional models and a kaleidoscopic triptych of panels composed of a combination of reflective Mylar film and resin-coated photo paper hexagonal clusters. All were crafted with a CNC cutter and then hand assembled. The architects intended the pieces to be read as "a series of artifacts that attempt to capture fleeting invisible forces, which surround us" and possess the structural and technological capacity to test the possibility of "a seamlessness in the world at large."

Jason Kelly Johnson and Nataly Gattegno's intricately crafted installation spotlit Thermaespheres, their proposal for a public thermal bath and event pavilion facing the sea. The project creates three distinct microclimates: the *caldarium* (hot), the *tepidarium* (warm), and the *frigidarium* (cold). The resulting three intersecting domed

spaces are surrounded by a lightweight shade canopy that serves as an urban threshold, public promenade, and solar energy generator. A series of process models on illuminated tables were backed by suspended light-boxes containing drawings and installation images for this project and others. The models, many of which contained thousands of small CNC-fabricated components, were hand-sewn and notched together into complex geometric assemblages.

The goal of Kiel Moe's work—a combination of practice, research, writing, consulting, teaching, and fabrication—is "to advance the discipline of architecture through lower-technology but higher-performance means." The massive wooden table which provided a display surface for the work is also a horizontal mock-up of a small corner of the 6-foot-by-8-foot spruce timber walls for the StackHaus, one of the two residences documented in Moe's installation. The table's expansive surface held models, along with indexed card files that documented each project from conceptual sketches to analytic energy consumption studies, working drawings, and construction photographs. This type of juxtaposition between analysis and building is central to his design philosophy: "When archaic modalities such as this solid wood construction are coupled with contemporary analysis techniques, architecturally rich and more ecologically sane futures emerge."

Unchung Na and Sorae Yoo's installation explored their concept of "architecture of fragility" as exemplified in five of their variously scaled projects. Set below detailed drawings and renderings, a series of glass fishbowls aligned along a narrow tabletop contained abstract architectural and environmental elements designed to convey the essence of each project. In the eyes of the architects, the fishbowls become "vessels containing fragile architecture, and also represent fragility," holding not only project models but also giving tangible form to surrounding natural interventions such as blowing air, freezing water, soil-packed earth berms, and sheared landscape planes. Through integrating these phenomena in glass bowls, Na and Yoo revealed their desire to "connect aspects of nature with built form and thus create a relationship between them."

Agitating the context of the smooth white gallery walls, Catie Newell's Diptych suspended photographs of two of her recent projects on a "fragmented metal texture, creating an aggressive atmosphere." Exemplifying her interest in altering and amplifying existing conditions, the steel armature provides a backdrop as well as a

second reading for the images, allowing the projects—each intervening in an otherwise abandoned, decaying structure in Detroit—to be read in thematic relationship with one another. The twisting interrelationship of the armature's contrasting textures, finely finished and rusted, as well as the shifting shadows these forms cast on the gallery walls, point to Newell's ongoing "investigation of inhabitable textures, which experiment with the foils of light/dark, finished/raw, inviting/aggressive, and floating/grounded enclosures and surfaces."

William O'Brien Jr.'s expansive collection of work, Salon des Refusés, featured several recent designs for houses and pavilions. The stacked arrangement of over seventy framed pieces lining the gallery wall was intentionally reminiscent of painting-filled walls typical in historic French art salons, characterized by their densely packed layout and elaborate, attention-vying frames. For O'Brien, this hanging pattern offers the means to "read complex part-to-whole relationships and methods of embellishment." In this recast salon-style exhibit, viewers were presented with a system of topographically linked, but individually articulated CNC-milled high-density foam frames, which provides the opportunity for experiencing what O'Brien describes as "a fluctuating variety of visual associations within the body of work."

When drafting the call for entries, the League Prize committee sought to define what makes this generation and time different, and to acknowledge this difference is permanent—whether referencing changes in the climate, economy, culture, politics, or technology. The winning projects demonstrate how this difference provides opportunities for invention, "to practice architecture and design without preconceptions and assumptions, rethinking how designers engage constructively with our cities, our environments, and our societies."

Biographies

Catie Newell is a founding principal of **Alibi Studio** and assistant professor of architecture at the University of Michigan. Newell's work and research captures spaces and material effects, focusing on the development of atmospheres through the exploration of textures, volumes, and the effects of light or lack thereof. She has an M.Arch. from Rice University and a B.S. from Georgia Tech. In 2006 she was awarded the SOM Prize for Architecture, Design and Urban Design. Prior to joining the University of Michigan as the Oberdick Fellow in 2009, Newell worked as a project designer and coordinator at Office dA in Boston.

form-ula is a New York–based practice of three principals: **Ajmal Aqtash**, **Richard Sarrach**, and **Tamaki Uchikawa**; three individuals from three very different places who share a similar architectural education, as well as a common interest to be part of a design process that incorporates a multitude of ideas and relationships to produce exciting architecture. Aqtash has an extensive background in morphology and is a research director at the Center for Experimental Structures (CES) at the Pratt Institute, where he is also an adjunct professor of architecture. Sarrach has also worked with the Pratt CES and currently teaches. Uchikawa received her B.Arch. from Pratt in 2000 and has previously held senior design positions with various NYC architects, including the Walker Group and Santiago Calatrava.

Future Cities Lab is an experimental design and research office based in San Francisco and Athens, Greece. Design principals **Jason Kelly Johnson** and **Nataly Gattegno** have collaborated on a range of award-winning projects, exploring the intersections of design with advanced fabrication technologies, robotics, responsive building systems, and public space. Their work has been published and exhibited worldwide. Most recently they were the 2008–9 Muschenheim and Oberdick Fellows at the University of Michigan's Taubman College of Architecture and Urban Planning. Johnson graduated with a B.Arch. from the University of Virginia and a M.Arch. from Princeton University. Gattegno has received an M.A. from the University of Cambridge and an M.Arch. from Princeton University. They currently teach at the California College of the Arts and the University of California, Berkeley, as well as lead workshops around the world.

Kiel Moe is a registered architect and an assistant professor of design and building technologies at Harvard's Graduate School of Design (GSD). He received his B.Arch. from the University of Cincinnati, his M.Arch. from the University of Virginia, and his M.DesS from the GSD. He has taught at Northeastern University, Syracuse University, and the University of Illinois, Chicago. He was awarded the 2010 Gorham P. Stevens Rome Prize in Architecture and is a Fellow of the American Academy in Rome. He is author of *Thermally Active Surfaces in Architecture* and *Integrated Design in Contemporary Architecture*, both published by Princeton Architectural Press.

NAMELESS is a concept-based design practice with offices in New York City and Seoul, South Korea. The founding principals, **Unchung Na** and **Sorae Yoo**, run a practice committed to simplicity in an unpredictable world, where they explore the worlds of architecture, art, and global cultural phenomena. In 2011, **Kiseok Oh** joined the firm as a partner in the NYC office. NAMELESS has worked on projects ranging in scale from a series of art pavilions to the cultural infrastructure in NYC, creating alternative relationships between nature and artifacts.

Na received his M.Arch. from the University of California, Berkeley, and a B.E. in Architecture from Hongik University, South Korea. Prior to founding NAMELESS, he trained in NYC and Seoul. Yoo also received her M.Arch. from the University of California, Berkeley, and her B.E. in Architecture from Korea University. Oh received his M.Arch. from Columbia University and a B.E. in Architecture from Hongik University. Before joining NAMELESS, he worked in New York and Seoul.

William O'Brien Jr. is assistant professor of architecture at MIT's School of Architecture + Planning, and is principal of an independent design practice located in Cambridge, Massachusetts.

O'Brien has taught previously at the University of California, Berkeley, as a Maybeck Fellow, and was the LeFevre Emerging Practitioner Fellow at The Ohio State University. Before joining MIT, he was assistant professor at The University of Texas at Austin, where he taught advanced theory seminars and design studios in the graduate curriculum. At MIT, O'Brien currently holds the Cecil and Ida Green Career Development Chair, and teaches design studios in both the graduate and undergraduate programs.

O'Brien received his M.Arch. from Harvard University, where he received the Department of Architecture Faculty Design Award. As an undergraduate, he attended Hobart College, where he studied architecture and music theory. His publications include essays, "Approaching Irreducible Formations," in *ACADIA re:Form* and "Experts in Expediency," in *Log Journal*. He is currently contributing to and editing a collection of essays, entitled *Cycles*.

Catie Newell

Pressing Maneuvers: Catie Newell of Alibi Studio

Worries of environmental strain, financial drought, and material scarcity shape and inf uence our surroundings, composing the spaces architects work within, and their attitudes toward the built environment. Embedded in this touched, potent, and ever-present atmosphere, architecture cannot stand outside of these conditions. Times demand that we embrace this climate and design within it to respond and alter the circumstances and our ways of approaching design.

Working in Detroit and its neighboring Rust Belt cities, my studio, Alibi Studio, investigates and reconfigures existing spaces and volumes by altering materials and spatial boundaries using research focused on creating inhabitable textures. This work necessitates on-the-ground maneuvering as well as strategies that are relevant to the immediate constraints of a site—concerns that range from derelict materials to severe weather to the harsh realities of an anxious city. As a micro-atmosphere, our work creates and grasps an environment, producing material adjustments as well as extending ephemeral effects beyond the work's physical extent. Engaging context directly, and attempting to heighten the material and spatial qualities of the assembly, we investigate foils: light/dark, thick/thin, delicate/violent, dense/porous, f oating/tethered, and light/heavy, striving to agitate and spark the unexpected.

Now infamous for its urban decay, Detroit is in many ways a city that is both an anomaly and an exaggeration. Although it is perhaps our inspiration and our opportunity, it is not the most crucial aspect of Alibi's maneuverings. As the city's material and spatial decline accelerates, it expedites the possibilities for architecture and shares elements with many other locales. We consider our working process to be a response to the times we live in—one that propels our approach to architecture forward.

Our work is the result of an effort to strategically embrace circumstances; not to see these conditions as a burden but as a spark operating a boots-in-the-dirt way of working. As pressing maneuvers go, we understand that such magnified situations are pivotal to our decisions, and we hope it always remains that *it's different*.

Salvaged Landscape

Detroit, Michigan

2010–11

In January 2011, one of the two only remaining houses on the front lawn of Detroit's infamous abandoned Central Train Station was severely damaged by arson. The original material and spatial qualities of the house were irreversibly transformed. After the fire, the space acquired a new texture—a vulnerable existence to the atmosphere that engulfed it—and a volume of blackness—one that could not remain as it stood, but could be used to inspire. This structure's implications as a "once residence," provided a prime space to test and disrupt definitions of thickness and light. The project ultimately became a translation of the original volume, using density, mass, and intentional darkness.

As we tore down the house by hand, demolition-produced spatial peculiarities developed. The house's former barrier was altered, rearranged, dropped in elevation, turned, and partly removed. With each removal, new light and new volumes emerged. Tireless efforts were undertaken to sort and collect the wood. It was immediately apparent that the wood's texture would form the basis of the material and physical palette: the fire left it a beautifully dark black with a charred shine, bulbous and impure geometry, and a fragile lightness paired with an intricate texture—a fortuitous outcome of an otherwise disastrous situation.

Leaving the existing walls of the house as formwork, the salvaged wood was configured piece by piece into a new, denser volume that explores thickness, texture, and occupation. The wood was sliced on one end to expose and contrast the raw conditions against the depth of the char. With the exposed portion on the exterior, the remaining char of the wood was suspended inward. As each piece punctured the space, it brought darkness instead of light.

The final accumulation of charred wood offered the house a new volume. The material reconfiguration introduced new rooms to the house while removing light and harnessing contrast. Beginning to swallow the entire first floor, the new atmosphere that permeated the space was haunting.

Appropriately, the first phase of Salvaged Landscape opened for occupation on October 30, Devil's Night, a night infamous in Detroit for mischief and arson. Recently, the room and upper floor immediately surrounding the work were removed, exposing Salvaged Landscape as a stand-alone space released from its more traditional morphology. With the removal of all surrounding material, Salvaged Landscape will endure its own displacement process, reminiscent of the pulling and rotation

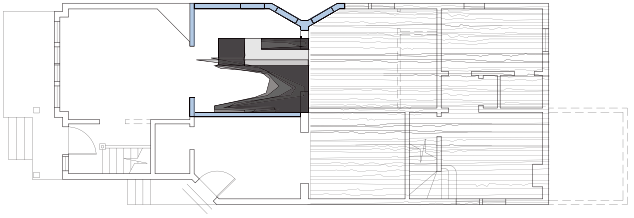
1: Site during demo phase
2: Reconfigured volumes

techniques that were used on-site to remove large walls. In response, the work will rotate 90 degrees upward, exposing yet another configuration of its spatial volumes. What is currently passageway will become an inhabitable space, the exposed wall will become the charged underside, and the horizontal thrust of the wood will reach vertically, providing additional purpose to the material otherwise considered useless. Amid a responsible and planned teardown, Salvaged Landscape creates new spaces in the life of a house—constructed from destruction, surrounded by the process of its own demolition.


1


2

3: Rough mass cut guide
4: Epicenter of fire
5: Salvaging
6: Devil's Night



3

4

5

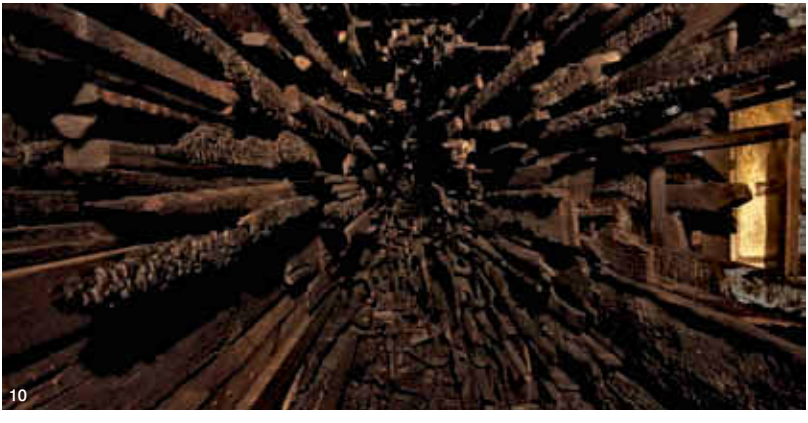
6

7: Sun alignment
8: Nighttime
9: Raw exposure
10: Char reach


7


8


9

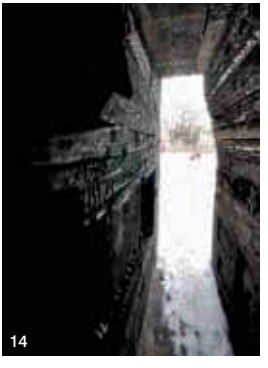

10

11: Side exposure
12: Raw depth
13: Intentional darkness
14: Passageway
15: Sun graze


11


12

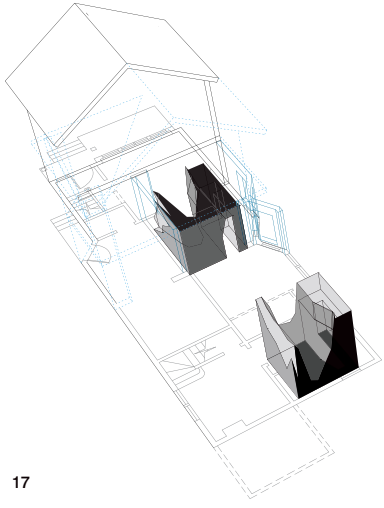

13


14


15

16: Formwork removed
17: Projected massing and volume rotation
18: Unskinned

16



17

18

Weatherizing

Detroit, Michigan

2010

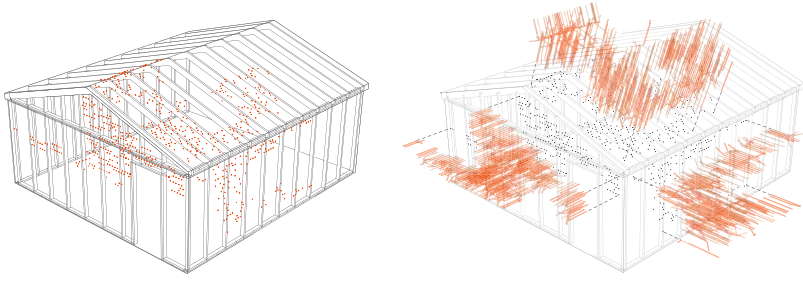
As a material study and electrical experiment, this alteration to an abandoned, freestanding garage mutates and activates the barrier between the interior and exterior atmospheres. As a counter to common flat-pane windows, Weatherizing utilizes glass in an unusual configuration, allowing an altered understanding of volume and exchange. Composed of nearly one thousand glass tubes, the work spatializes and amplifies light conditions (both natural and artificial) and the flow of air. Instead of functioning like a simple leak in the interior/exterior atmospheric conditions, it forms a new atmosphere all to itself. Varying in length and in bends, the aggregation of glass tubes works as a material substrate upon which energy is captured, creating a glow, and the accumulation of hollow channels becomes a conduit for energy, air, and precipitation.

The number of tubes was determined by a direct surface calculation in relation to the previously installed flat-pane window. In other words, the total cross section of the nearly one thousand tubes would fit within the bounds of the old window, taking surface and making it volume. Once the tubes were installed, the implication of architectural details forming the existing dark volume and its relationship to a simple diamond pattern determined the scattering of light. Although patterns dictate the positioning of the holes relative to details of the space, construction drawings were not used; rather, a continuous response to the existing volume and the growing accumulation of glowing effects drove the decision-making process. As a research project, the true architecture—the atmosphere of this shared volume—could only be explored or revealed through physical construction.

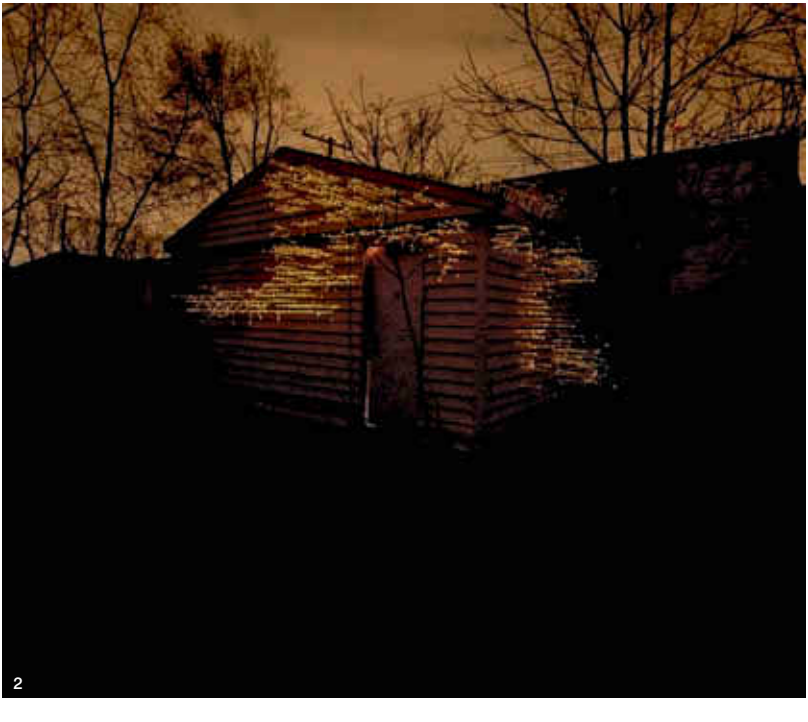
Responding to the constant presence of the site's surrounding atmosphere, it seemed necessary to develop the project further to also determine a new atmosphere during the nighttime. A trace of sunlight was harnessed to work in the opposite direction. We were determined to remain off of the city's power grid, so a system of LEDs was embedded in the walls and charged by solar panels on the roof, collecting energy by day and releasing it at night. The result glows, both outward and inward.

Not seeking to rigorously control conditions on either the interior or exterior, this project relies on the intermingling of energies to produce its own conditions of micro-atmosphere. Mysterious and moody, the project's luminosity is an eerie registration of its seemingly intangible surroundings, and a contrast to the walls that once separated atmospheres as an apathetic barrier.

1: Insertion pattern
2: At night

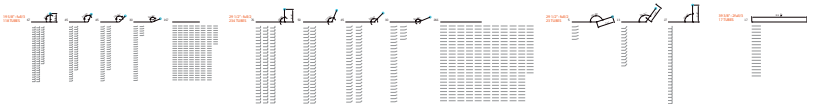


1

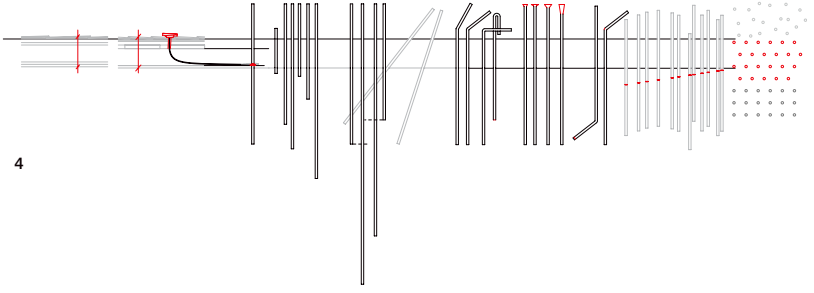


2

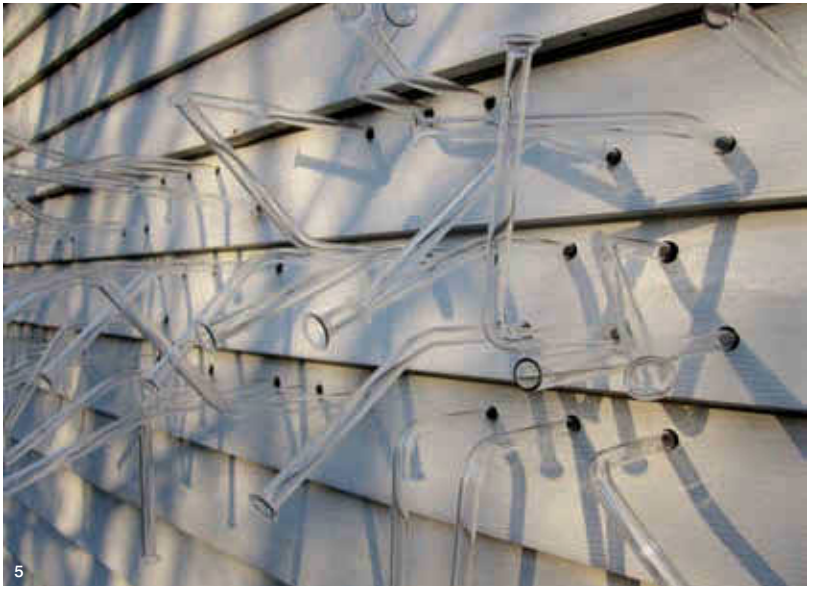
3: Glass counts
4: Glass variations
5: Exterior detail (photo credit: Christian Unverzagt)



3

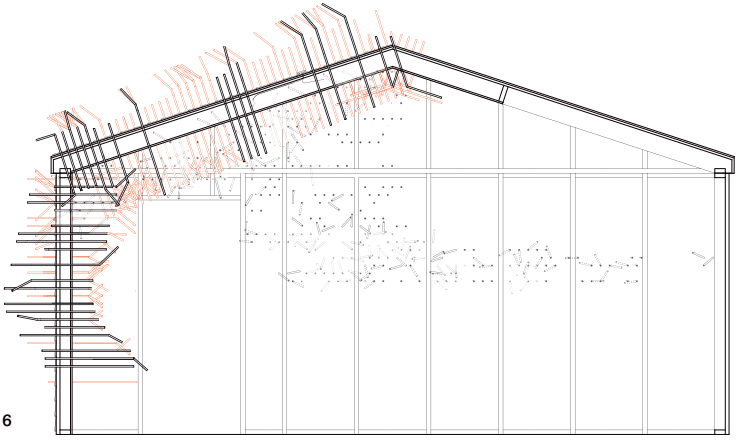


4



5

6: Wall section
7: Shadow trace

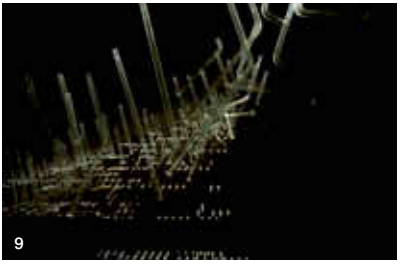


6

7

8: Daytime glow
9: Roof ine accumulation
10: Ceiling exposure
11: Daytime glow
12: Final installation


8

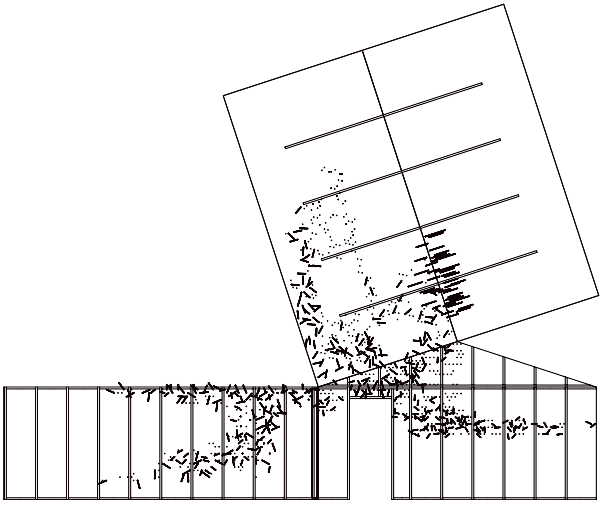

9


10


11


12

13: Unfolded windows
14: Nighttime glow



13

14

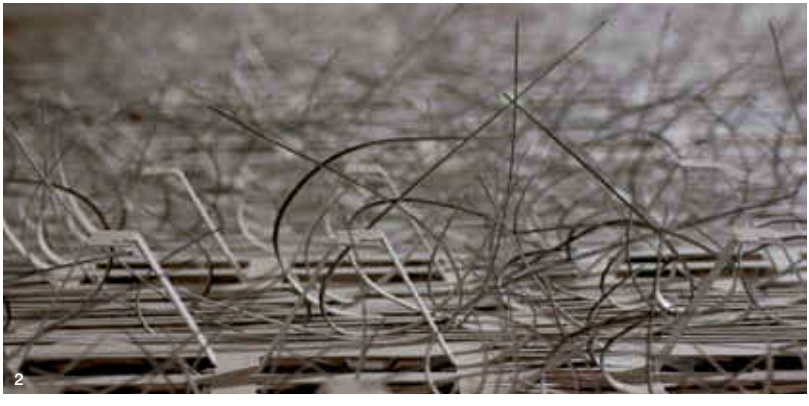
Diptych

New York, New York

2011

Agitating the white gallery walls, Diptych suspends photographs of Salvaged Landscape and Weatherizing on a fragmented metal texture, creating an aggressive atmosphere. Exemplifying Alibi Studio's interest in altering and amplifying existing conditions, the steel armature provides a resonating backdrop, as well as a second reading for the images. It allows the projects to be read together, dependent on the same lines of thinking. Cut to sharp points, encouraged to oxidize, and projected out by hand, the material manipulation demands an alert occupant, seizing an extent beyond its physical boundaries. Simultaneously blending into the wall in a cloudy haze and puncturing the space with slivers of corroded metal, the manipulation and accumulation of the two finishes—context color match and rust—contributes to Alibi's ongoing investigation of inhabitable textures, experimenting with foils that include light/dark, finished/raw, inviting/aggressive, and f eeting/grounded.

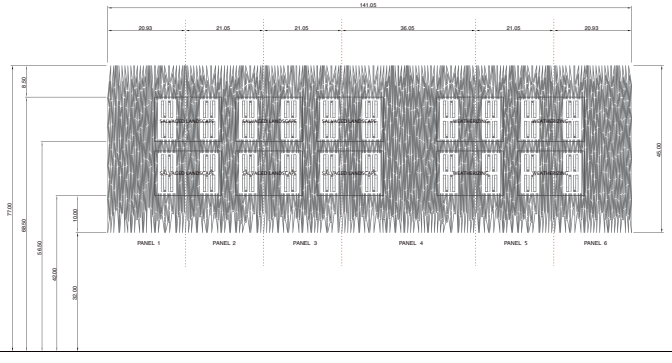
1



2

1: Rusting
2: Volumizing

3: Elevation
4: Gallery installation
5: Texture detail

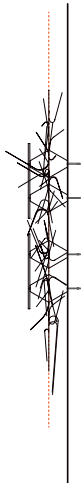


3

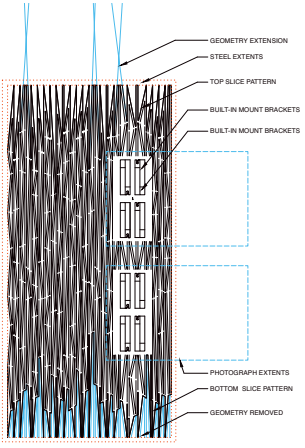
4

5

6: Section
7: Edge cut details
8: Texture cloud
9: Side view
10: Texture shift: aligned to skewed



6



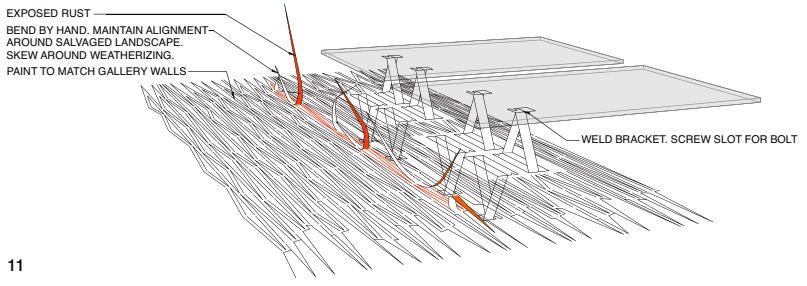
7

8

9

10

11: Volumize axonometric
12: Texture detail
13: Edge detail



11

12

13

Second Story

Flint, Michigan, and Chicago, Illinois

2011

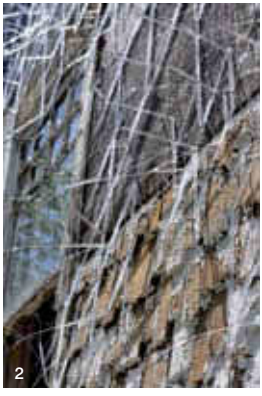
Amplifying, transporting, and distorting the volumes that exist around and within a contested domestic environment, Second Story reconfigures a space that was once familiar into an "other" occupation and visual register. Used to imprint the space and excite the atmosphere, this inhabitable texture is driven by the manipulation of factory-standard acrylic rods to capture, disturb, and distort the existing volumes of the second story of the abandoned Spencer's Funeral Home in Flint, Michigan, then slated for demolition. Inherently transparent, the material captures and permits the passing of light, visually distorting its presence and the view beyond. Through refraction and reflection, it alters both the context and the perception of its physical boundaries and heightens the building's role in the neighborhood.

The work agitates, relocates, and makes accessible otherwise unoccupied volumes: the exterior zone, the wall depth, and the depth of a windowsill. The acrylic rods are systematically bent and reformed by applying heat, creating a pattern that resonates with its context and demonstrates the interplay of tectonic connection and assembly. This also distorts the a priori relationships within the house to construct depth and volume originally unused or nonexistent. By tapering and pulling the material, it develops near-weightless extensions and strands that flee in pursuit of space, altering their perception and depth.

Second Story is suspended above the ground, tethered to the gallery roof trusses. Set further apart, it hovers to promote an ephemeral sense of space, an attuned acknowledgment of its surrounding, and an implied, stretched atmosphere.

1: Capturing and distorting Spencer's Funeral Home
2: Exterior wall detail
3: Interior wall detail
4: Extension Gallery configuration


1


2

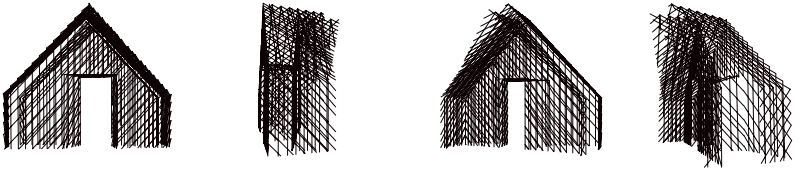

3


4

5: Extension Gallery configuration
6: Wall volume inhabitation
7: Base pattern rotating perspectives

5

6



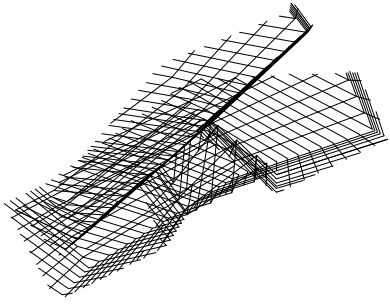
7

8: New room
9: Sillway

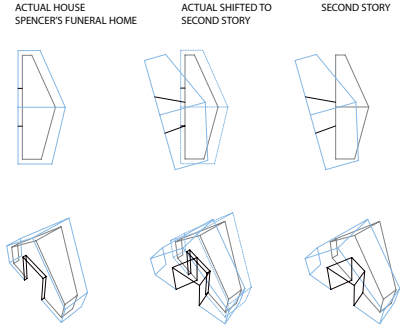
10: Base pattern and volume viewed from below
11: Actual volume versus reconfiguration

8

9

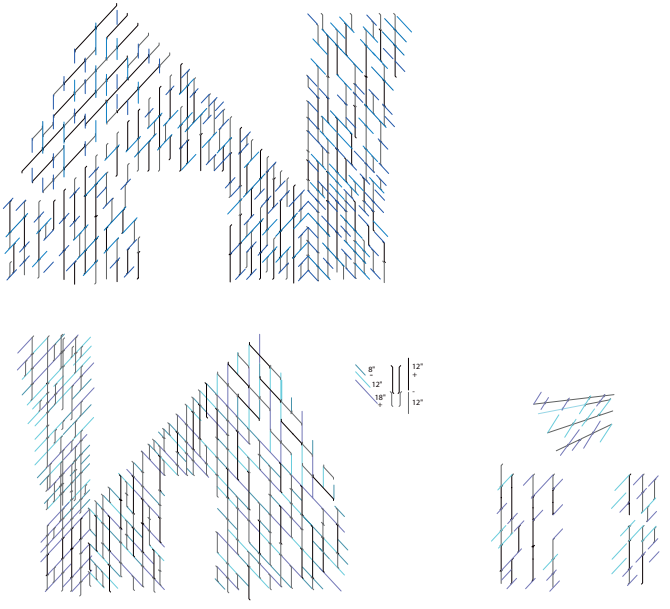


10



11

12: Acrylic pattern notation
13: Pull detail (photo credit: Katie Schenk)



12

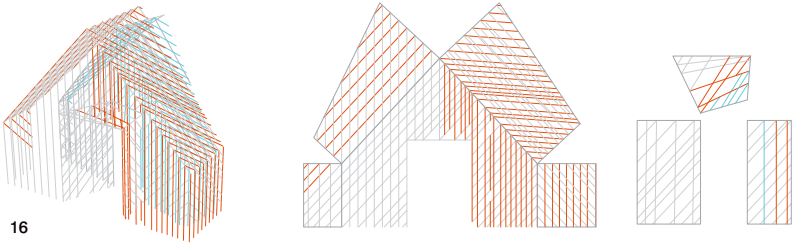
13

14: Pulls and throws
15: Stretched atmosphere

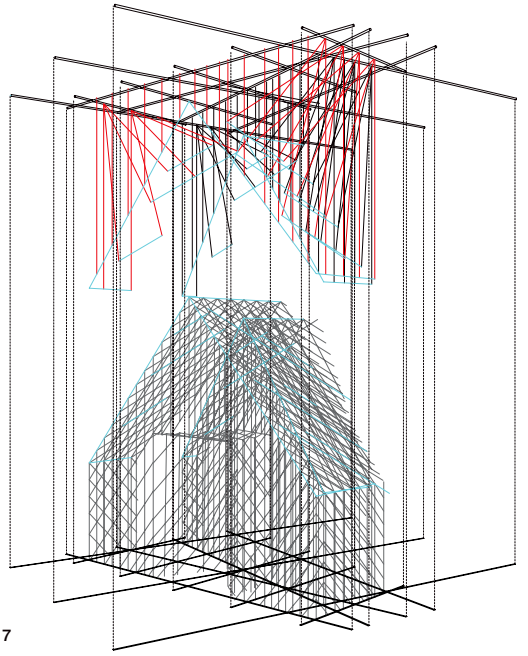

14


15

16: Folding pattern baselines
17: Suspension structure



16

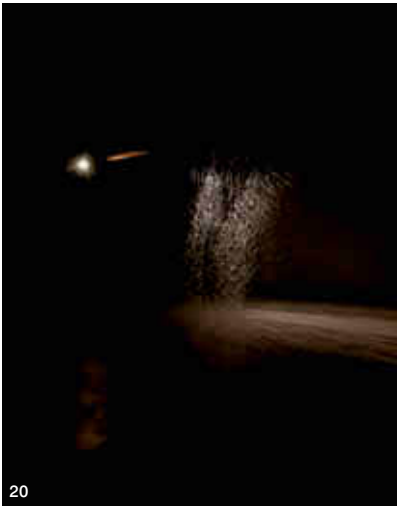


17

18: Corner detail
19: Casting shadows and volumes
20: Extension Gallery suspension


18


19


20

form-ula

form-ula would like to thank the Pratt Institute's School of Architecture, specifically Dean Thomas Hanrahan, Acting Chair Erika Hinrichs, and Mark Parsons for their support. We would also like to thank Joris Debo of .MGX by Materialise for 3-D printing all of our prototypes. Lastly, we would like to thank our family for their continued support.

As we begin to understand our role in the architecture profession during this challenging economic environment, we have come to realize that our practice is formalized by a diverse, collaborative effort that reaches beyond our profession. These externalized conversations with art, history, technology, politics, and science are the driving forces that constantly recalibrate our design practice. It is important to us that we begin to look toward the future with an open-ended approach, extending this conversation with whomever is interested in participating—physically and virtually.

Our core principles explore both the "culture of performance" and the "performance of culture." We feel that these conceptual frames of culture and performance are interchangeable, and driven by scale, program, global positioning, energy, and material flow. The culture of performance and the performance of culture creates a catalytic condition which serves as an entry point for architecture and design. We analyze the organizational structures of culture, the consistencies and inconsistencies of prevailing cultural patterns. We identify these strategic design concepts for their ability to adapt with climate shifts, and their pursuit for cultural growth. The cultural artifacts of space are critical in order to begin to project ourselves into a future where sustainable methods are not just superficial applique but are understood as part of a deeper, holistic design approach that contributes to a very different profession.

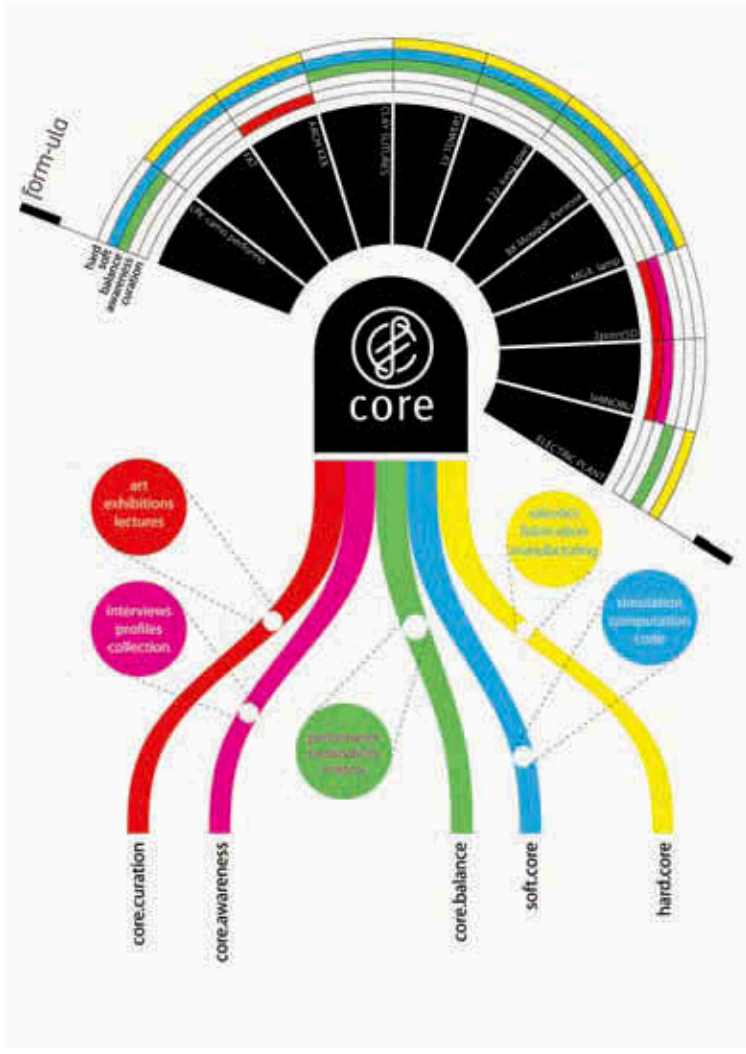
core.form-ula

Launched in February 2008, core.form-ula is the research and development wing of form-ula. Our goal is twofold. First, we aim to provide a platform, be it physical or virtual, where architects, artists, designers, engineers, scientists, and writers can come together in collaborative space. Second, we hope to capture cultural content related to design, engineering, science, technology, and art, organizing it into an online repository that can be accessed and disseminated quickly and globally. Headquartered in New York City, with contributors in Tokyo, Hong Kong, London, Rome, and Los Angeles, we see core.form-ula as a supplement to traditional architectural education. It is not tied to geographical or political alliances which tend to lock ideas away in their respective academic institutions; rather, it is free thanks to a series of social networks that allow greater fluidity. Currently, core.form-ula consists of five divisions: hard.core (hardware), soft.core (software), core.balance (new models of labor, material production, and sustainability), core.curation (art), and core.awareness (history, interviews, profiles, and articles). In these divisions, research from both the academic and professional worlds are fed back into our practice.

1

2

1: Screenshot of core.form-ula website
2: Screenshot of core.curation website
3: core.form-ula R&D workflow diagram

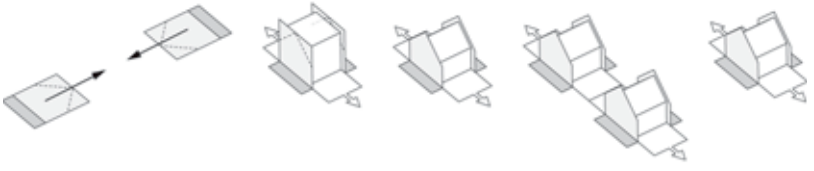


3

Clay Sutures: The Flats

Louisville, Kentucky

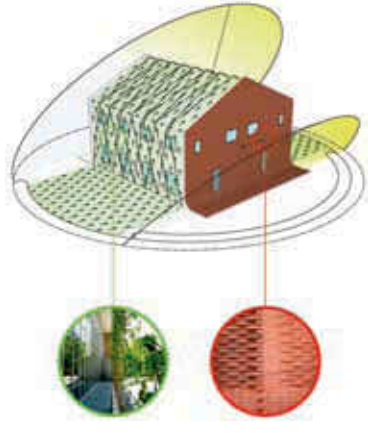
Pinches in the landscape. That is where the point of departure lies for this three-building, twelve-unit apartment complex. The project uses a fundamental icon of domesticity: the five-line network that makes up the pitched-roof facade. In this facade, the idea of the green band is caped or anchored by brick, creating a symbiotic relationship that allows for a climatic balance of the summer and winter months. We were able to achieve this by orienting the buildings north to south in conjunction with an extruded brick pattern and a lattice of crawler ivy that wraps the building from east to west. Offsetting the brick from the facade creates a manifold effect in the summer months, allowing for protection from the high, hot summer sun, creating an increased surface area that, when coupled with the prevailing crosswinds, pulls hot air out of the building. In the winter, the sun's lower angle is trapped in this thickened skin, storing and releasing energy into the building throughout the day. The ivy cloaks the building in an insulating thermal blanket in the summer months and exposes the surface when it recedes in the winter months, allowing it to absorb the sun's heat. In this case, cultural familiarities are used within a housing typology to consider the potential future of housing systems.



1

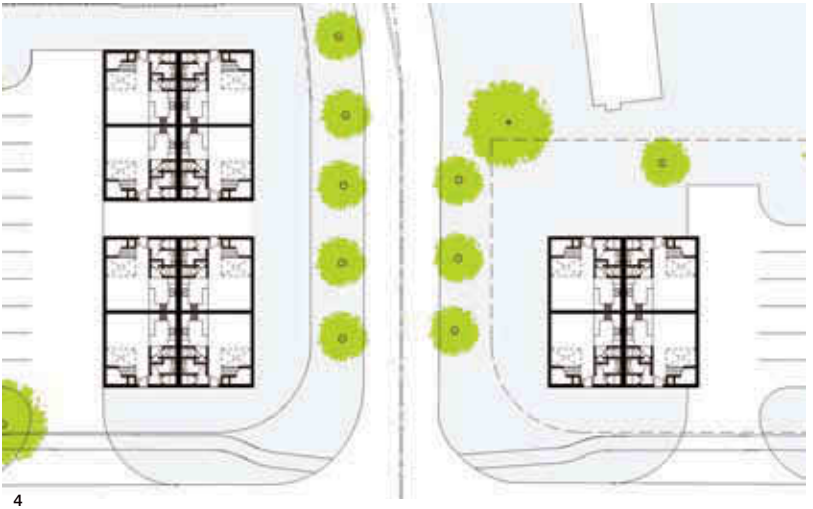
1: Flats formal diagram
2: Exterior corridor rendering
3: Sustainable diagram

2

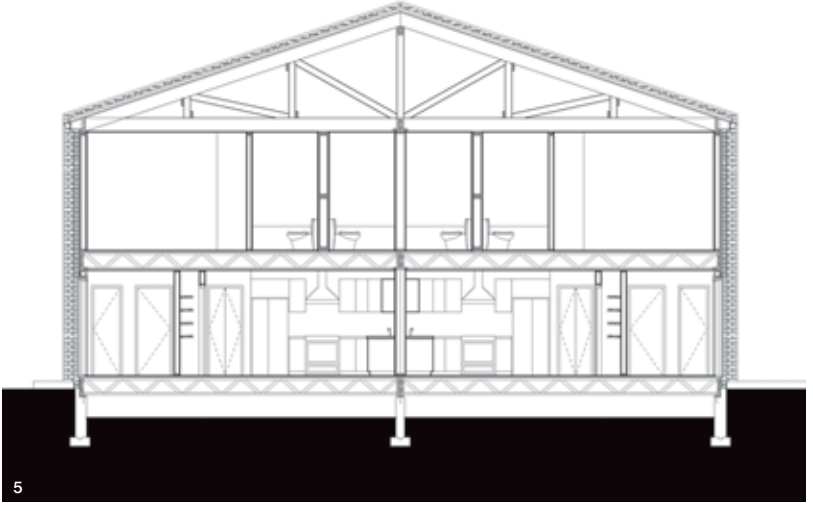


3

4: Site plan
5: Typical unit cross section

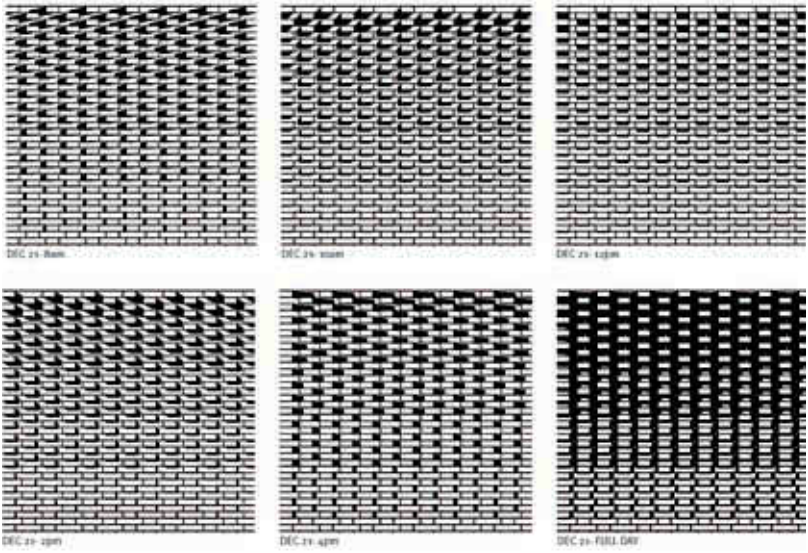


4



5

6: Brick shadow studies
7: Facade photograph



6

7

UN: Camo-Performo

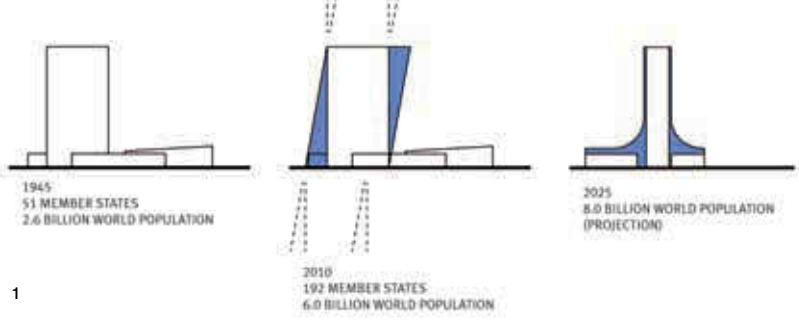
New York, New York

2010, with Neil Katz, David Mans, Ashley Murphy, Peter VanHage, and Chien Si Harriman

We are at a moment in history when postwar architecture is more important than ever. With this project, we began a research effort to explore ways that postwar architecture could potentially be reevaluated within a new cultural model. The current United Nations Headquarters in New York City was the result of a design-by-committee approach, and its new formal proposal continues that tradition. We felt it was important to reach out to sustainability and structural engineers because of the nature of the project, which called for an increase in square footage and for the building to perform at higher thresholds by using its positioning to collect energy.

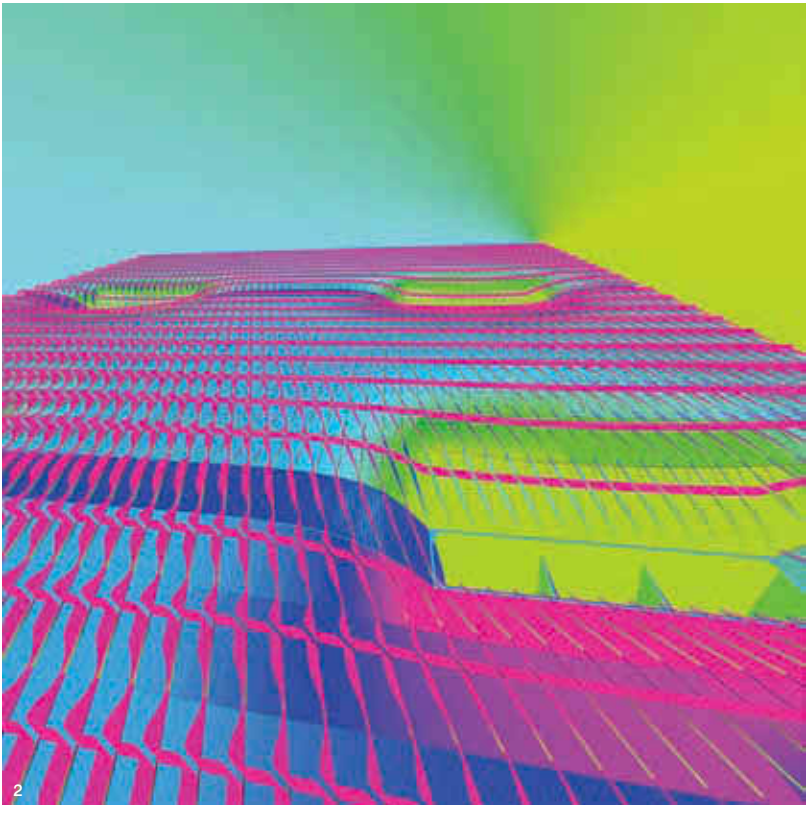
The constraint of not being able to build vertically forced us to rethink how we could take the building program in a different direction. By expanding the high-rise with a drape from the facades onto the surrounding buildings, we were able to produce an increase in the usable program by 30 percent and the public program by 40 percent. The sustainable drape, or Fluent Adipose Tectonic (FAT), reconfigures how the UN's facade can be understood and manifest itself within the current technological and cultural landscape. The multipurpose facade utilizes the idea of a thickened surface to stratify material and performance. The end result is an inflated skin that challenges the conventional role of the facade: to keep exterior forces out. In this case, those undesirable forces are absorbed, transformed, and then redirected into and throughout the building in some form of energy.

Incorporating a vital sustainable strategy and injecting a new iconographic presence for the UN Headquarters and the city's skyline—dominated by vertical-axis structures for too long—allowed us to rethink the future of postwar architecture as it transitions into the next era.

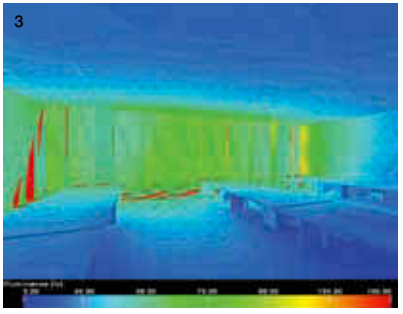


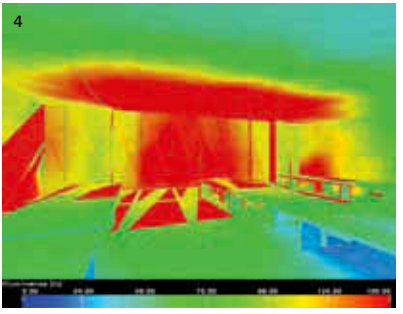
1

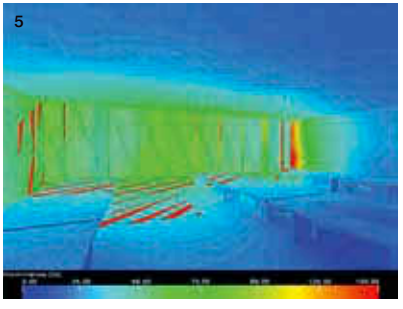
1: Re-Form diagram
2: Camo-Performo art

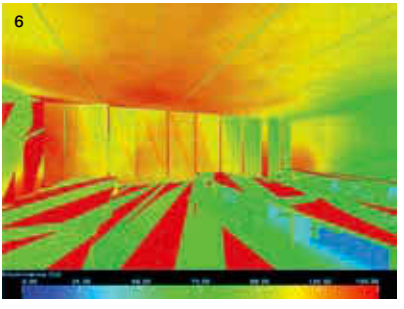


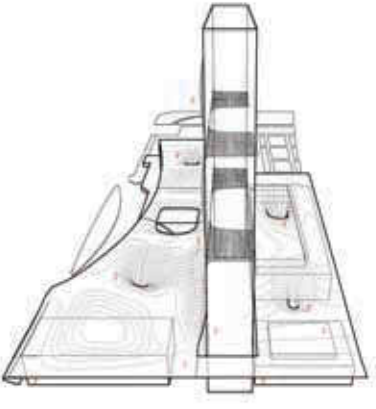
3: Analysis: daylighting
4: Analysis: solar radiation
5: Analysis: daylighting
6: Analysis: solar radiation
7: Performance diagram





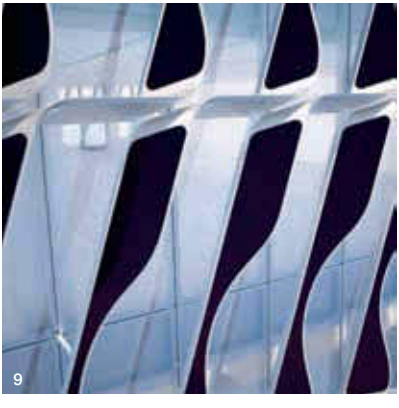


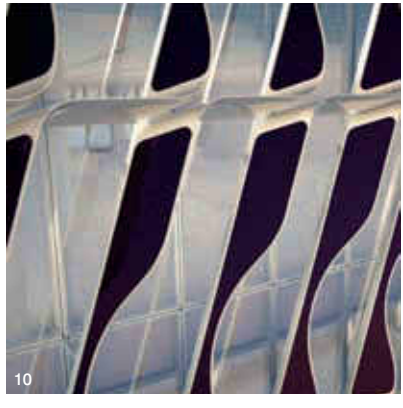




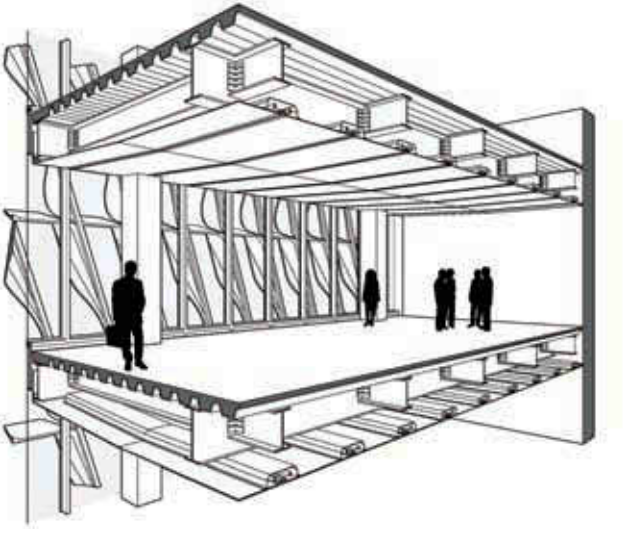
7

8: Exterior rendering, west facade
9: Exterior rendering, east facade
10: Exterior rendering, east facade

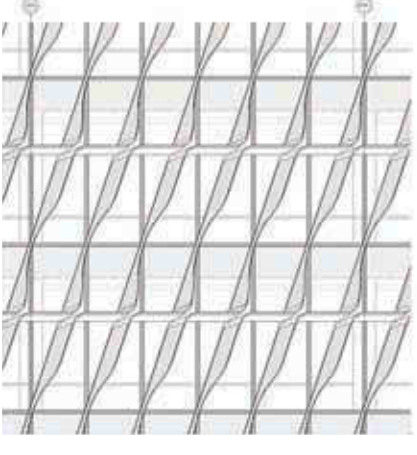


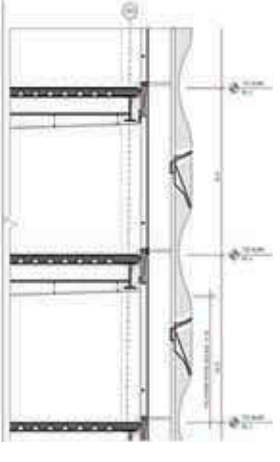


11: Interior perspective
12: Detail, section elevation



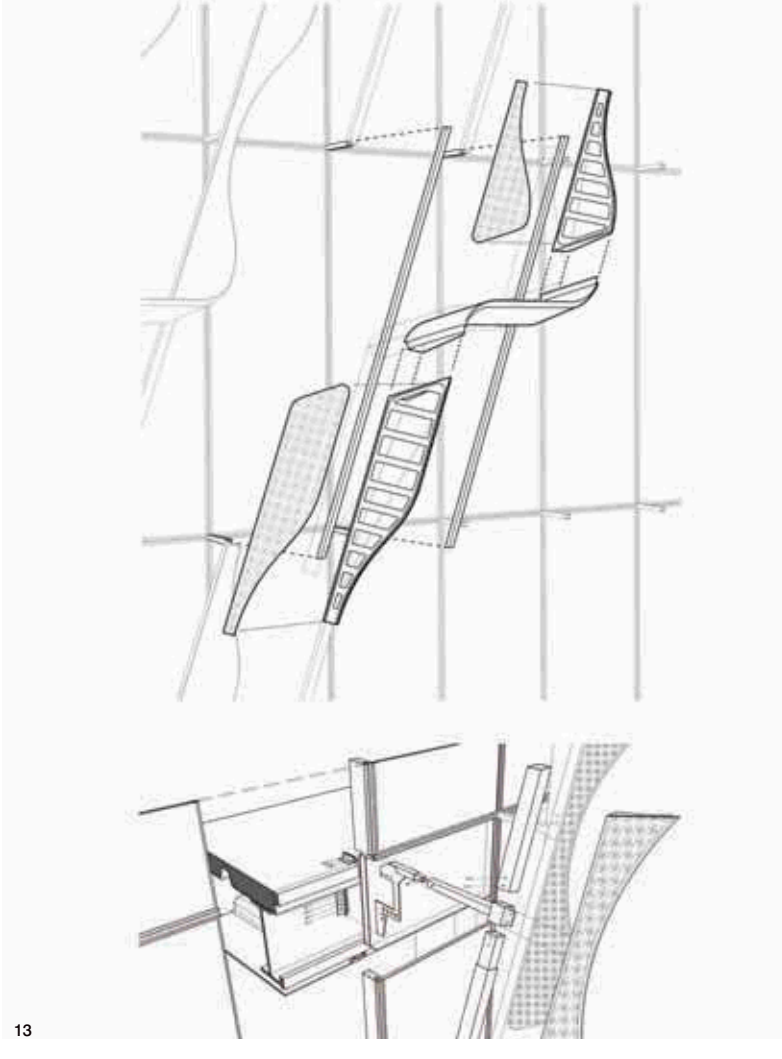
11





12

13: Assemblage of fin drawing



13

Electric Plant: Predator BLDG

Los Angeles, California

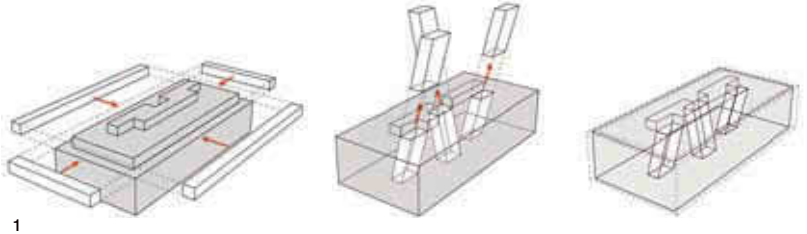
2011, with Ashley Murphy and Peter VanHage

In our efforts to create a zero-environmental footprint for the 300 North LA, we explored many new sustainable technologies. With many of these design practices, the overall objective is to minimize the distance between the occupant and the outside world. This is what interested us most in terms of developing both the overall cross section of the building and the facade.

The proposal addresses the lack of adequate daylighting and natural ventilation. For example, the smaller proportions of the existing tinted glass and the non-operable windows equate to poor workspace, largely dependent on large mechanical systems to keep the space properly lit and cooled.

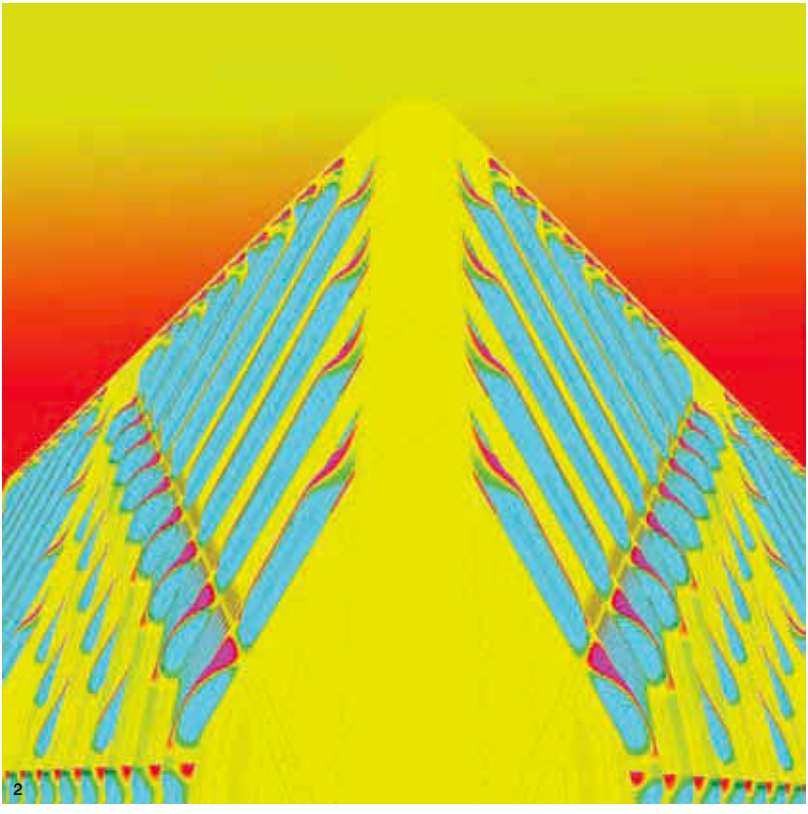
Our first design decision to maximize the size of the glass panel to produce larger transparency levels set the trajectory of the project. Slumping the glass allowed us to produce structural folds/deflections within the cross section of the glass. We were able to achieve 13-foot-square panels, versus the typical 5-by-10-foot. This afforded many advantages, one of which eliminated the excess use of extruded metal framing to support the glass panels. The structural folds/slump forming provided enough strength to support itself and the sustainable technologies that were integrated in its cross section.

In addition, we incorporated a system for harvesting moisture for occupant use and building functions. On average, LA gets 10–20 inches of rain annually, while most other major U.S. cities receive double or triple that amount. The lack of precipitation challenged us to devise alternative methods to obtain water, inducing condensation and filtering gray/black water via Living Machine.

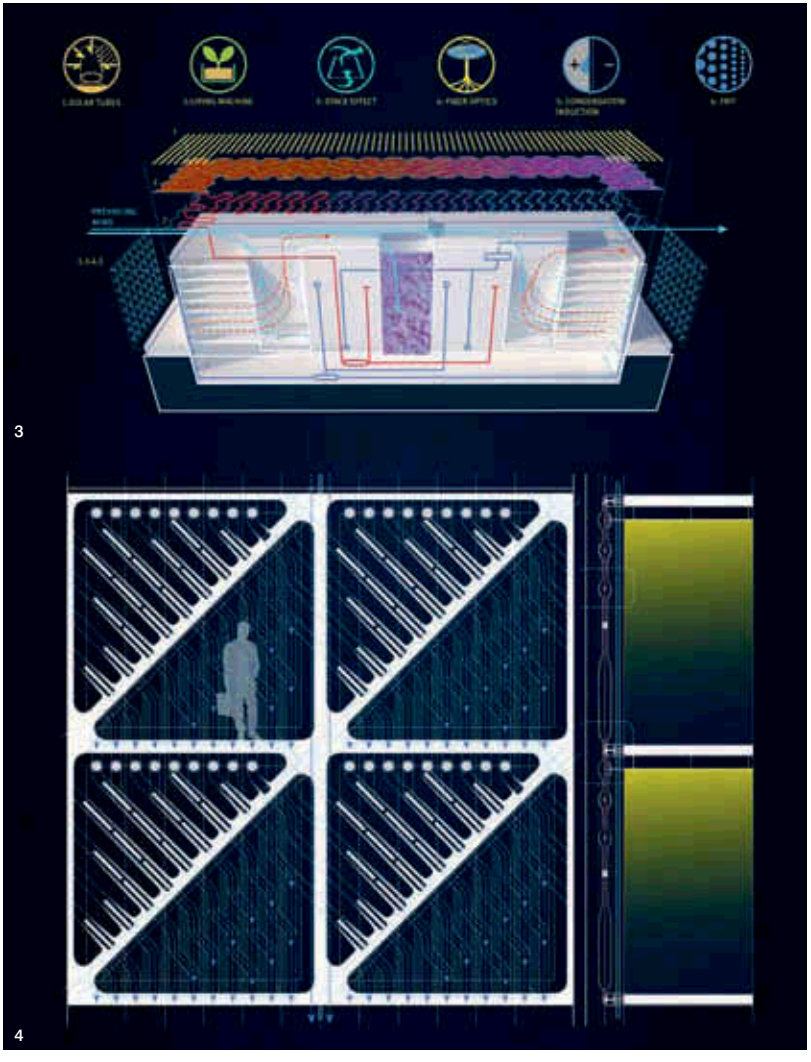


1

1: Formal diagram
2: Electric plant art



3: Sustainability diagram
4: Elevation/section



5: Interior rendering
6: Exterior rendering


5


6

Brooklyn Mosque: Penrose

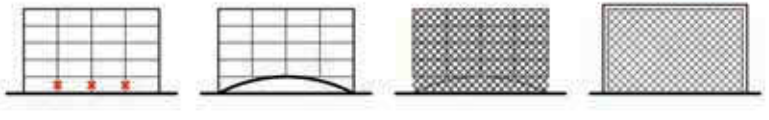
Brooklyn, New York

2011, with Peter VanHage

The premise for this twenty-first century mosque is deeply rooted in the idea of transparency. In our conversation with the client, we sought an architectural solution to reveal both the cultural connections and the spatial complexities of religious institutions within this Brooklyn community. Through site and programmatic extension, the Penrose Project is able to function both as a contemporary religious facility and an extended community center.

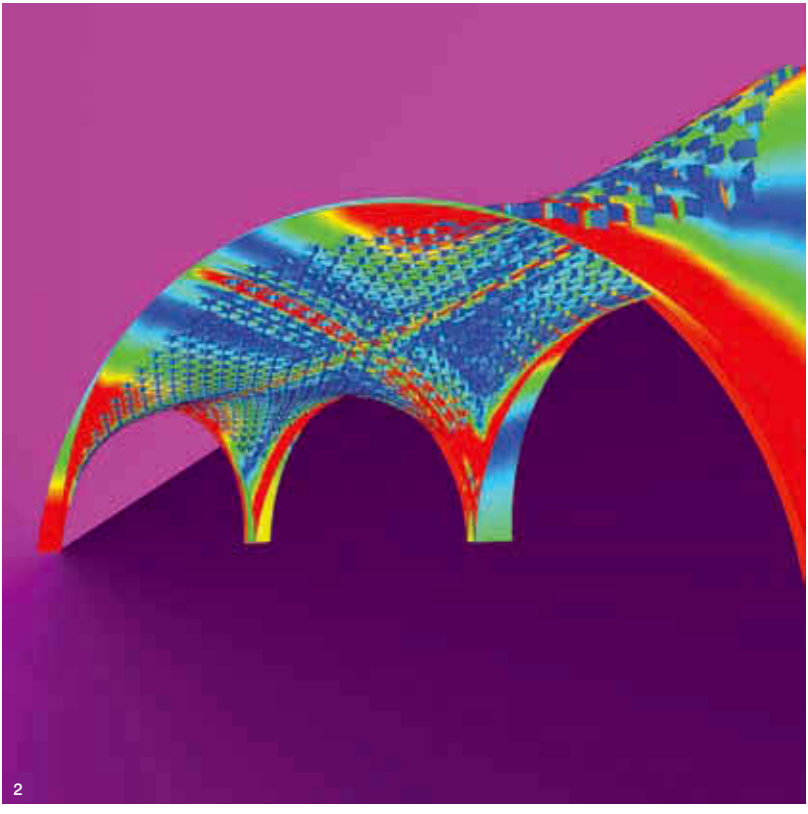
The site is situated in the Brooklyn neighborhood of Coney Island. Directly adjacent to a typical corner lot is a triangular park space produced by the intersections of three adjacent streets. In an attempt to incorporate the program of the park/public space back into the mosque, we proposed an east-facing opening using a 20-foot entry canopy at ground level, allowing the prayer space to extend out onto the park when needed. Openness was insured with six interlocked variance scale paraboloids skinned with a traditional folded Islamic star pattern. This bridged and elevated the space with an uninterrupted structure to maximize the total footprint for the prayer session. When occupancies reach above capacity, the canopy door opens to extend the prayer space landscape out onto the park.

In addition to the main prayer space, the program called for a female prayer space, kitchen, and dining room for social events; a library, children's recreation/learning space, and a living quarter for the resident imam. These spaces are serviced by a northern staircase positioned to maximize the prayer space footprint. The children's recreation/learning space is punctured by two massive skylights that are accessible from the fifth-floor exterior. The entire volume is wrapped in a large-scale glass block and skinned with a Corian facade system. This serves two purposes. Controlled defused light permeates through the facades on all sides of the building, allowing a drastic reduction of artificial light and an overall soothing atmosphere. It is also great insulation—each floor becomes its own independent tray of program. The tray segregation, combined with a skin that has a geometrical configuration, produces low-pressure zones between the exterior membrane of the glass block and the inner aluminum skin.

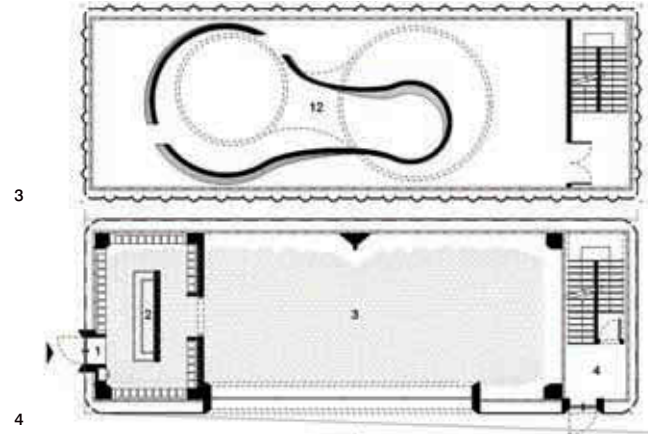


1

1: Formal diagram
2: Brooklyn Mosque art

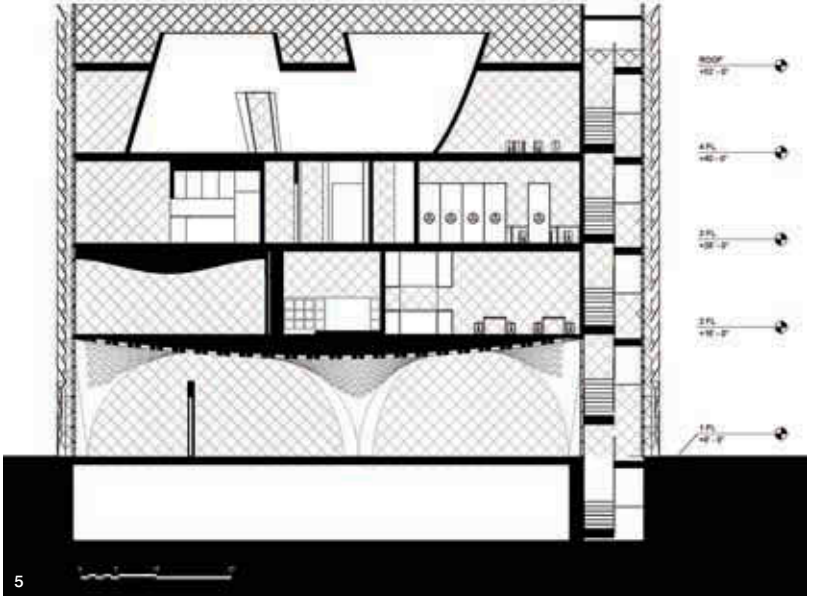


3: Fourth-floor plan
4: First-floor plan
5: Cross section



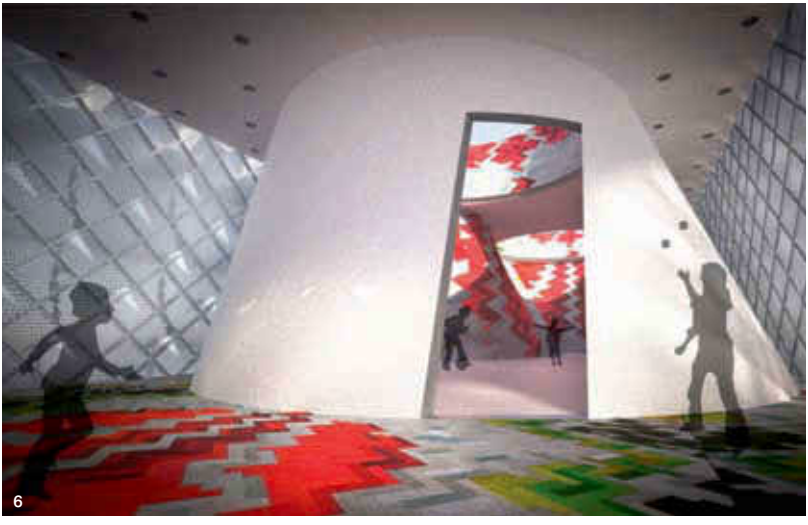
3

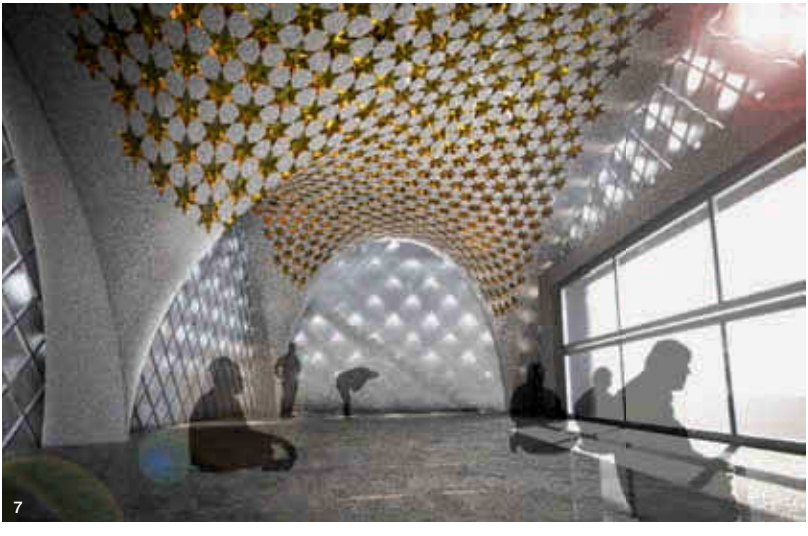
4



5

6: Children's space, interior rendering
7: Prayer space, interior rendering


6

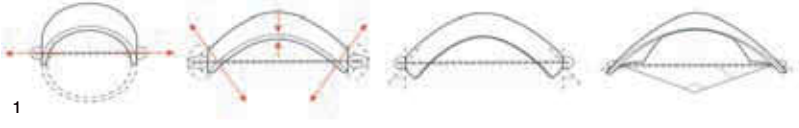

7

ARCH XXX

Chicago, Illinois

2008

The ARCH XXX is based on the form of a traditional arch, but deformed to span 30 feet along its longer edge and 15 feet along its shorter edge. This lightweight structure began by considering the structural qualities of vinyl. Weak at first, it can sustain greater compression forces when folded into thickened bricks. This project also served as a workflow prototype that incorporated a virtual awareness in a material tectonic. We came to understand the cell unit (cube-octahedron) geometry and its 3-D position in the world, and we incorporated the vector forces that would subsequently play themselves out on the larger field of the arch. This meant that every component within the set would be different (over three thousand modules) and the inherent morphology of the thickened brick needed to modulate its shape to perform optimally. In this case, the project allowed us to explore larger questions about digital fabrication and its economy of means of production and installation.

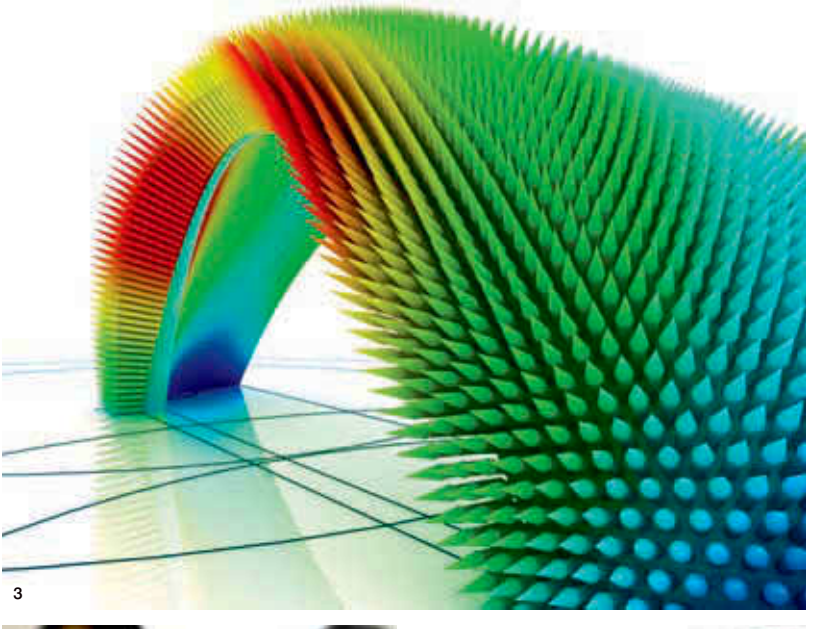


1

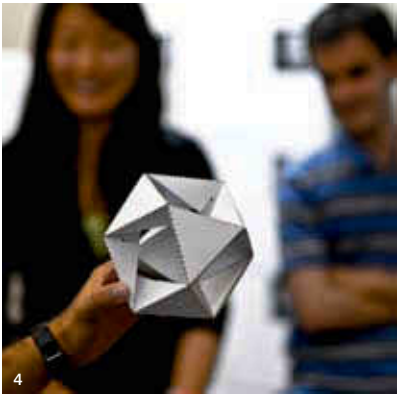
1: Formal diagram
2: Photograph

2

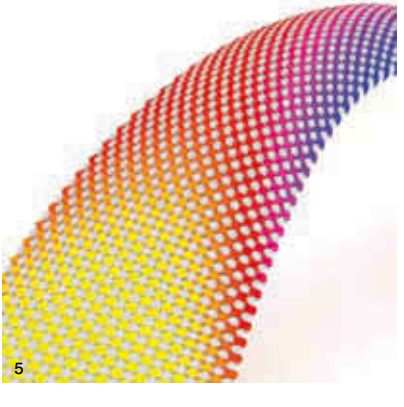
3: Analysis: curvature/surface normals
4: Photograph of female module
5: Analysis: modulation transformation



3

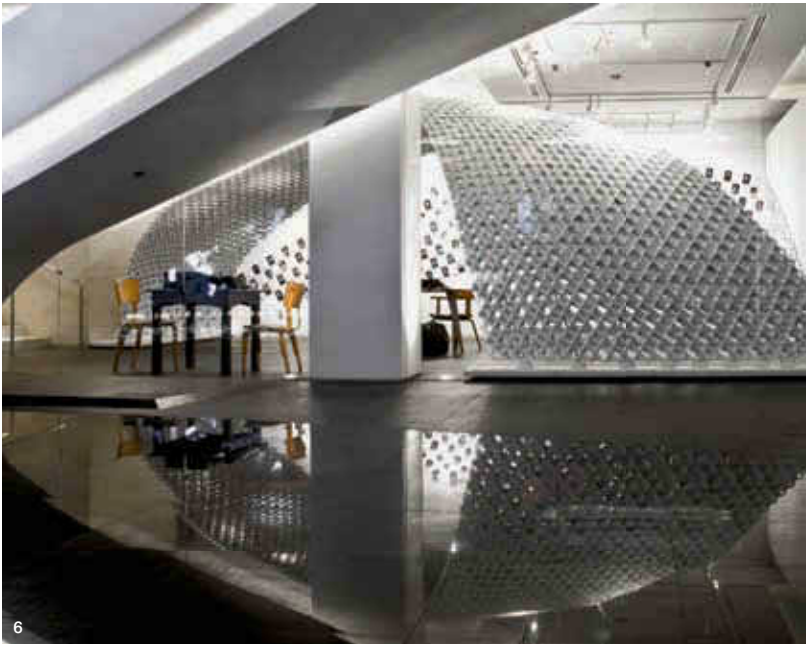


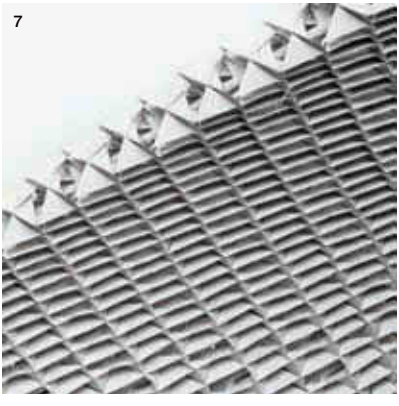
4



5

6: Photograph
7–8: Details


6


7


8

Future Cities Lab

It's different. It's no longer pure; it's scrappy, messy, hybridized, connected, and alive. To survive, Future Cities Lab has had to be inventive, nomadic, and promiscuous. We have had to experiment with and deploy a range of ideas and tactics from fields outside our discipline, including geography, robotics, biology, material sciences, and advanced fabrication, to name a few. The results are often unexpectedly grotesque and at odds with what our educations have prepared us for. We use the term *live models* to describe what we make and differentiate how we practice. Live models are dynamic formations that register and continuously adapt to shifting conditions, and they require multiple inputs—some say participants—to thrive. These models can be used as analytical engines to understand the social, cultural, or ecological patterns around us, and as conceptual frameworks for architecture.

The most compelling of these models do not merely depict appearances but also seek to reveal the irreducible nature and behavior of processes in transition. Not only are they capable of calculating the underlying logic of these processes, but they also reveal emerging organizations in visually discernible patterns. These models yield dynamic and spatial cartographies that are latent with real-time, open-source, user-generated data. With the advent of immersive technologies, they are rapidly becoming experiential worlds unto themselves. These worlds blur distinctions between models as mere depictions and models as vital sensorial spaces that are live and impregnated with valuable data. What differentiates our practice is our willingness to wade into this complexity and relish in the ever-evolving and uninhibited terrain of design.

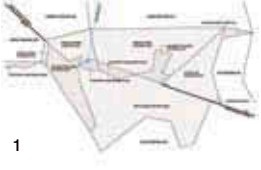
Aurora

Van Alen Institute, New York, New York

Gallery installation, 2009, with Carrie Norman and Thomas Kelley

Aurora is an index of shifting territorial resources in the Arctic and a speculative vision for a massive new energy infrastructure and settlement pattern. Aurora suggests an alternative approach to the exploration, exploitation, and inevitable colonization of the region. It is simultaneously a projection of an imminent environmental condition and the materialization of how contemporary political, social, and ecological trends may be channeled toward a more productive future. Aurora comprised of two interrelated explorations, Terra Incognita and the Aurora Model. Terra Incognita consisted of maps and diagrams that provided a view into how the Arctic region has been represented, claimed, and mythologized in the past and present. The main interactive piece, the Aurora Model, superimposed the ephemeral qualities of these representations on the dynamic behavior of multiple users, translating the shifting dimensions of the ice into a responsive light field.

With the support of Van Alen Institute, the University of Michigan, and the Graham Foundation.



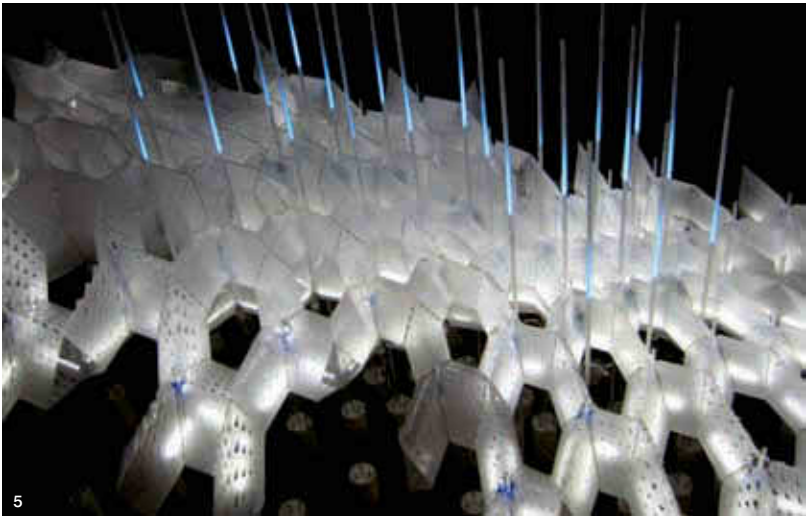
1

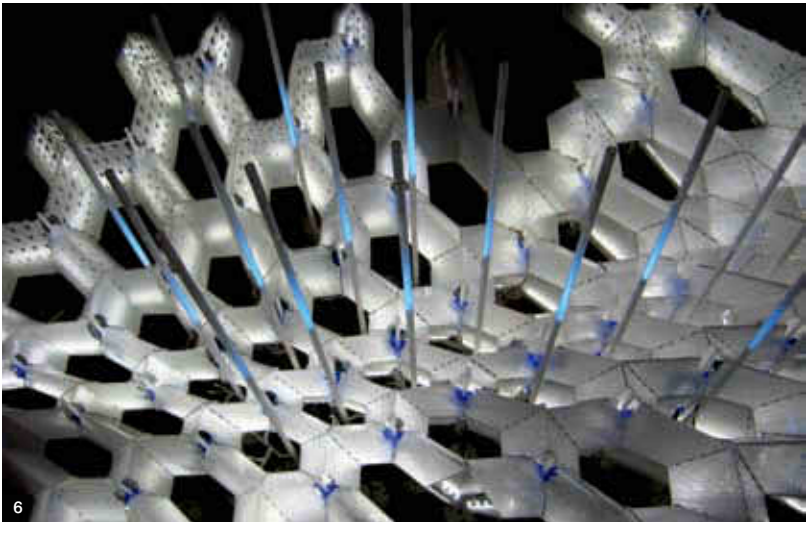
2

3

4

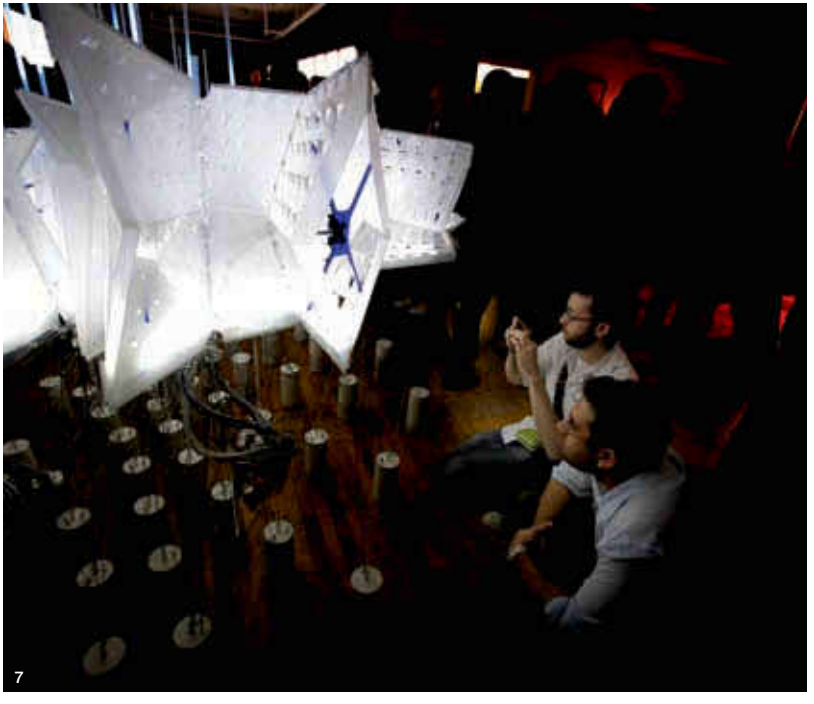
1–3: Mapping the Arctic: disputed territories; ice shelf boundary, 1987–2007; and three-day Arctic buoy path
4: Aurora project opening night
5: View of the blue cold cathode tube lights emerging from the surface
6: View from above of Aurora's variegated hexagonal network


5


6

7: View from below the embedded infrared sensor network's blue spiders

8: Approaching the model causes the LEDs embedded in the surface to dim and the blue cold cathode tubes to brighten.



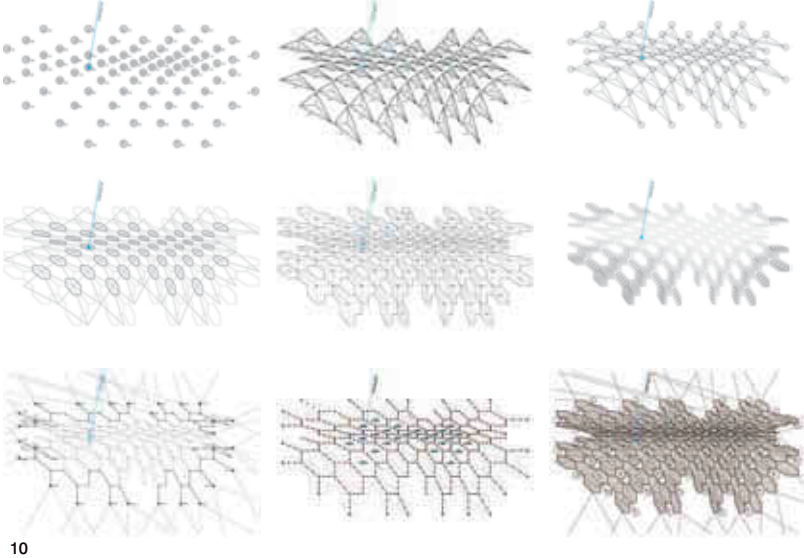
7

8

9: The model is made up of four layers: the plaster-cast buoys at the base, the supporting stainless steel framework, the suspended PETG plastic surface, and blue cold cathode tube lights.

10: Aurora surface layers

9

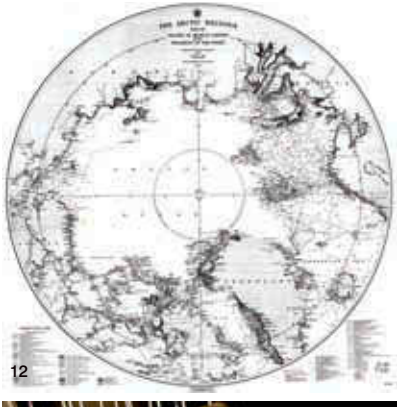


10

11: Gerhard Mercator, "Septentrionalium Terrarum Descriptio," 1595, courtesy of the Map Library at the University of Michigan
12: U.S. Navy, "The Arctic Regions with the Tracks of Search Parties and the Progress of Discovery," 1896, courtesy of the Map Library at the University of Michigan

13–18: Wiring the Aurora surface


11


12


13


14

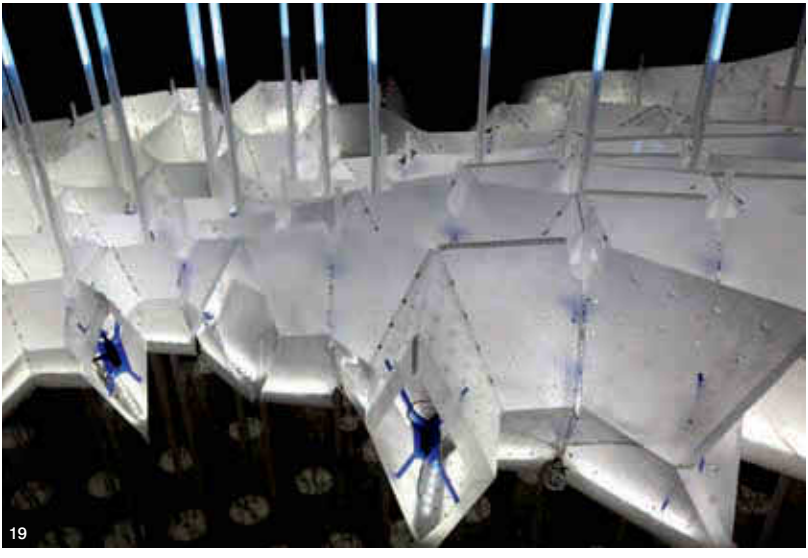

15


16


17


18

19: Variable thickness of surface is dependent on the age of the ice
20: Suspended surface of Aurora


19


20

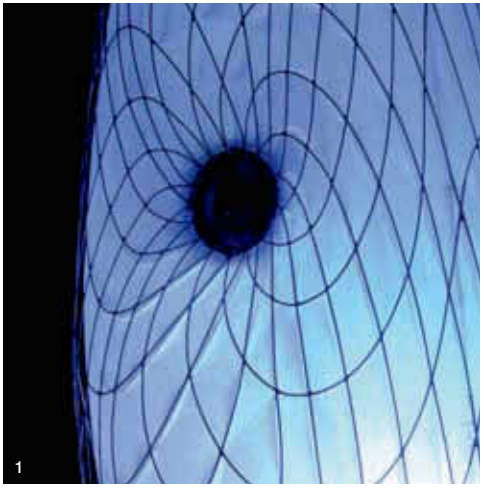
Glaciarium

Van Alen Institute, New York, New York

Gallery installation, 2009, with Thomas Kelley, Carrie Norman, and Troy Rogers

The Glaciarium is an interactive instrument that engages a smaller group of users' senses through the sight and sound of a melting ice core. The influence of the individual viewer is linked directly to the materiality and sensation of the project. Increased observation amplifies the internal lighting effects and, depending on the duration of interaction, dramatically accelerates the melting of the ice core, rendering the environmental degradation visceral and real.

With the support of Van Alen Institute, the University of Michigan, and the Graham Foundation.


1

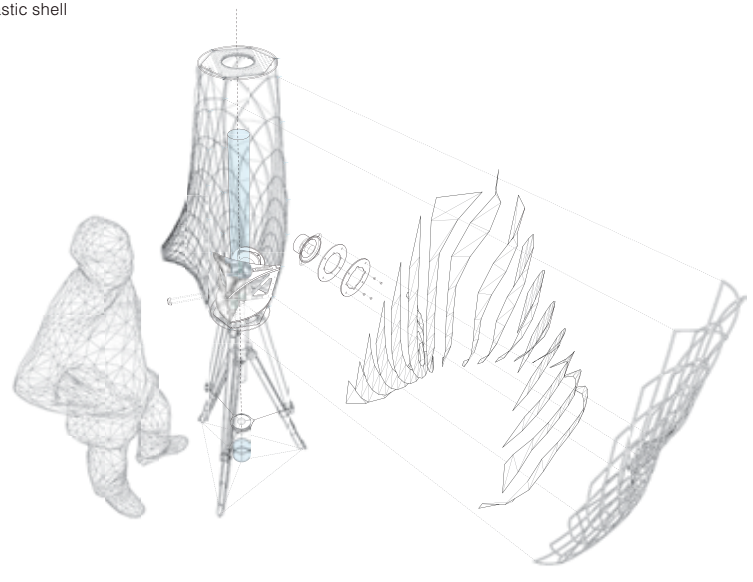

2


3


4


5

1: View of the stainless steel exoskeleton, glowing PETG plastic shell, and speaker
2: CNC-milled molds for the fabrication of the stainless steel exoskeleton
3–5: Fabrication of stainless steel diagrid and PETG plastic shell
6: Exploded axonometric of exoskeleton, shell, ice core, and electronics
7: View into Glaciarium of the melting ice core

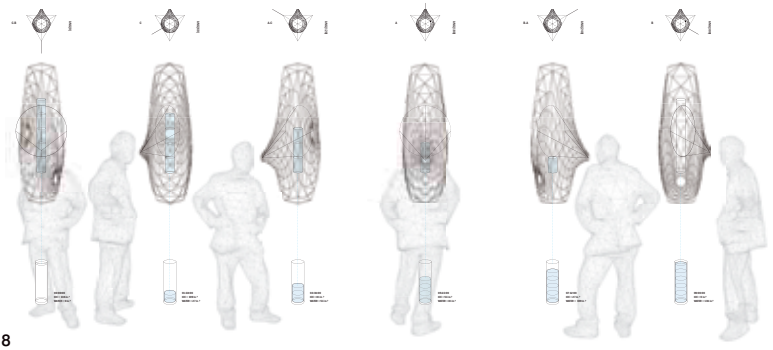


6

7

8: Twelve-hour melting cycle
9: Looking into Glaciarium triggers a heat lamp that increases the ice's melting rate

10: A contact microphone at the base and speakers embedded in the surface amplify the sound of melting ice back into the gallery.



8

9

10

11: Viewing aperture and one of the two embedded stereo speakers

Super Galaxy

New York, New York

Competition entry, 2006, with Carrie Norman, Beth Haber, and Thomas Kelley

Super Galaxy is an architectural system saturated with atmospheric and electronic phenomena. It is a nomadic enclave, its features in an endless state of spatial and material flux. As it fluctuates between states of varying coherence (solid, liquid, and gaseous), its inner structure maintains an invisible yet definable pattern. It is a responsive system capable of dynamically interacting with its surroundings on many levels. It is in a constant state of motion as it calibrates and recalibrates relative to both real-time global (weather, pollution, warfare, etc.) and local (desired micro-climates, heat exchange, light, and sound) datasets.

1

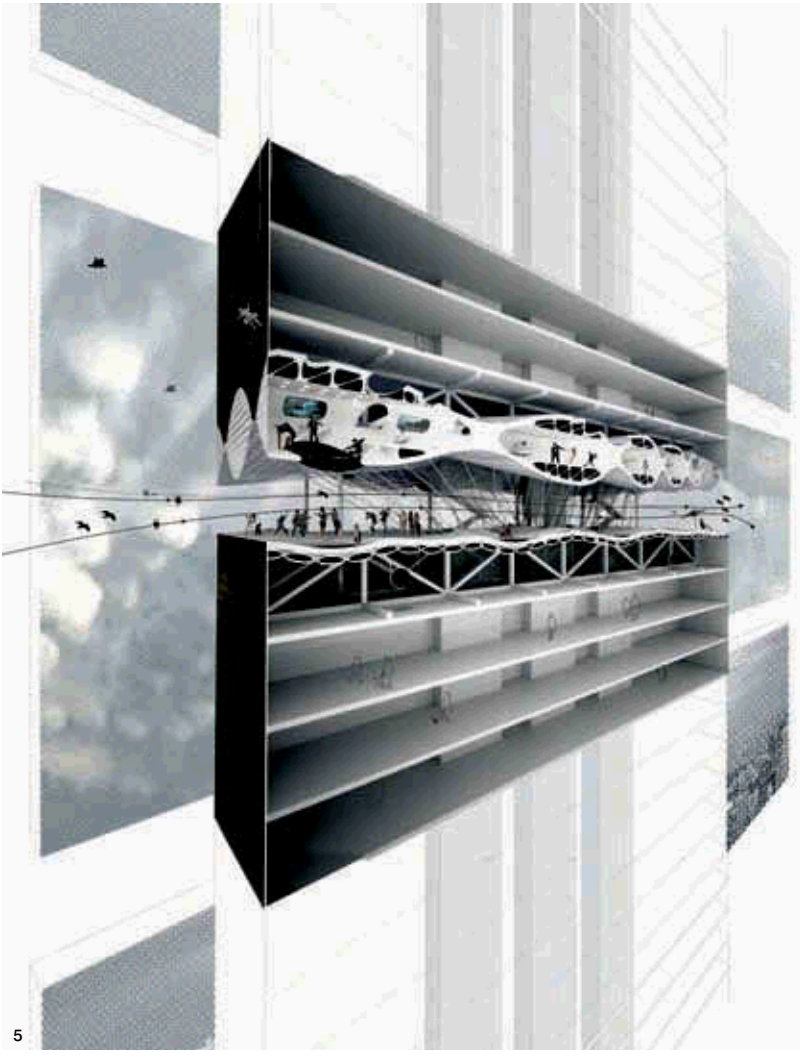
2

3

4

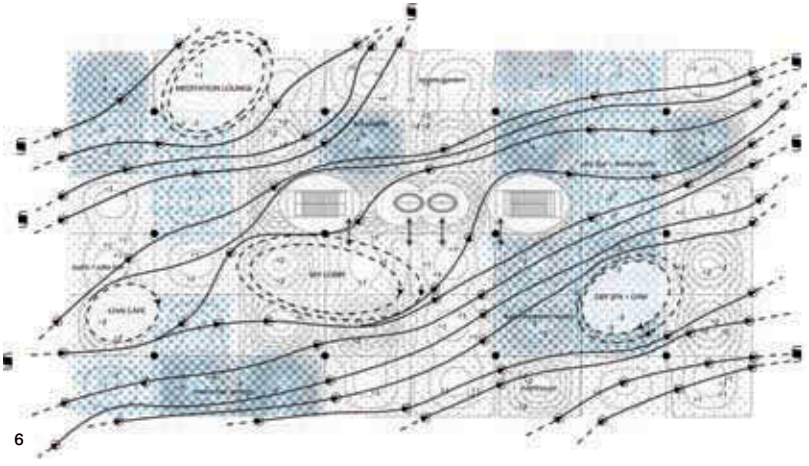
1: View of open air public space with sleeping pods suspended above. The ground is inscribed with forecasted weather patterns and real-time data.
2–4: Physical model

5: Super Galaxy is embedded within an existing tower building, opening it up to the elements and weather.

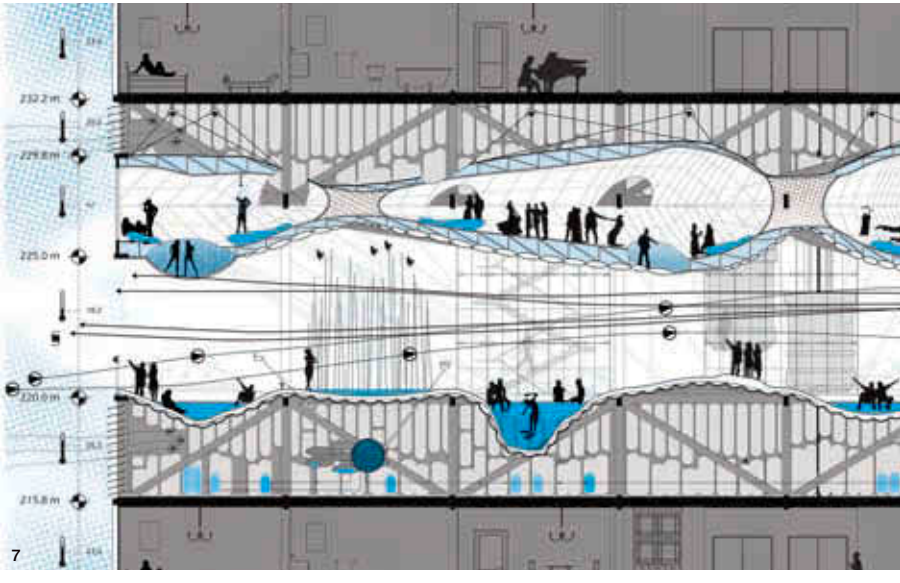


5

6: Moisture map of water collecting robotic "ground" surface
7: Long section showing the stratification of the project



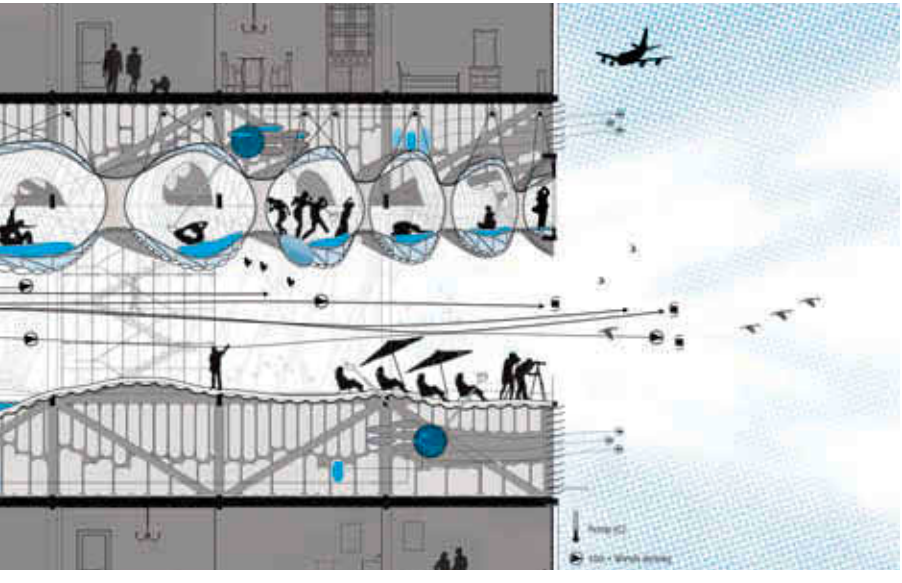
6



7

8: Looking out to the horizon for the next incoming weather pattern


8



Vivisys

Extension Gallery, Chicago, Illinois

Gallery installation, 2007, with Troy Rogers

Vivisys is an experimental, double-curved acrylic lattice vault that plays host to an extraordinary cluster of CNC-prototyped metallic barnacles. A robotic soundscape, composed of networked auroras of electron-emitting cold cathode tubes, responds to interactions from the environment. This increased interaction heightens the intensity of the soundscape. Vivisys synthesizes both organic and manufactured patterns into a design framework for energy, form, and matter.

1

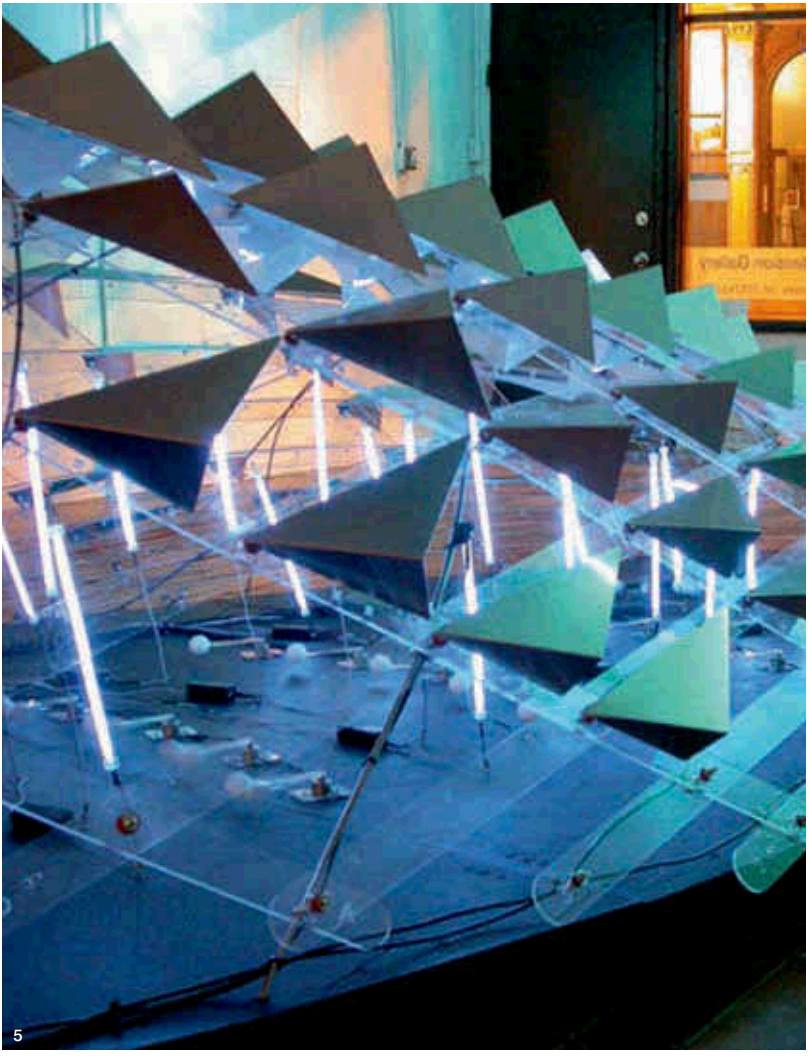
2

3

4

1: View of the gallery installation
2: CNC-milled aluminum barnacles
3–4: Acrylic scissor structure expanded and compressed

5: Side view of aluminum barnacles, acrylic lattice framework, CRT lighting, infrared sensors, and custom-made solenoid rattlers


5

Thermaespheres

Athens, Greece

Public pavilion, 2011, with Ripon DeLeon

Thermaespheres is a proposal for a public thermal bath and event pavilion facing the Mediterranean Sea. It contains three distinct microclimates: the *caldarium* (hot), the *tepidarium* (warm) and the *frigidarium* (cold). These three intersecting domed spaces are surrounded by a lightweight shade canopy that serves as an urban threshold, public promenade, solar energy collector, and microclimate generator. The structural system was developed through a series of catenary experiments that describe the structural and microclimatic performance of the canopy.


1

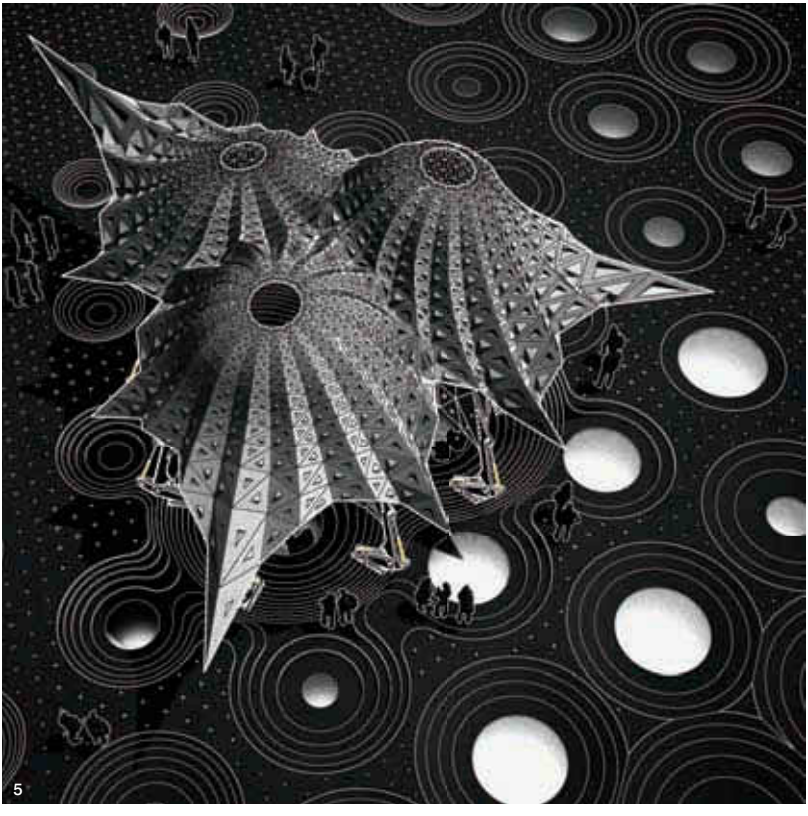

2

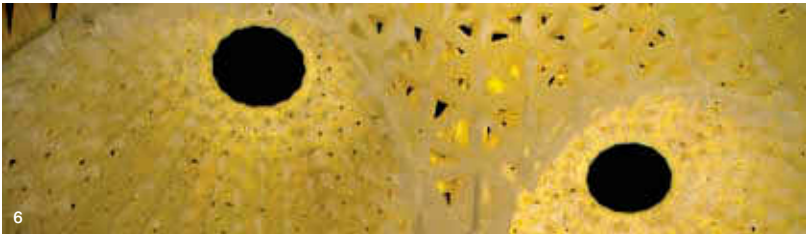

3


4

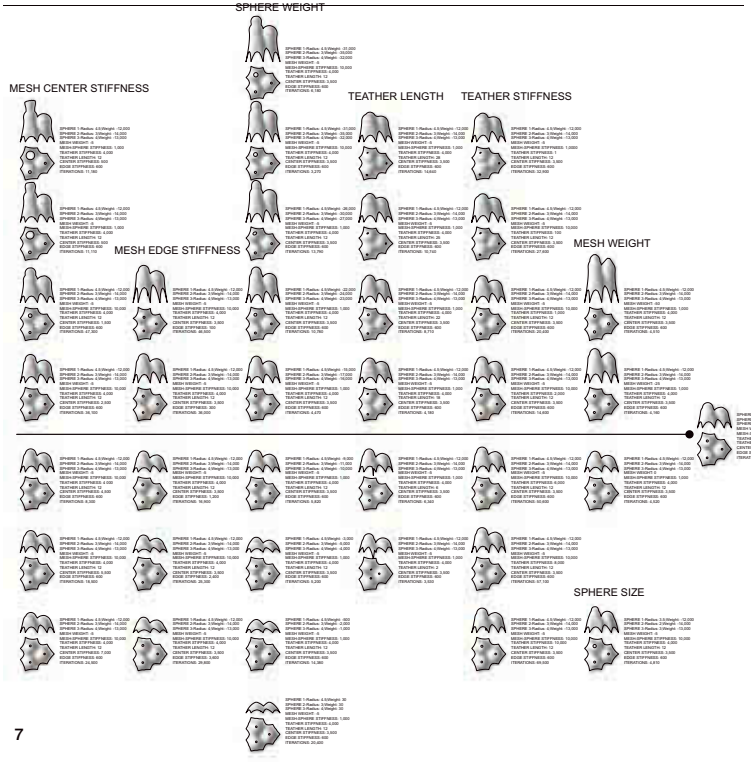
1: Perspective view between the ground and the climatic layers of the canopy
2–4: Process model

5: Aerial view with larger landscape framework of water catchment and urban activation
6: View into physical model of connection point between three spaces


5


6

7: Family tree of physics-based geometric parameters
8–10: Fabrication of physical model



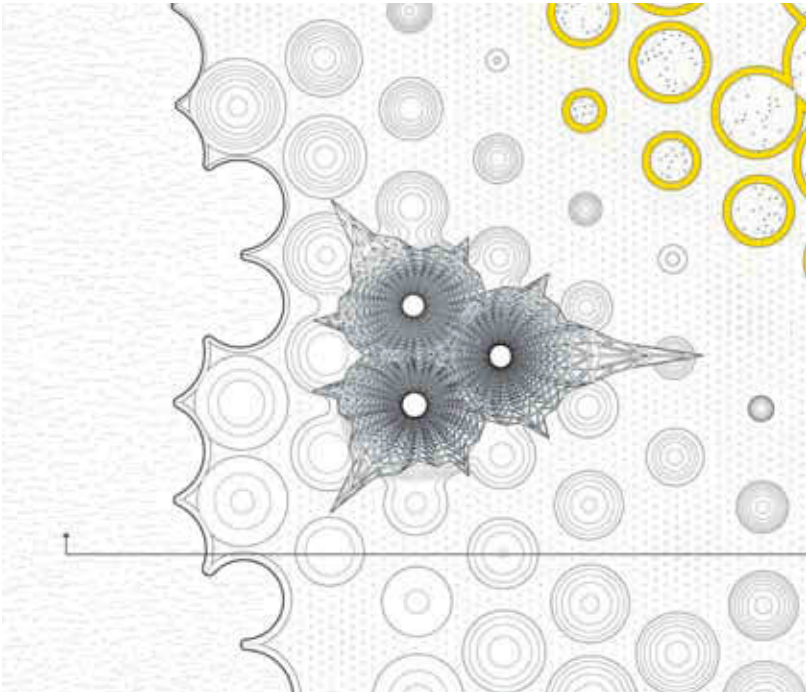
7


8


9


10

11: Site plan showing proximity to the Mediterranean Sea
12–14: View of physical model



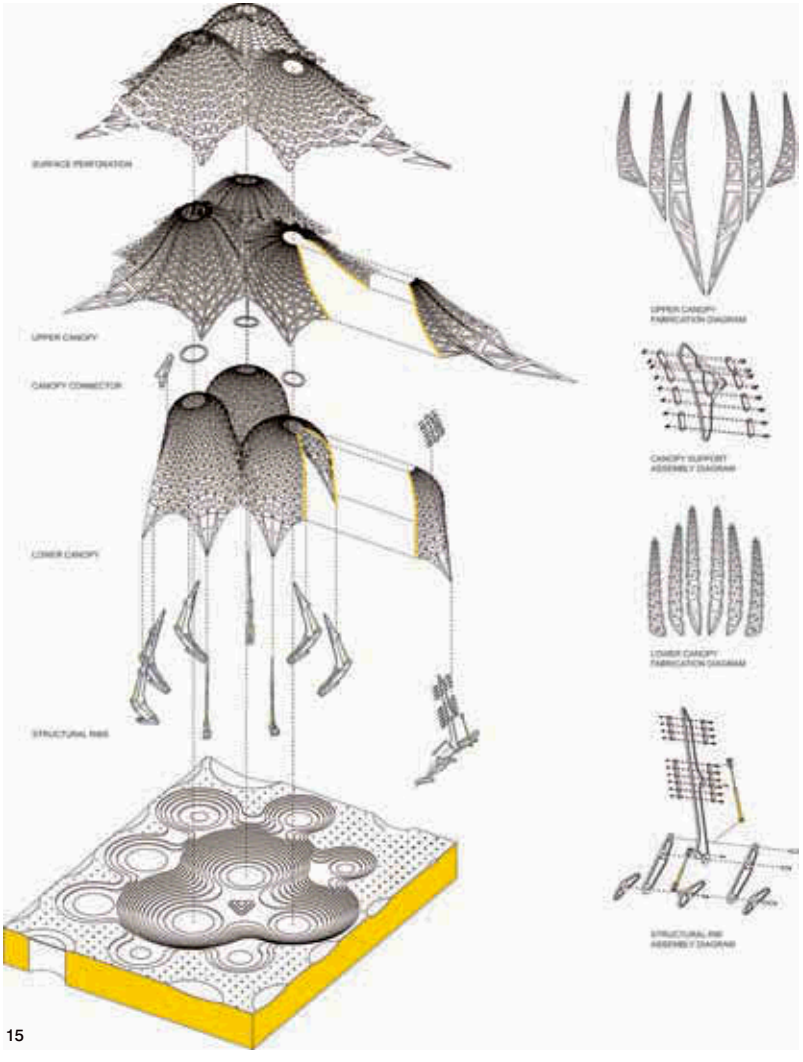
11

12

13

14

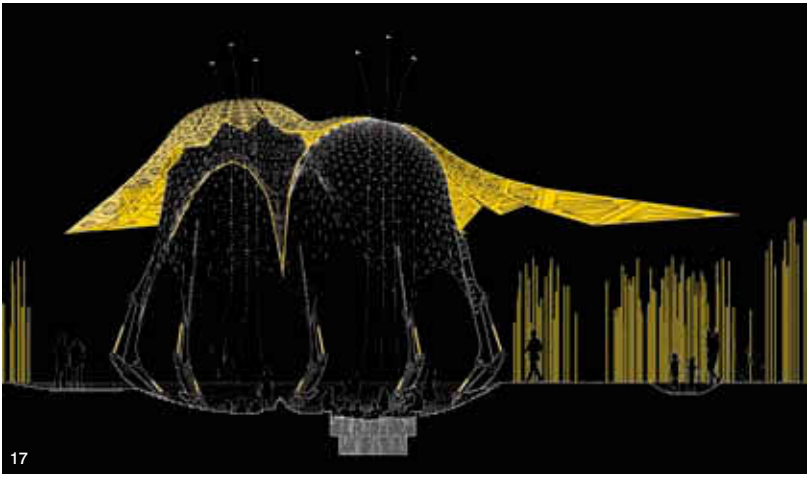
15: Exploded axonometric of canopy components



15

16: Top view of physical model
17: Section through the canopy and thermal baths


16


17

Xeromax Envelope

Pratt Manhattan Gallery, New York, New York

Gallery installation, 2010

Xeromax Envelope is a quarter-scale experiment for a responsive building envelope calibrated and tuned to its environment. Part robotic structure, part experimental interface, and part microclimatic machine, it registers energy cycles and interactions over time while harvesting solar energy and protecting the building from the local climate. Xeromax Envelope is proposed as a second skin for an existing building and becomes a register of present and forecasted conditions. The model weaves ultra-thin custom actuators, arrays of light, and proximity sensors through the extent of the surface which transforms as it registers the changing conditions around it.


1


2


3


4


5

1: Actuation mechanism embedded into the back of the synthetic paper and PETG plastic surface
2: Robotic petals close when the infrared sensor is triggered.
3–5: Fabrication and assembly of surface
6: View of the gallery installation
7–9: Fabrication and assembly of electronics


6


7


8


9

Kiel Moe

Explications

Philosopher Peter Sloterdijk has suggested that history has not been a process of revolutionary modernization; rather, it has been a process of explication. In his terms, explication is "the revealing inclusion of latencies and background data in manifest operations." If there will be paradigm shifts and differences that make a difference in my generation, these differential shifts will likely emerge from an overt methodology of explicating prior practices and operations. My work is based on a process of parallel technical and historical explication that strategically questions fundamental latencies, practices, and assumptions of twentieth-century architecture, and engenders alternate design approaches that advance the specificity and agency of architecture—my core ambition—in a context characterized by rapid changes, new obligations, and thus new opportunities. My work has focused on three primary matter/energy latencies:

> Architecture based on thermally active surfaces rather than air conditioning: a paradigm that finally activates the corpus of the body and the building in the same thermodynamic space for a cascading set of advantages for the discipline of architecture.
>
> Lower-technology, higher-performance architecture rather than the obsolescence of higher-technology, lower-performance approaches: a mongrel paradigm of durability, adaptability, and resilience that leverages the intelligence of archaic and contemporary techniques as a cogent path forward.
>
> Matter is but captured energy: energy and material logics have been taught, designed, and engineered as disparate entities. An alternate, integrated paradigm conflates energy and matter, the intensive and extensive logics of architecture, and, ultimately, architecture's objectivity and objecthood.

Through a reciprocating cycle of practice, funded research, writing, consulting, teaching and fabrication, I seek innovation from within the hard logics and working procedures of architecture as one example of new roles for the architect in this century.

I would like to thank Ron Mason, Cheyne Owens, Jacob Mans, and Amit Oza.

StackHaus

The Georgia Bar, Colorado

2008

This project is one of seven design/build projects on the site. A small building, StackHaus is used as a yoga studio, a painting studio, and a performance space for recitals, plays, and readings. Situated atop a hill surrounded by the Collegiate Peaks mountains in central Colorado and overlooking the Arkansas River Valley, the building captures several significant views of the adjacent landscape.

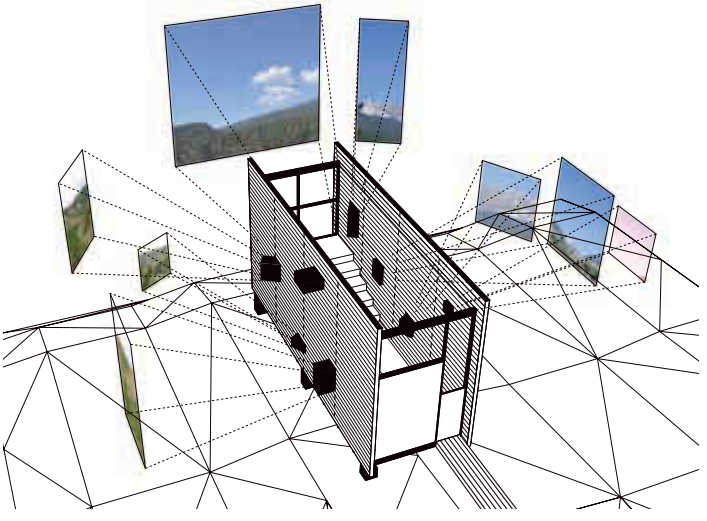
1

2

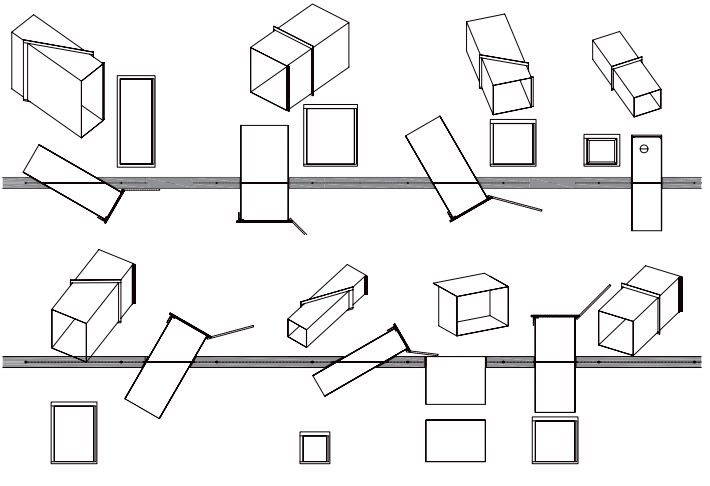
1: Upper Arkansas River Valley
2: East facade
3: South facade


3

4: Windows and views
5: Steel window boxes



4

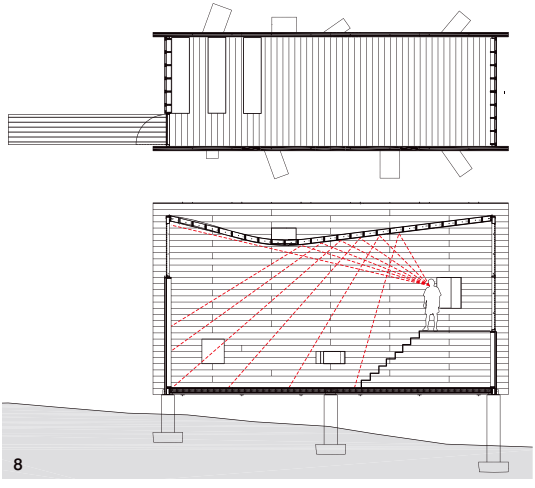


5

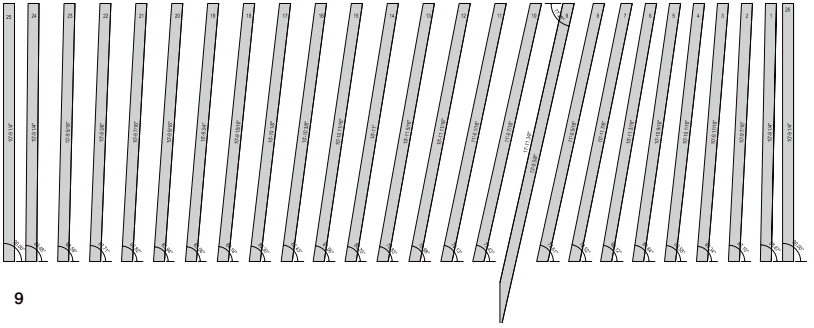
6: Interior
7: Interior
8: Plan and section


6


7


8

9: Ruled surface roof framing
10: Ruled surface
11: Ceiling belly



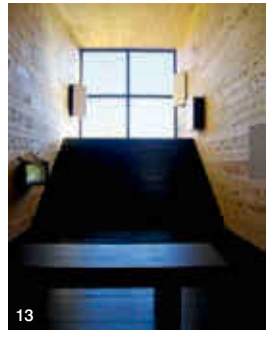
9

10

11

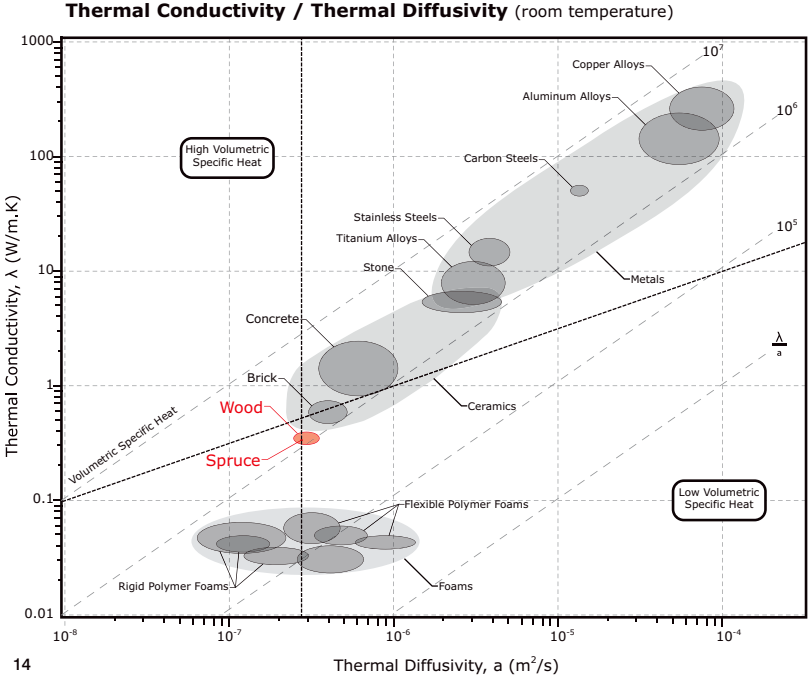
12: Construction sequence
13: Interior

12

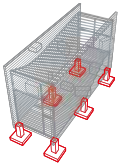


13

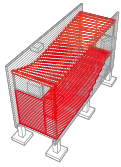
The construction system utilizes spruce timbers for the structure, insulation, finish materials, and enclosure of the walls and floor. The roof is a ruled surface that pitches water and snow to a single scupper on the east wall. This roof also gives the ceiling an asymmetrical belly that casts light and sound about the interior. The unique thermal conductivity and diffusivity of the spruce timbers are used in both the summer and the winter to modulate the thermal swings of the climate and seasons; a thermally active surface approach with no energy input other than sunlight.



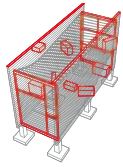
15: Embodied carbon



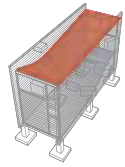
CONCRETE 869 kgCO2



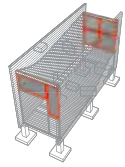
OTHER WOOD 1,052kgCO2



STEEL 4,134 kgCO2



BITUMEN 80 kgCO2



GLAZING 409 kgCO2

TIMBER 2,454 kgCO2

Carbon and Energy Sink

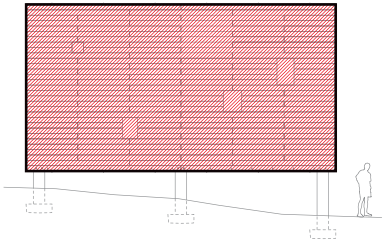
Material[1]		**ft²**	**pounds**	**meters²**	**kg**	**EE (MJ)**	**EC (kgCO2)**
Timber		784.00	18,032.00	22.20	8,179.18	16,358.36	2,453.75
Lumber		99.52	2,817.93	2.82	1,278.19	9,458.62	575.19
Plywood		45.06	1,592.36	1.28	722.28	7,484.08	476.49
Steel		47.00	5,148.64	1.33	2,335.39	31,761.24	4,133.63
Concrete		99.00	14,850.00	2.80	6,735.85	6,399.05	868.92
Glazing		7.38	1,062.00	0.21	481.72	7,225.73	409.46
Other materials		6.62	238.92	0.19	157.36	2,346.99	79.68
	totals	**1,088.57**	**43,741.85**	**30.82**	**19,889.96**	**81,034.06**	**8,997.13**
timber %				72.02%	41.12%	20.19%	27.27%

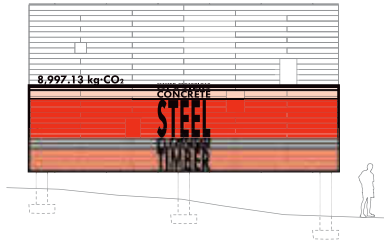
Timber Global Equivalent Carbon Sequestration[2] -792 kgCo2eq./m^3 **-17582.72** kgCO2 eq.

NET CARBON SEQUESTRATION **-8585.59** kgCO2 eq.

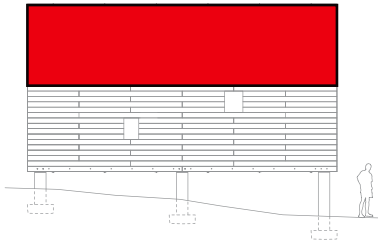
1. Geoff Hammond and Craig Jones. *Inventory of Carbon and Energy (ICE)* . Version 1.6a. 2008
2. Hegger, Manfred, Matthias Fuchs, Thomas Stark, and Martin Zeumer. *Energy Manual: Sustainable Architecture* . Birkhauser, 2008. Table B5.53 p. 161

-17,582.72 kg·CO_2 EQ GWP (CARBON SINK CAPACITY)





-8,585.59 kg·CO2 EQ. GWP *SURPLUS*

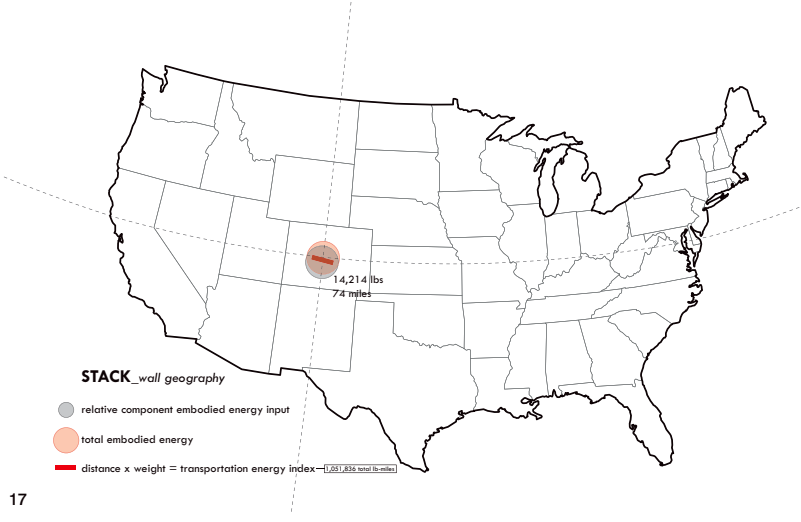


16: Window

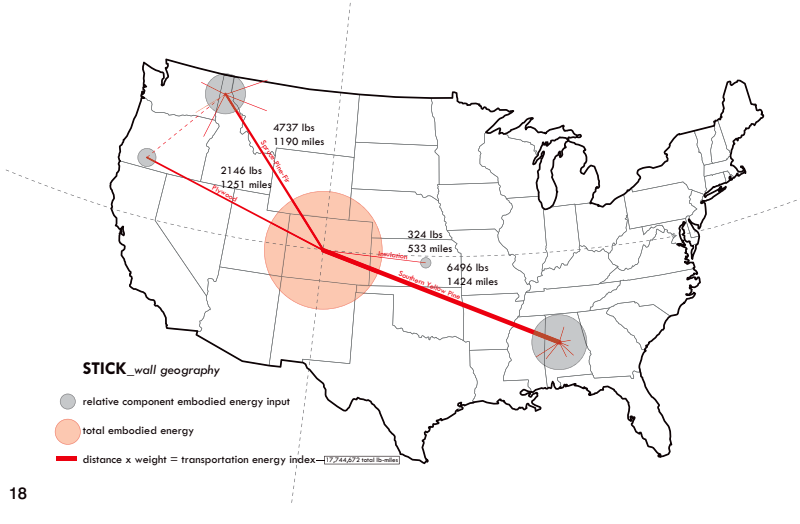
The wood for this project was harvested, dried, and milled in the valley of the site. Consequently, despite the massive amounts of material used in the project, the building has an incredibly small amount of embodied energy. Further, given that wood is the only building material that sequesters carbon—it is a carbon sink, not a carbon source—this solid-wood project has sequestered twice as much carbon than it took to produce the building itself. This explication of a material in practice challenges many received notions about technology, sustainability, and what should be "contemporary." In sum, this building has no operational energy loads and is a true carbon sink. Contrary to a paradigm of efficiency, it is the maximal use of a material for architecture that yields a carbon surplus.

16

17: Stack material geography
18: Stick material geography



17



18

MassivHaus

Competition entry

2010

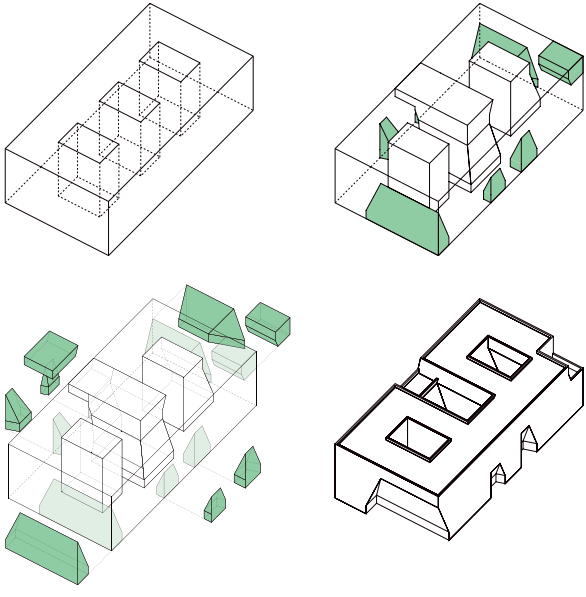
As design practices target net-zero operational energy buildings through integrated design strategies such as sensible daylighting, studied solar control, ground-source thermally active surface heating and cooling, and high-performance building envelopes, the topic of embodied energy becomes ever more pertinent. The best path toward minimizing embodied energy content is through design that amplifies the critical capacities of durability, adaptability, and resilience. These capacities are generally not possible in the excessively additive mentality of contemporary construction logics driven by a dynamic of obsolescence. Rather, the resource investments inherent in a building and its systems must now be amortized over many generations, lowering the embodied energy values per generation in each successive generation through sustained use.

MassivHaus, based on the fundamental unit of the brick, deploys a set of lower-technology techniques that make this masonry office building more durable, adaptable, and resilient. First, the building uses high-performance load-bearing masonry walls and a thermally active concrete structure to maximize durability. The masonry walls are durable formwork for lower-weight, air-entrained concrete with a low U-value.

1

1: Exterior from southwest
2: Aerial context
3: Brick massing sequence

2



3

4: Glazing ratios

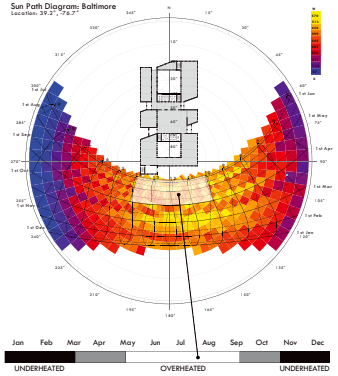
The exterior walls are quite thick because the lower pounds per square inch (psi) of lightweight concrete requires more mass to perform structurally. This thickness, in turn, uses the millions of entrained air pockets both for its insulation strategy and for managing vapor and dew point condensation, giving it the capacity to breathe once psychrometric conditions have changed, illustrated by models produced in THERM and WUFI.

Strategies

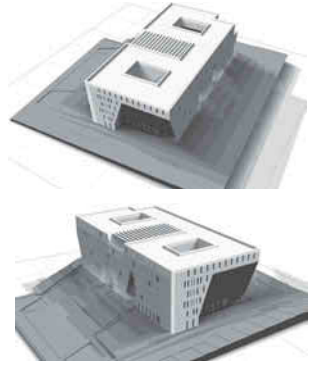
The load-bearing masonry walls in this project corbel out in strategic locations to form self-shading facades, building entries, loading docks, terraces, inflected and raked courtyard surfaces, and responses to the building site. Tectonic figuration of the building beneficially impacts the planning of the building as well. Like the elevations, building planning is guided by principles of default regularity and specifically generic conditions. These principles generate both expanses of open, flexible space and more idiosyncratic pockets that are, together, open to a range of unforeseen uses. The floor-plate dimensions are well-suited for daylight penetration and ventilation strategies. A catalog of window- and wall-opening types engenders both economy and differentiated repetition that animate the facade through shadow and diagonal patterning. These principles illustrate a next-use approach to design (in which the spaces could ultimately be good for office, residential, cultural, or other uses). Since use is ultimately seen as a variable, there is greater emphasis on the other functions of the building such as its

4

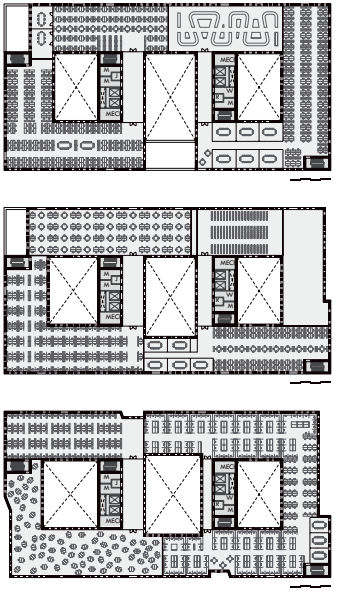
5: Balance point temperature
6: Self-shading south facade
7: Plans, top to bottom



5

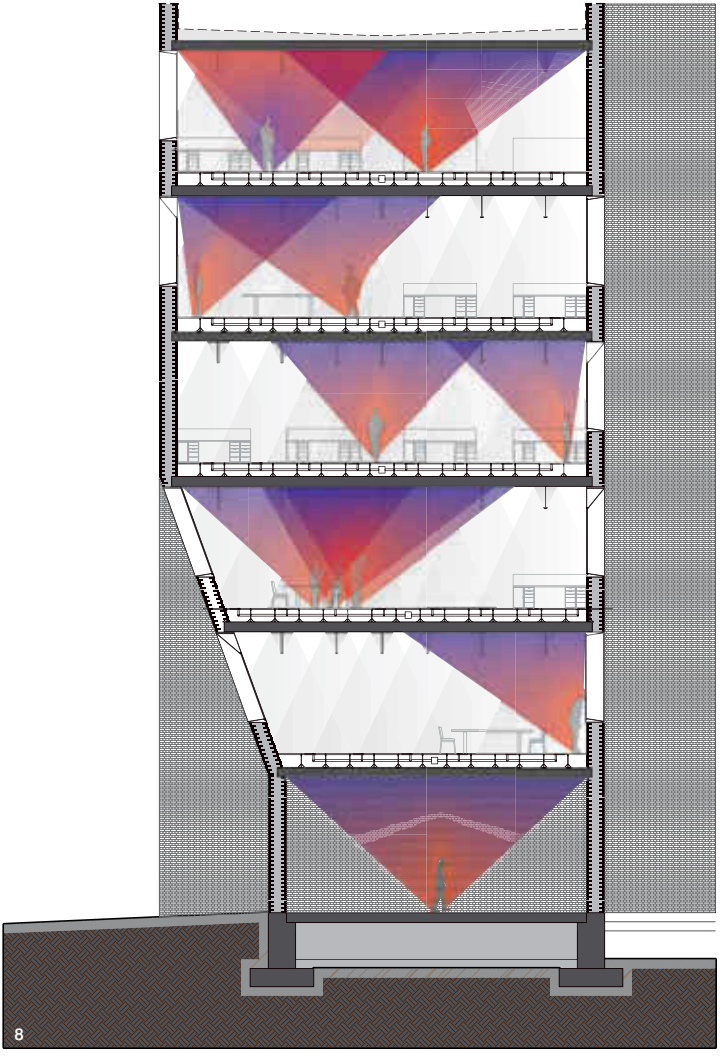


6



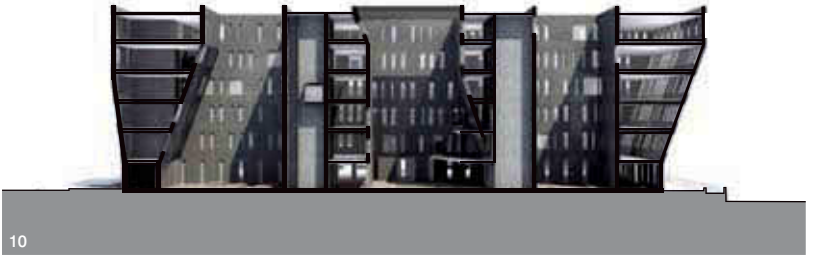
7

8: Thermally active section

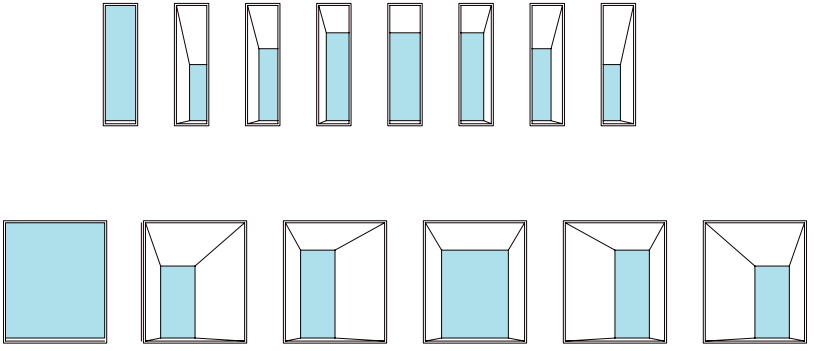


9: Southeast corner
10: Section perspective of courtyards


9


10

11: Window types
12: Exterior from northeast

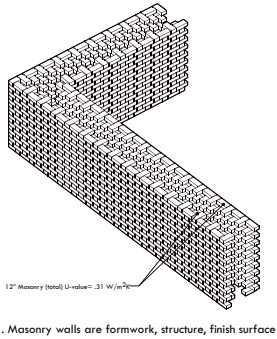


11

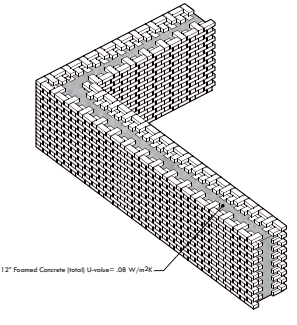
12

13: Masonry assembly and performance

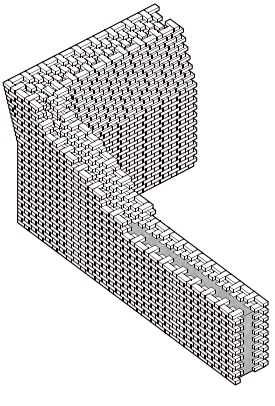
integrated design performances. As such, it interlocks operational and embodied energy logics, building figuration, and life-cycle planning within the logic of the brick. The fundamental ambition here is to merge formal, tectonic, climatic, and thermodynamic strategies into one architectural agency for a building that engenders additional (increasingly necessary and truly complex) self-catalytic performance capacities of durability, adaptability, tolerance, and, most importantly, resilience. These are fundamental to the quality of life of architecture in this century.



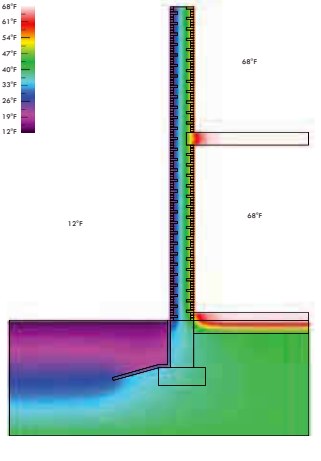
1. Masonry walls are formwork, structure, finish surface



2. Air-entrained insulating concrete pour (4' lifts)



3. Masonry assembly continues, cobeling begins
The foamed concrete provides a continuous thermal envelope.
The low thermal diffusivity of the inner layer of masonry provides good thermal mass effects and a secondary thermal surface.



TubeHaus

The Georgia Bar, Colorado

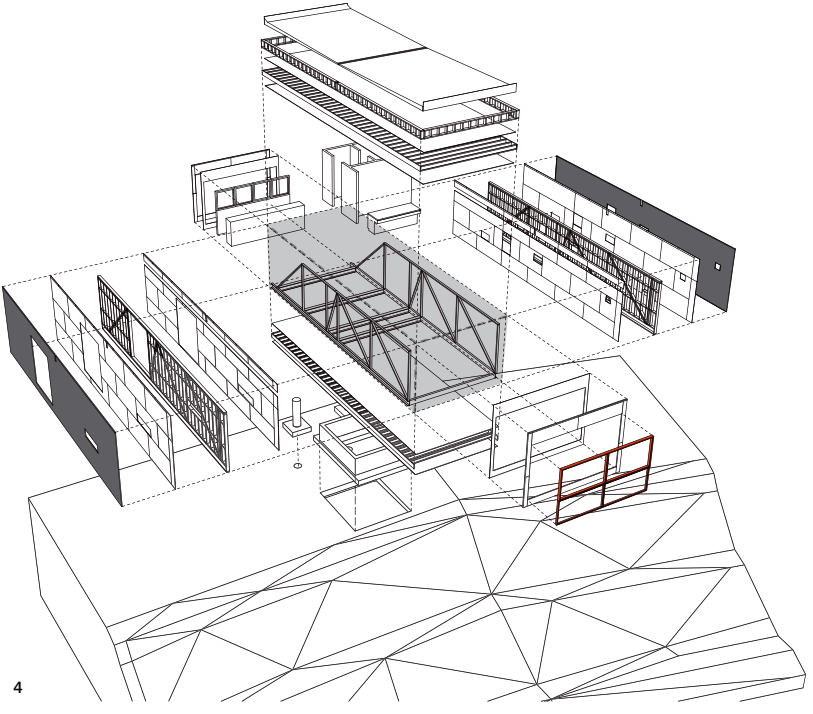
2006

The architecture of this small house defers to the richness of its adjacent landscape and ecology, aiming to capture and channel the latent energy flows of the riparian microclimate. The site is remote, with river setbacks and various rights-of-way that pinch its buildable area, framing an important downriver view. The house cantilevers out over the river bank, projecting inhabitants toward commanding views and capturing cool river breezes. Throughout, the house is designed to amplify and maximize encounters with the river microclimate and landscape. The architecture aims to engage its stunning site as simply and richly as possible. The location prompts lower-tech, higher performance approaches. Its construction, materials, and energy systems emphasize durability and ruggedness in response to the climate and remote location 8,800 feet above sea level.

1

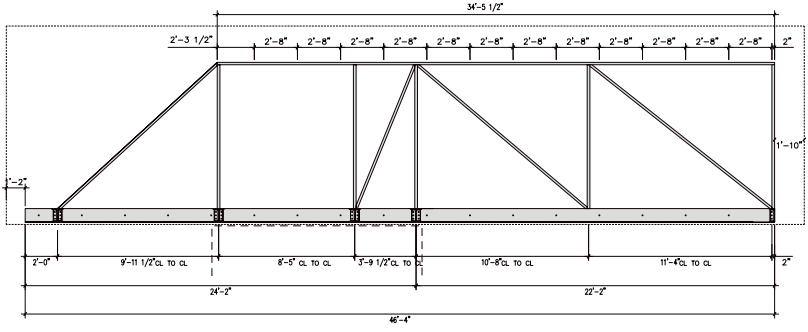
1: Site view
2: Tube from river
3: View from entry

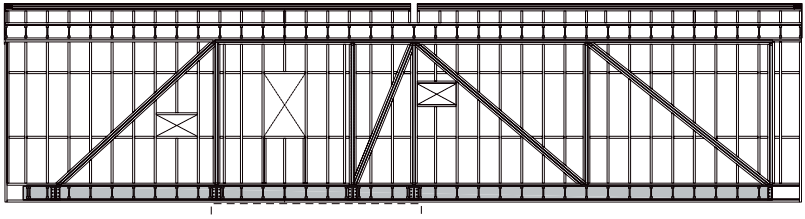
Cantilevering the house out over the river bank required wall-deep trusses that had to be fabricated on-site. Small steel members constitute the trusses, and the wood framing that infills the truss both continuously reinforces the truss and dampens its otherwise inevitable vibrations and deflections. The tube shape of the building becomes its only duct; the house's only cooling system is the airflow inlet (the large window facing the river) and the airflow outlet (the building's entry) that capture the cool, more humid river breezes, which create the river microclimate. The building heating system relies on a thermally active surface approach that minimizes nonsolar energy inputs in the building. This project was the fifth of seven projects that I designed and built on this site.



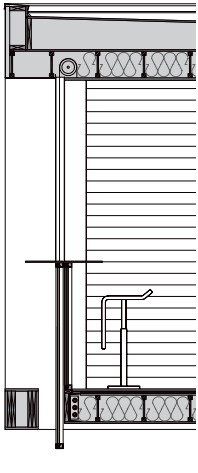
4

5: Tube framing
6: Window/bar section
7: Window/bar





5

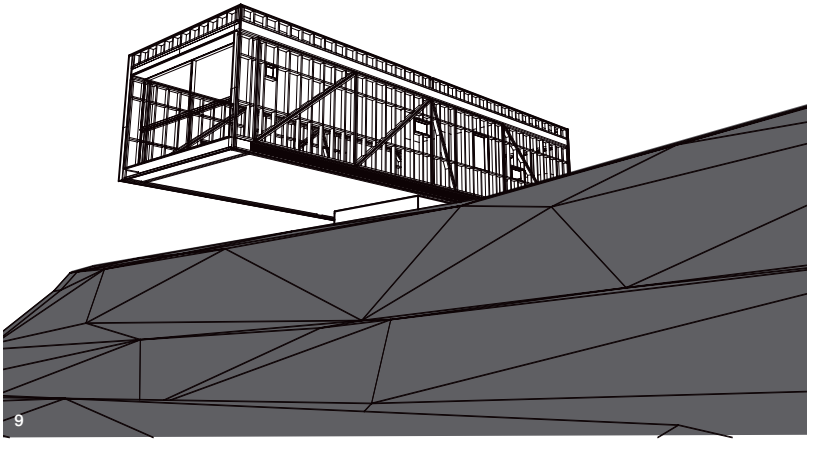


6

7

8: East facade
9: Model view


8


9

10: Interior view of river
11: Kitchen


10


11

NAMELESS

The Architecture of Fragility

We are living in a fragile world. Radical changes occurring in the Earth's vulnerable environment, combined with unpredictable social, cultural, and economic shifts, are increasing the inherent instability of our lives. We perceive these phenomena to be the result of architects' actions and see the spirit of the times through a spectrum of weak architecture, rather than a strong one which is resistant to these external forces.

We create architecture that is fragile, that reacts to dynamic global shifts. It makes sense when we consider that air, water, soil, and plants are not parts of a fixed environment; rather, they are changeable systems. Using these substances, we seek to create new possibilities with architectural interventions, such as blowing air, freezing water, soil-packed earth berms, and sheared landscape planes. This implies that the role of the architect is that of an intermediary, creating a relationship between ordinary nature and the man-made. Fragile architecture becomes a metaphor for the system of this new era. The strategy is not rigid and easily broken, but fragile, which flexibly responds to the shifting paradigm.

SUBSTANCE	+	ACTING	=	ARCHITECTURE
water	+	freezing	=	Whiteout
air	+	blowing	=	Playcloud
soil	+	earthing up	=	Mimesis House
culture	+	bridging	=	(Con)temporary Infrastructure
plant	+	screening	=	The Wall
ground	+	splitting	=	Museum One

A Typology of Fragility

New York, New York

Nature

The first vessel is made to hold air.

The second vessel is made to hold earth.

The third vessel is made to hold water.

The fourth vessel is made to hold leaves.

The fifth vessel is made to hold sand.

The sixth vessel is made to be empty.

Intervention

Blow a wind into the first (vessel holding air).

Create a raised lump in the second (vessel holding earth).

Freeze the third (vessel holding water).

Let the light permeate into the fourth (vessel holding leaves).

Create a crack in the fifth (vessel holding sand).

Do not do anything to the sixth (vessel remains empty).

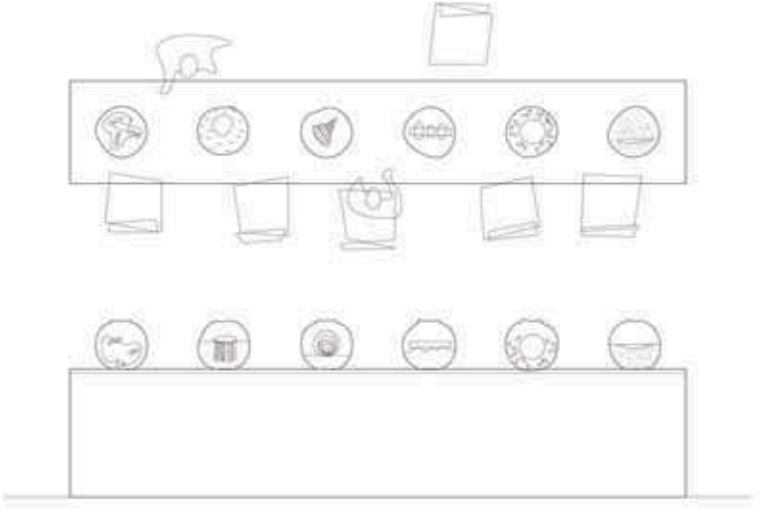
1

1: A Typology of Fragility

Return
Air from the first leaks.
The raised lump in the second gets lower.
Ice in the third melts.
Leaves in the fourth fall out.
The crack in the fifth widens.
The empty sixth remains empty.

A Typology of Fragility is an installation that demonstrates architectural intervention between common materials and reproduced places. A series of glass fishbowls aligned along a narrow tabletop contain abstract architectural and environmental elements for each project. The transparent fishbowls become vessels containing fragile architecture, and also represent fragility itself. The changeable natural materials such as air, water, soil, and plants unveil the relationships between places and materials through minimal architectural interventions including blowing air, freezing water, screening plants, and piling up earth.

2: Drawings for the installation
3: Models, top view



2

3

4: Model, Playcloud

Whiteout

Winnipeg, Manitoba

Whiteout is an architecture of ice: a contemporary igloo enclosed within a transparent hose containing water and ice. It not only becomes a part of the winterscape but it also obscures the sense of space perception within the structure.

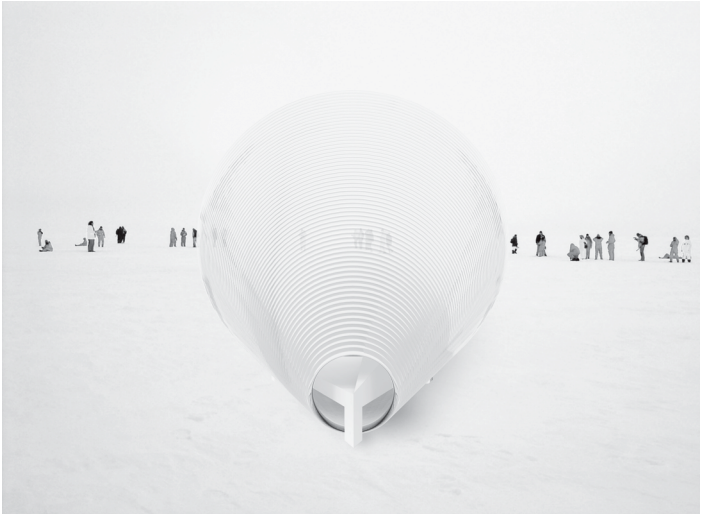
We focused on the unusual site conditions, choosing to build on ice rather than the ground. The pavilion is constructed from the natural resources available at the site: primarily water, the local climate, and a transparent hose. A 1,300-foot-long wire-reinforced hose is wound into a spiral and filled with water to freeze. This procedure gives rigidity to the structure and helps maintain a balance between the expansion of the ice and the elasticity of the hose. Once the water has frozen, this cone-shaped structure is stable enough to stand on its own, without its supporting wood frame.

The space inside offers adequate room for ice skaters, skiers, and strollers to rest and contemplate. People can relax on the triangular platform and bench inside the spiral. When the temperature rises in the spring, the ice changes to water and drains into the Assiniboine River, returning the main material of the temporary pavilion to nature. Only the transparent hose remains for reuse the next year. Whiteout connects the river, air, and people, and completes a sustainable life cycle.

1

2

1: Model, perspective
2: Wire-reinforced hose
3: Rear view (Whiteout) and front view (directed tension)

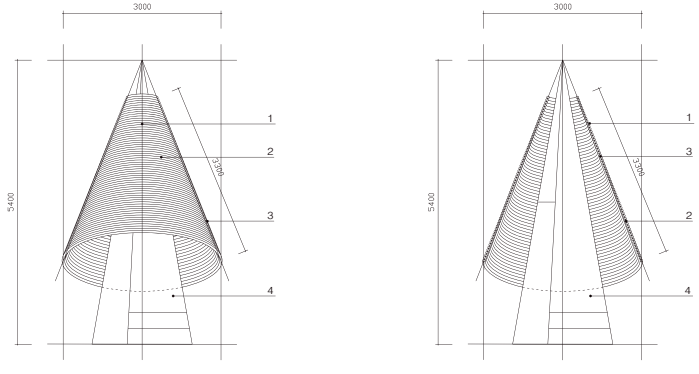


3

4: View from the river
5: Plan

4

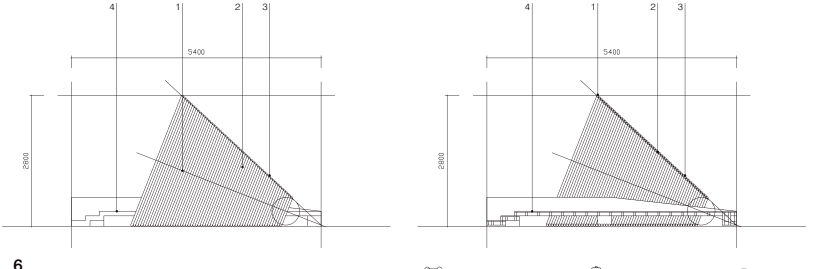
1. Transparent wire-reinforce hose 2. Water and ice 3. Plastic hose band 4. T.20mm wood floor (white paint)



5

6: Elevation, section
7: Construction diagrams

1. Transparent wire-reinforce hose 2. Water and ice 3. Plastic hose band 4. T.20mm wood floor (white paint)



6

1. build a platform
2. build a supporting wood frame
3. 400-meter long wire-reinforced hose is coiled around the supporting frame
4. pour water into the hose and freeze it with surrounding temperature
5. remove the supporting wood frame when water is complete frozen

7

Playcloud

Governors Island, New York

Playcloud is an architecture of air. This project explores the narrative potential of a pneumatic and fabric structure. We not only look at the utopian implications of the pavilion but also seek to construct a practical and sustainable solution. The inflatable frame is a stand-in for temporariness, playfulness, lightness, and the transitory. It lets us ask two questions: How in control are we of this structure, these narratives to be set up as temporary construction? Why is vision so central to the pavilion?

This proposal started began with the site-specific characteristics of the temporary pavilion. Governors Island, 800 yards from Manhattan, had been closed to the public for many years. Its flat landscape and lack of landmarks made it a difficult location to promote when compared to nearby Liberty Island and its iconic Statue of Liberty. To overcome the low public awareness of the destination, we proposed an artificial cloud pavilion. Playcloud is a new landscape of the festival on this island to stimulate people's curiosity.

Structure

Playcloud has a light, simple structure. The pavilion consists of an inflatable structure and yarn. In conventional architecture, walls and pillars support a roof. Here, it is completely the reverse: the floating cloud reaches a maximum height of 55 feet and is tied to the ground using 1,800 pieces of yarn. This thread curtain fixes the balloon to the ground and, at the same time, defines the cultural boundary. The light structure makes the pavilion sustainable. It does not require a thick foundation, nor would it damage historic site conditions. Additionally, the transport and storage volumes of the inflatable structure are minimal.

Space

Public events, including performing art, lectures, debates, and relaxation, demand extremely flexible space. The Playcloud creates a vibrant public space, offering diverse artistic and educational events. As a circular space, the interior can be easily reconfigured to meet its need with a varying layout.

As a cultural boundary, the yarn curtain hanging under the balloon forms a half indoor, half outdoor space. People can open the curtains as they need to expand the space. The curtain is not meant to limit space but to represent a new way of opening it. The threads create an illusion between the structure and the people. Its transparency,

1: Aerial view

translucency, and opaqueness are determined by the threads' density, human action, and environmental factors.

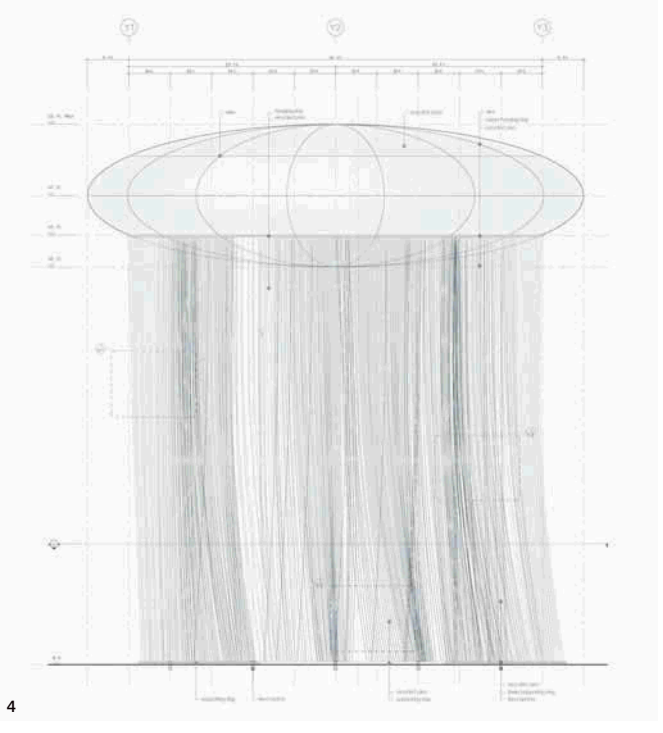
Playfulness

Playcloud aims to interact with people. People are allowed to touch the inflatable structure, as well as to sit and lean on it. The pavilion actively engages its environment. It gently sways from the wind and people's actions. It also expands and contracts with the change of air pressure and temperature, almost appearing to breathe and causing the yarn hanging from the balloon to sway. The subtle motion of the pavilion is reminiscent of a swimming jellyfish.

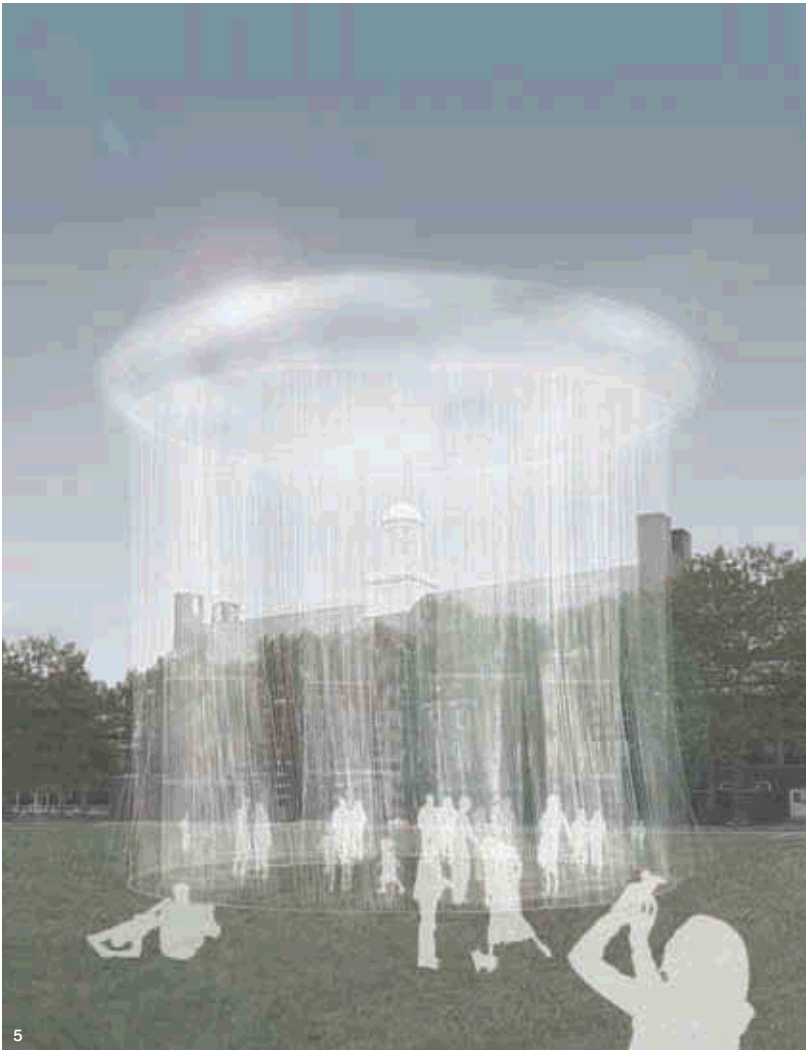
2: View from the bottom
3: Interior view
4: Elevation


2


3


4

5: Playcloud on Governors Island

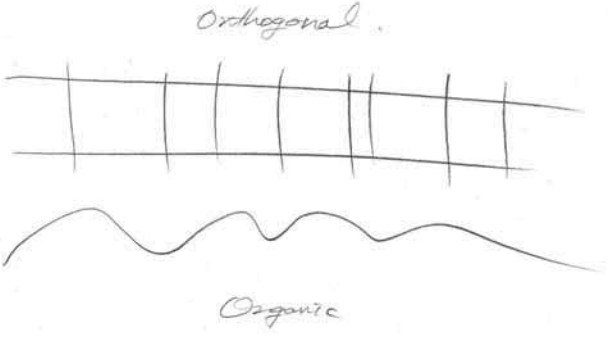


Mimesis House

Yesan, South Korea

Mimesis House is an architecture of continuous dichotomies, the relationship between natural and artificial, or real and fake. The house originates from the site-specific characteristics of a calm suburb of Yesan, South Korea. Geographically, the area forms part of what is known as the Charyeong Range, a vast expanse of ridges covered with rolling mountain peaks. We wanted to build a house that preserves the intimacy and maintains a certain amount of discretion in relation to the setting, expanding the meaning of human habitation.

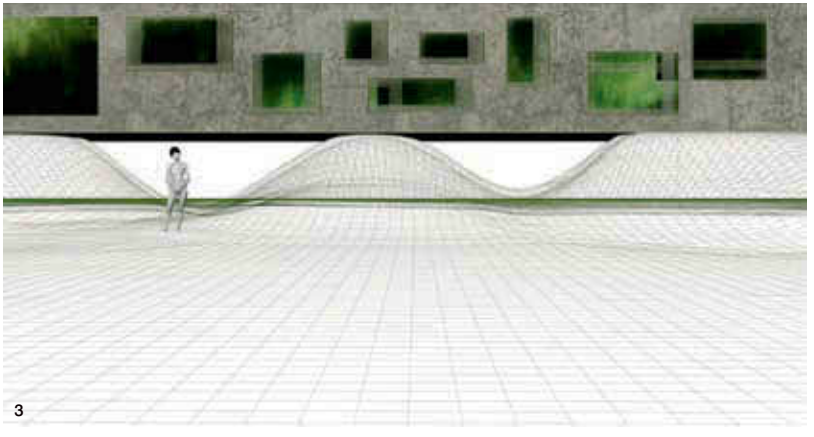
In the beginning, houses and natural territories must have been indistinguishable. Houses were not made, they were found in the depths of caves, beneath canopies of trees, or in the hollows of hills. We tried to link these origins to a contemporary house paradigm. Mimesis House has two components: an orthogonal concrete box and the curved mounds that rise upward from the ground. Like piloti, the artificial topography elevates the building and allows an extended continuity from the garden beneath to the reservoir in the distance. At the same time, a parabolic curving void connects the reservoir to the mountains behind the house, protecting the living space from the frequency of floods of the reservoir. In addition, as inhabitants and visitors wander around the mounds, they are able to consider the role that they play in the landscape. Mimesis House can be understood not only as a metaphor for primitive shelters but also as a conversation between structure and environment.



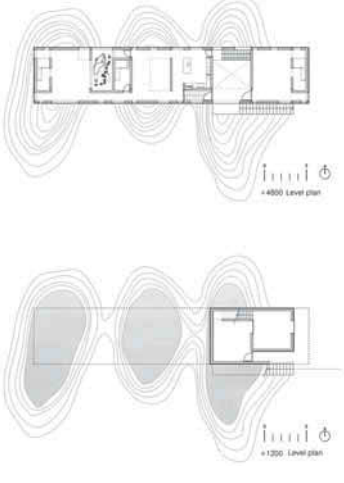
1

1: Concept sketch
2: Study models

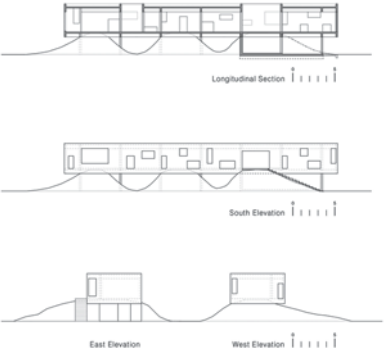
3: An orthogonal concrete box and
the curved mounds
4: Plans
5: Elevations, section



3



4

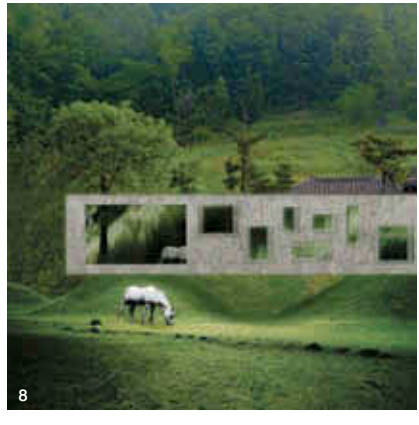


5

6: View from the reservoir
7: Study models
8: Front view


6


7


8

(Con)temporary Infrastructure

The Bronx, New York

This project proposes a flexible cultural infrastructure that changes according to the artists' and communities' needs. This huge infrastructure will be an incubator for the arts, a public facility that fosters the development of experimental, innovative art forms, and strengthens the positive effects that the arts have on community development.

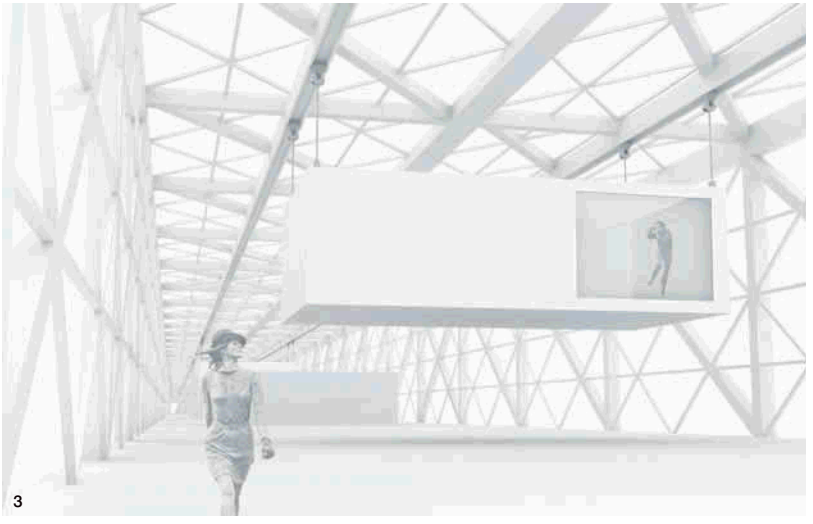
The High Bridge portion of the Old Croton Aqueduct, now a historic national landmark, was a crucial part of New York City's development. The uplifted new structure from High Bridge gives the chance to overcome the steep topography (the cliffs) and complex infrastructures (the expressway and train tracks) along the Harlem River. People will be able to easily access and cross both parts of High Bridge thanks to a restored walking path. This will be used for everyday crossings and temporary exhibitions, performances, and events. The one-way water flow through the old aqueduct will be replaced by an interactive cultural flow through the new structure, which will extend to the South Bronx.

The elevated structure and moving containers along the suspended crane rail will generate various spaces for art and culture. The art containers will move horizontally and vertically along the rail depending on the artists' and communities' space needs. All programs, such as studios, classrooms, offices, laboratories, and galleries, will be accommodated based on their demands for space. The arrangement of the space can be actively changed depending on the urban conditions.

1

1: Mapping of the South Bronx
2: View from the High Bridge water tower in Manhattan

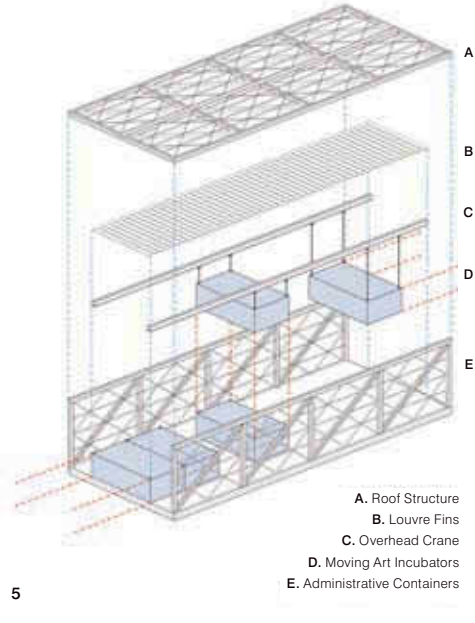
3: Interior view: moving containers create various spaces.
4: View from the Harlem River: the uplifted new structure on High Bridge



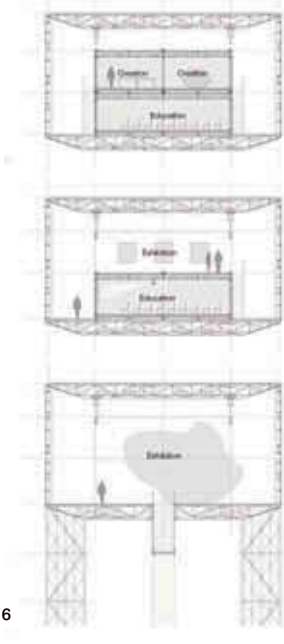
3

4

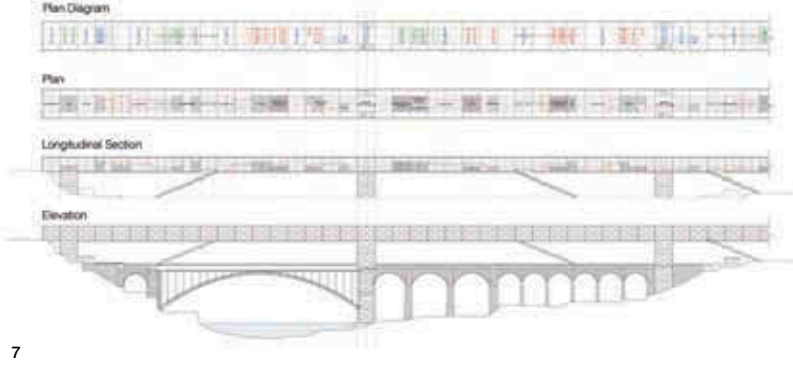
5: Exploded axonometric
6: Sections
7: Plan diagrams, longitudinal section, and elevation



5



6



7

The Wall

Boston, Massachusetts

This site in South Boston is isolated geographically by the highway, and also socially by the prison. This proposal seeks to turn the negative urban environment near the prison into an ecological, economic, and social opportunity. The 296-foot wall of the Suffolk County House of Correction is targeted as a specific site for this proposal. This vertical landscape has the potential to reactivate the community as an urban farm, farmers' market, and playground.

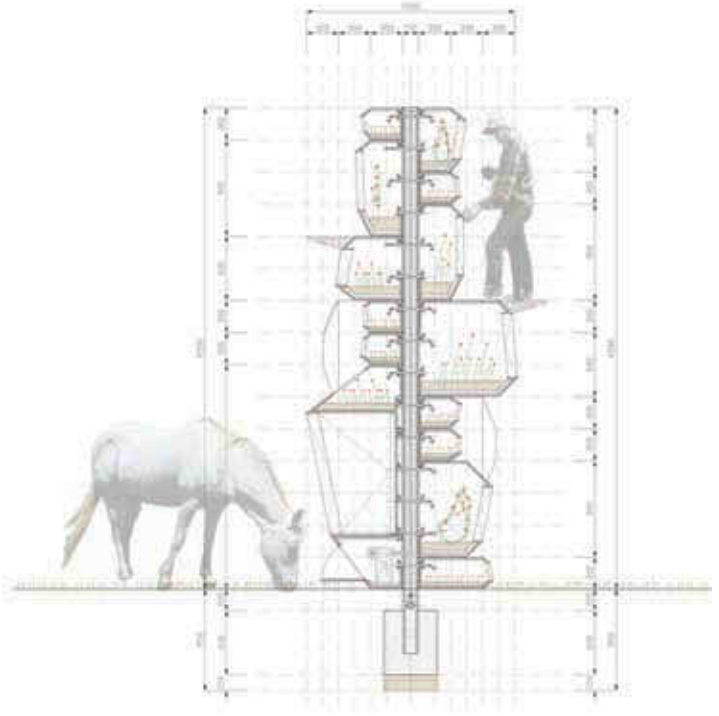
Vertical Farming Wall

Bringing food into the city by means of a vertical farming wall would be a new way to revitalize it. Through vertical wall farming, both sides can have locally grown organic food, exchange their knowledge of cultivation, and communicate more openly. It would reinvigorate neighboring streets with community activity. In addition, this wall would give prisoners motivation. They would not only learn skills they need to survive when released but also earn money through farming. A neglected and deserted space in the city could become a part of people's daily lives.

1

2

1: Concept diagram
2: Vertical farming units and distribution
3: Section
4: View inside prison



3

4

Museum One
Pusan, South Korea

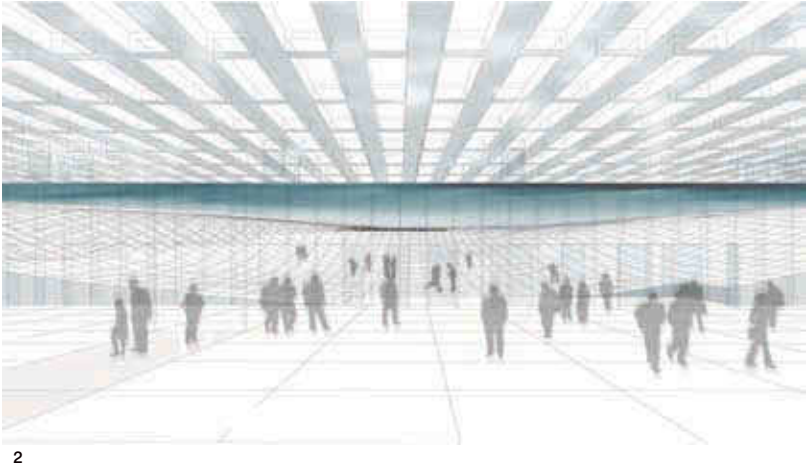
For millennia, sedimentation has been forming a delta at this site. As homage to this distinctive natural phenomenon, we defined Museum One not as a building but as a landscape.

We have proposed a 360-degree wide-open view through an ambiguous boundary between nature, the delta, and a building, the museum. This is possible by positioning most programs underground, except for those above ground. Simplifying the mass and positioning the building below ground harmonize these new utilities with the surroundings.

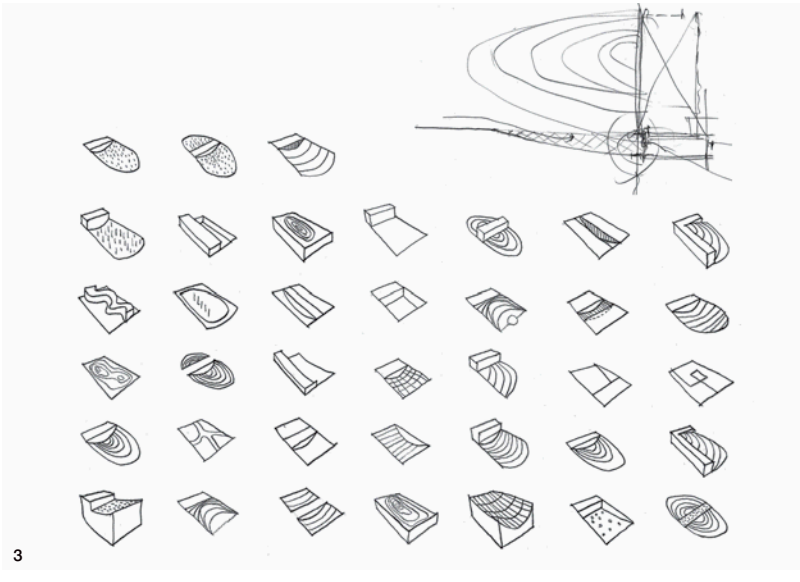
The modified contour line around the building plays a role as three-dimensional landscape, green tracts of land, space for events, open spaces, and an approach ramp. Visitors can enter the split ground and appreciate the delta, including flocks of migratory birds and the horizon where the river meets the sky. The modified contour line prevents the opened visual field from overwhelming the importance of the surrounding ecological environment.

1

1: Concept model
2: View of entrance
3: Typology of artificial landscape



2



3

William O'Brien Jr.

As self-constituted members of the post-digital generation, our design education was defined by the development of computational prowess. It was an educational environment characterized by disciplinary polarization and fraught with anxieties about our allegiances. In the frenzied academic context of the digital project during the early part of the last decade, it seemed to many of us that the trajectories of the varied architectural agendas of our neo-avant-garde predecessors were crudely bundled into two groups: those whose work aligned with the ambitions of the digital project, and those whose work did not. The former developed an affinity for all things digital, pursuing formal continuity, geometric complexity, and intricacy, while the latter developed an aversion to it, pursuing static, stark, and iconic form.

Some of us have resisted the lure to categorize our work singly, opting instead to hold out for hybrid, heterogeneous characterizations. We are comfortable with the idea that we have not built impenetrable, life-long theses for practice, but rather are working with less rigid hypotheses that provide us with adequate governance. We prefer to build up a culturally, historically, and intellectually charged center of gravity that is at once potent enough to offer stability but weak enough to be affected by greater, ever-changing spheres of influence.

Having witnessed the collective exhaustion of a phase of the digital project monopolized by aesthetic concerns, a number of us are now motivated by a deeper, more thorough incorporation of computation into our practice. As computation becomes inextricably ingrained in process, it has been resituated as fundamental rather than novel. This transition enables us to direct our attention elsewhere, allowing the emergence of new architectural agendas likely to produce more nuanced work with multiple allegiances. Projects presented here can be described in pairs of terms that until recently might have read as contradictory, as implausibly aligned with two oppositional groups: parametric and primitive, systemic and idiosyncratic, differentiated/repetitive and graphic, malleable and thick, rule-based and authored. As architectural motivations for the post-digital generation, these couplings are not only plausible but thrilling.

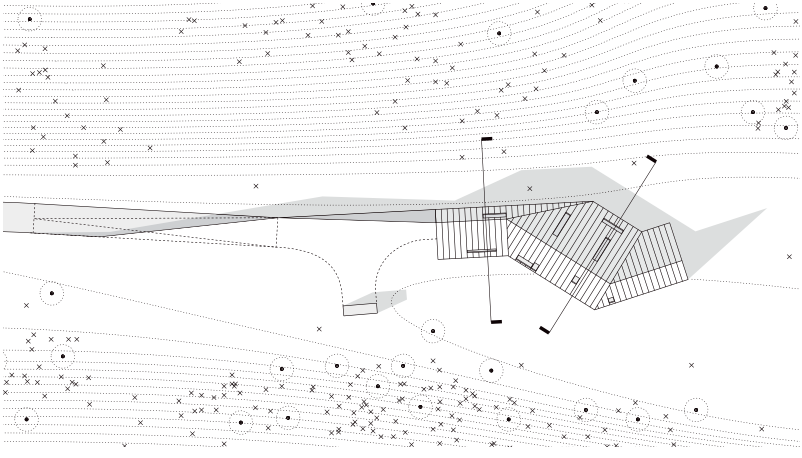
Allandale House: A Cabin of Curiosities

Mountain West

2009–10

Allandale House is an A-frame house designed for an idiosyncratic connoisseur and her family. In addition to its occupants, Allandale House also provides space for an eccentric collection of artifacts that resist straightforward classification. Wines, rare books, stuffed birds, and an elk mount are among the relics on display in this small vacation house.

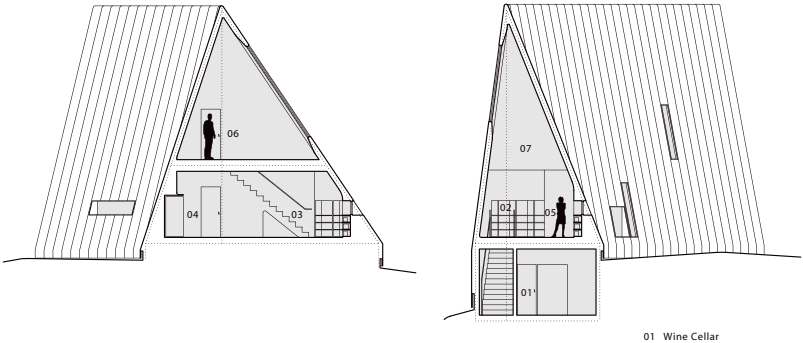
The house links three horizontal extrusions of "leaning," or asymmetrical A-frames. The house undermines the seeming limitations of a triangular section by augmenting and revealing the extreme proportion in the vertical direction and utilizing the acutely angled corners meeting the floor as moments for thickened walls, telescopic apertures, and built-in storage. Ostensibly problematic head-height limitations posed by the angled ceiling are resolved by allowing the interior surface of the ceiling to deviate from its parallel relationship with the roof surface so it becomes plumb to the floor plane. The thickness created between the outer roof surface and the inner wall surface is reclaimed as poché from which to carve, creating bookshelves and showcases. Perceptually, the ambition is to tuck the pieces on display within the implied surface of the interior liner, enabling the items to be seen, while providing the possible interpretation of the space as a simple volume.



1

1: Site plan
2: View of approach
3: Transverse sections

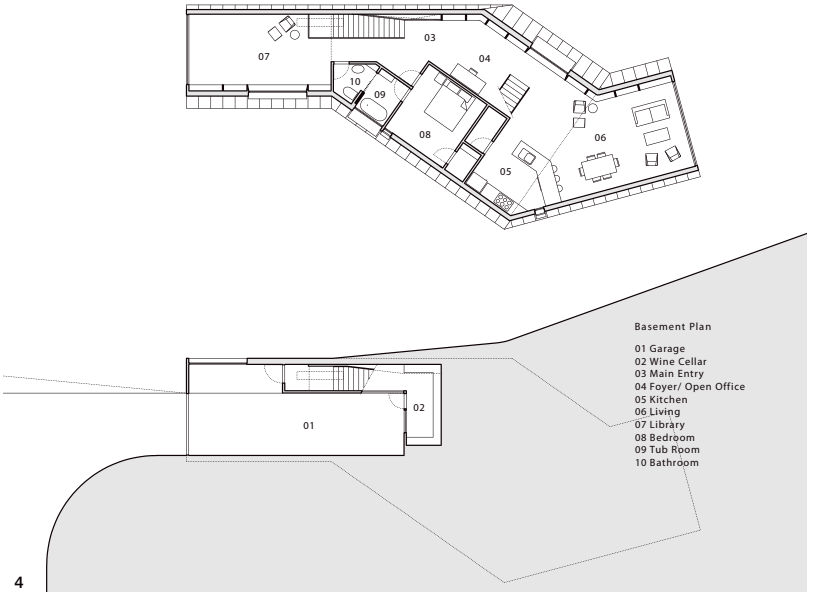
2



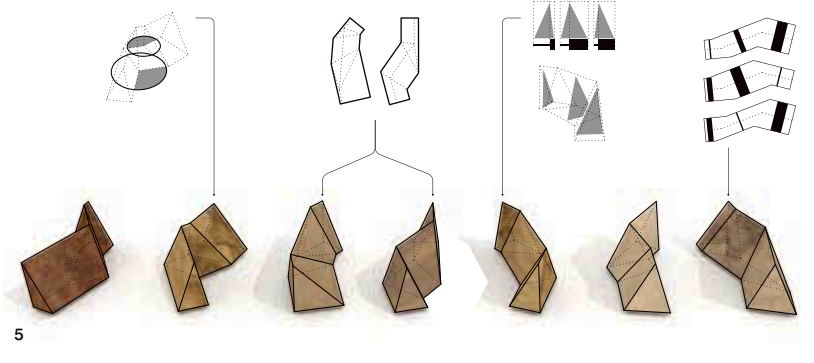
01 Wine Cellar
02 Main Entry
03 Office
04 Kitchen
05 Library
06 Bedroom
07 Elk Mount Location

3

4: First-level plan and basement plan
5: Variables and configurations



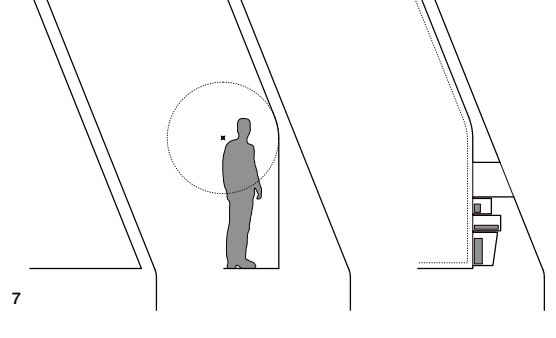
4



5

6: View from kitchen and living room
7: Poché as exposed storage

6



7

Weathers Permitting: A Field Guide to Transitional Environments

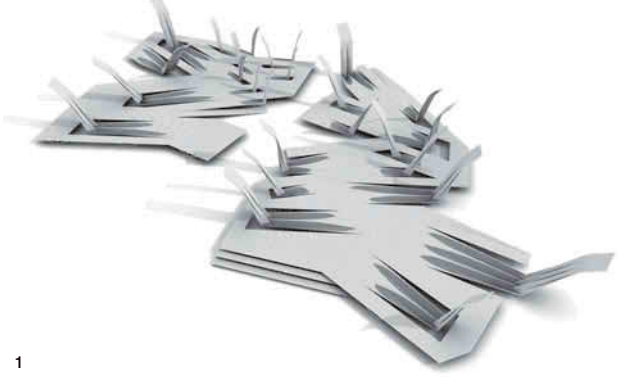
MoMA PS1, Queens, New York

2010

Weathers Permitting aspires to broaden affiliations between natural processes and cultural practices. It seeks to sponsor a renewed curiosity in spatial, temporal, and conditional patterns of environmental transition to which many have grown accustomed.

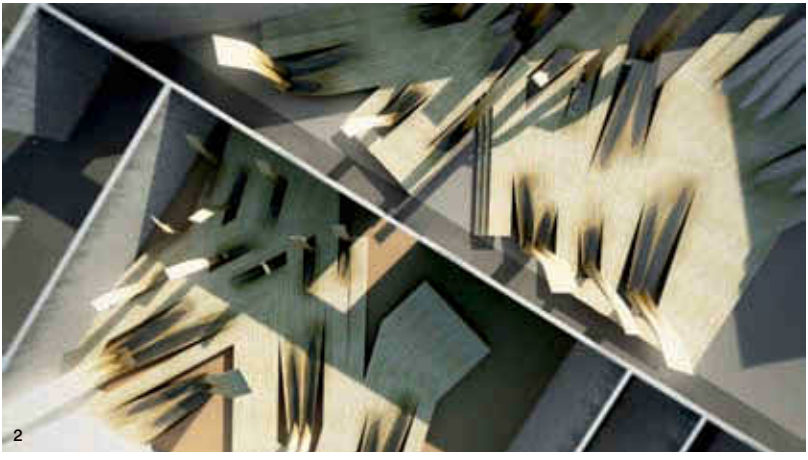
The installation is a terrain—a continuous and varied landscape—which resists typological classification. It is designed as an elevated boardwalk with unconventional properties such as malleability and water retention. Conceived as a flexible construct, the boardwalk makes use of the common directionality and inherent material flexibility of planks of wood in order to guide the locations of folds in its surface. Transitions between two-dimensional surface and three-dimensional volume offer multiple littoral zones which mimic the variety of aquatic conditions typically associated with coastlines. Participating in the repetitive cycles of time and the indeterminate patterns of weather, depressions in the terrain collect and evaporate water intermittently, registering the oscillation of environmental conditions.

The surface area of the deck uses wood from five white ash trees. Green, rough-cut lumber is flexible and enables bending without the time-intensive and costly steps of steaming, jig-construction, and kiln-drying. The location of origin of the planks within the crosscut of the log affects the types and degrees of flexibility over the length of the plank. Identification of these traits and assignment of bend types to different portions of the pleated topography ease the kinds of transitions that the planks undergo.

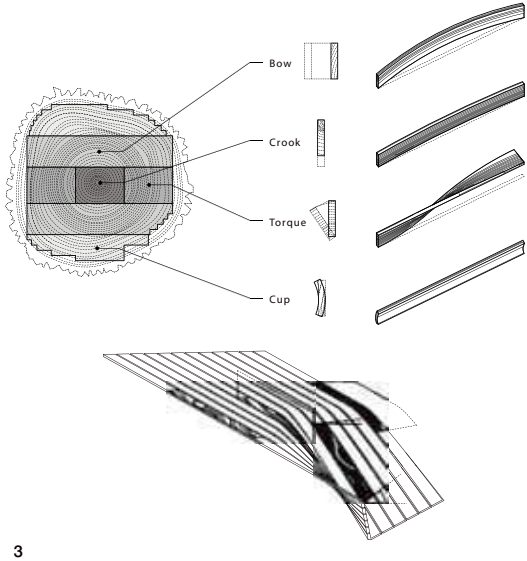


1

1: Overall configuration
2: Aerial view of terrain
3: Lumber behavior and plank distribution



2

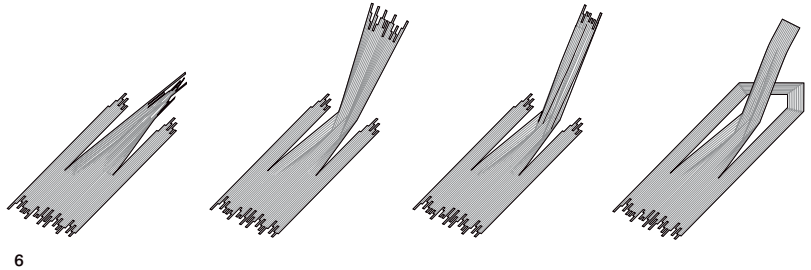


3

4: View of thicket
5: View of pools
6: Deck plan manipulation

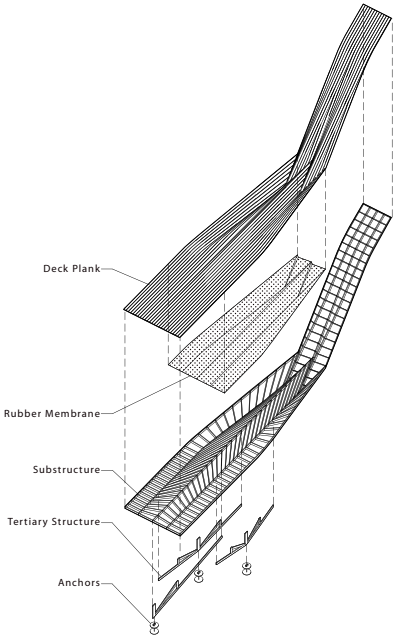
4

5

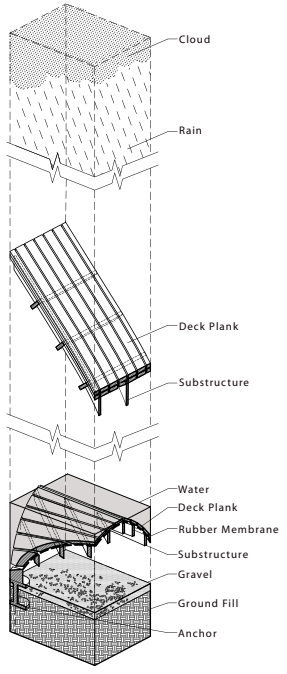


6

7: Composite layers
8: Core sample of terrain and atmosphere
9–10: Model photographs



7



8

9

10

An Inscription: The United States Fallen Heroes Memorial

Kennedale, Texas

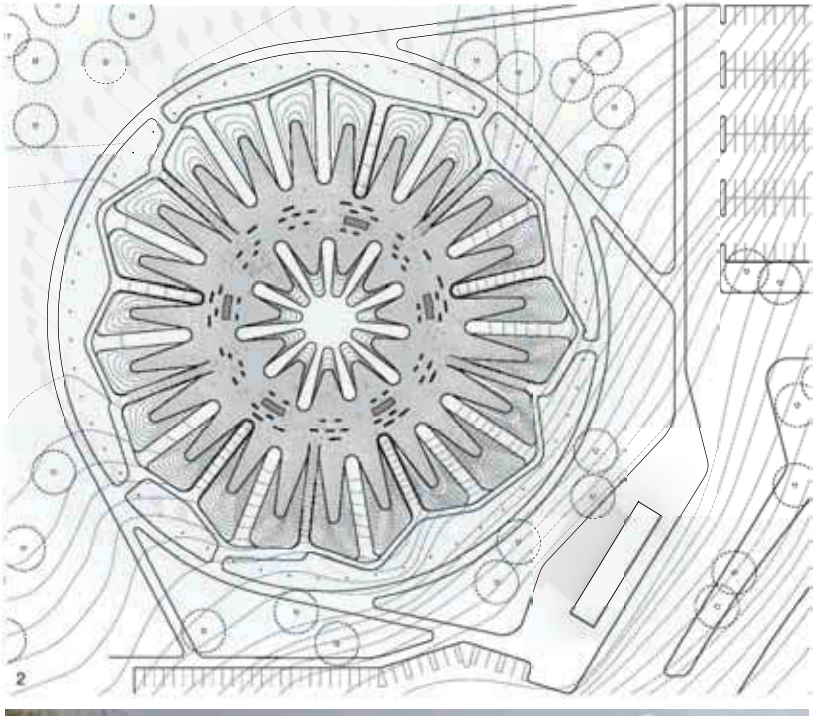
2010

In order to establish an environment of distinction, this scheme adopts a metaphor describing two ribbons that part the landscape to inscribe new ground. The memorial is conceived as a pair of radiating, ribbon-like walls which carve a continuous ring of space from the landscape to offer a setting for the commemoration of the women and men who have died in the wars in Afghanistan and Iraq. The walls, representing distinct but related conflicts, are lined with white granite niches which individually memorialize each of the fallen.

The memorial is ordered by regions of the United States; five zones representing the northeastern, southeastern, central, southwestern, and western regions of the United States. have uniquely dedicated entrances, reflection pools, and overlook points. The ring of flags that surrounds the memorial abides by the same organizational strategy, thereby acting as a wayfinding device for visitors entering the site. The plan figures of the undulating walls sponsor multiple spatial scales, enabling visitors to engage the niches privately within the intimate setting of an individual alcove, while also providing larger, collective spaces for memorial ceremonies. The plan configuration, which consists of radially organized rays, anticipates the necessity to extend their length, allowing individual granite niches to be added to the memorial as the number of casualties continues to rise. When the conflicts end, the memorial will provide a permanent symbol of the fallen through rays of varying lengths.

1

1: Model photograph
2: Site plan
3: View from alcove

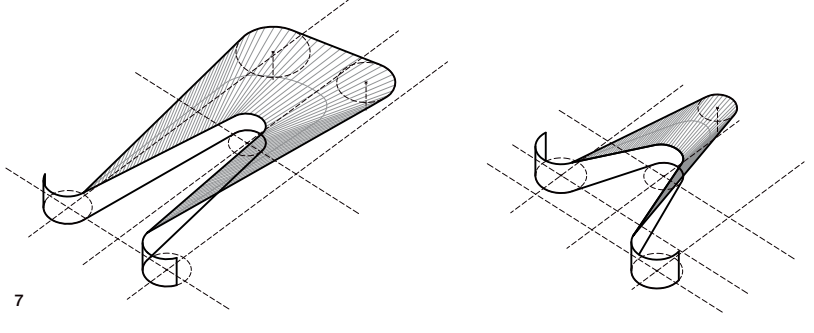


4: Aerial view of memorial
5: View from within memorial
6: View of memorial entrance
7: Alcove and landscape surfaces

4

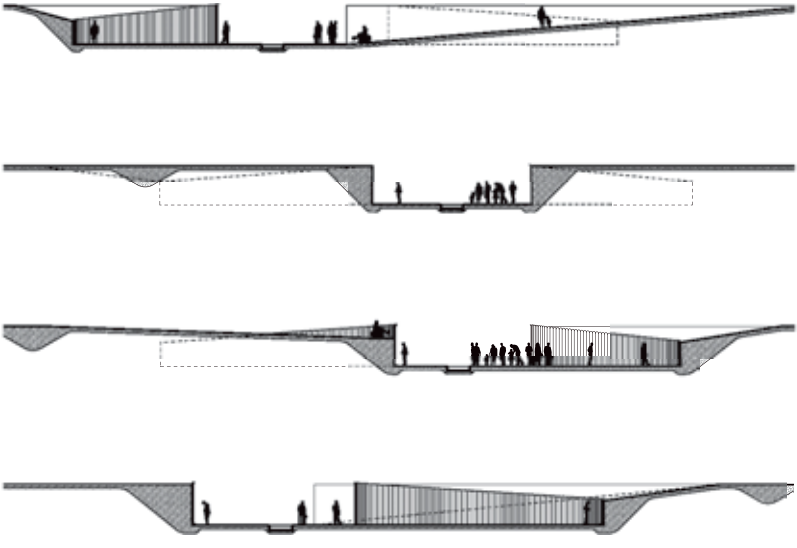
5

6



7

8: Site sections
9–10: Model photographs



8

9

10

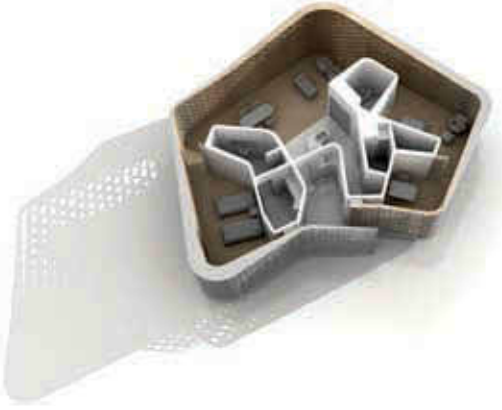
Cog House: Strategies for a Responsive Mediator

2007, with David H. Gwinn and Jared Days Serwer

The Cog House is comprised of a malleable service "cog" and a responsive exterior wall, or "mediator." The relationship between the two planometric figures varies throughout the house and is dependent on local programmatic requirements. The distance between the cog and the mediator fluctuates between 4 feet, to accommodate circulation, and 15 feet, to house collective spaces. The service cog is conceived as a flexible figure that aims to contain service-related programs and divide served space(s).

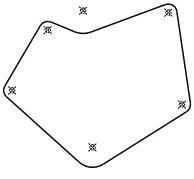
The mediating wall is thick, allowing the apertures to take on unique orientations. The directionality of the mass-customized masonry component is dependent on several variables, such as the desired levels of light entrance, sight-line occlusions for privacy, or the framing of sight-lines to capture strategic views.

The masonry units—some of which are parallelograms, some of which are trapezoids—are multicombinatorially aggregational. Together, they provide stark or attenuated transitions between opposing directionalities. The location of "benchmarks" of a certain aperture characteristic at specified locations act as fixed conditions, between which transitional components infill accordingly. Examples of benchmarks include a group of perpendicularly oriented components to capture a view for the living area, a band of obliquely angled components to prevent views from the exterior to the master bedroom, or a set of acutely angled components to bring indirect sunlight into the office.

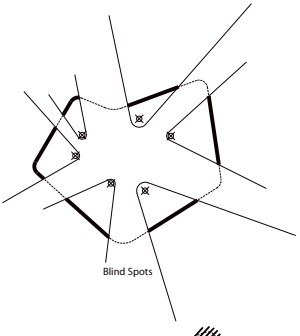


1

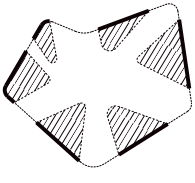
1: View of interior and exterior figures
2: Figural and programmatic development



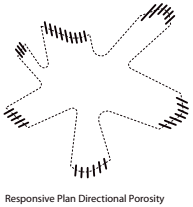
Responsive Plan Figure



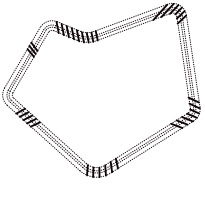
Blind Spots



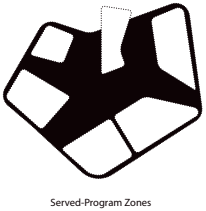
Privacy Zones



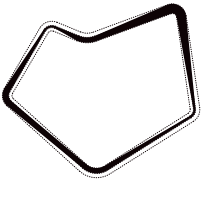
Responsive Plan Directional Porosity
(views bypass blind spots)



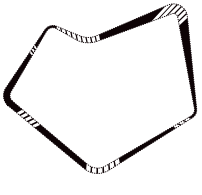
Wall Thickness Potential



Served-Program Zones



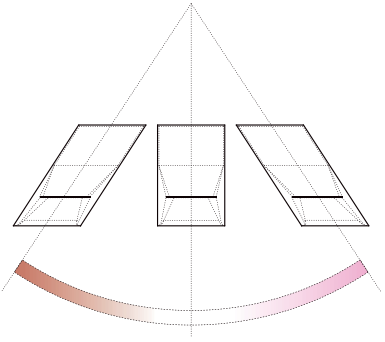
Wall Thickness Variation
(ranges from 9˝ to 3´)



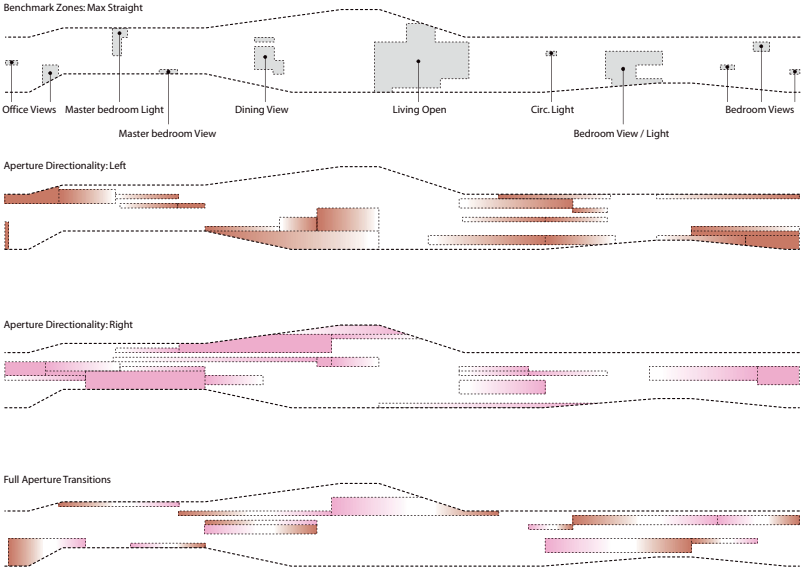
Directional Porosity Behavior

2

3: Aperture rotation
4: Aperture location layers



3



4

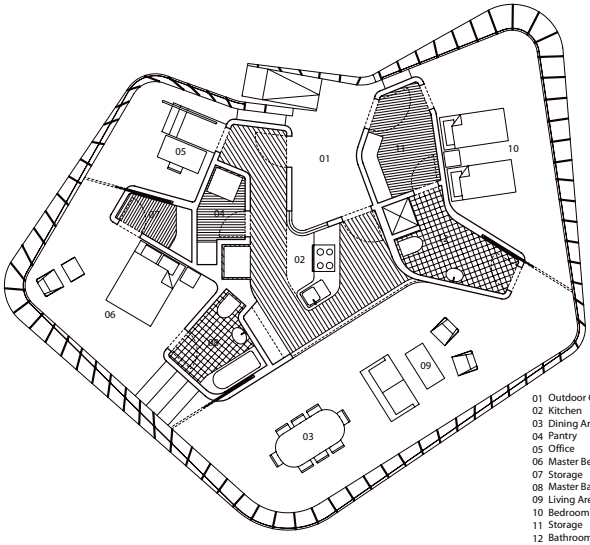
5: View of approach
6–8: Views of screen
9: Plan

5

6

7

8



01 Outdoor Courtyard
02 Kitchen
03 Dining Area
04 Pantry
05 Office
06 Master Bedroom
07 Storage
08 Master Bathroom
09 Living Area
10 Bedroom
11 Storage
12 Bathroom

9

Urban Tree Canopy: Alchemy, Simulation, and Artificial Ecology

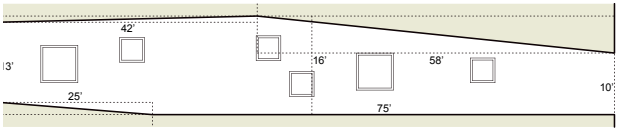
Central Texas

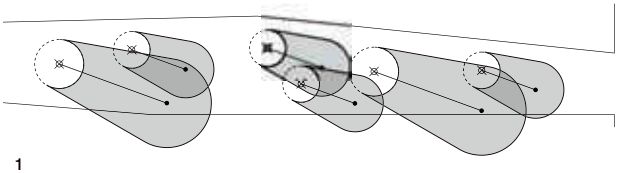
2008

A simulation is a manifestation of the behavior of one system executed by another system. Increasingly, simulated environments are replacing natural ones. Similar to strategies of domestication that have long been practiced by agriculturalists and farmers, controlled environments allow for the precise tuning of conditions in order to manipulate artificial selection.

Located in central Texas between two existing buildings, the canopy mediates environmental conditions in order to ensure the healthy development of six saplings during their first year of growth. Secondarily, it provides a passive tree-watering system. It also offers several threatened bird habitats a much-needed place of refuge in the form of a collection of bird baths.

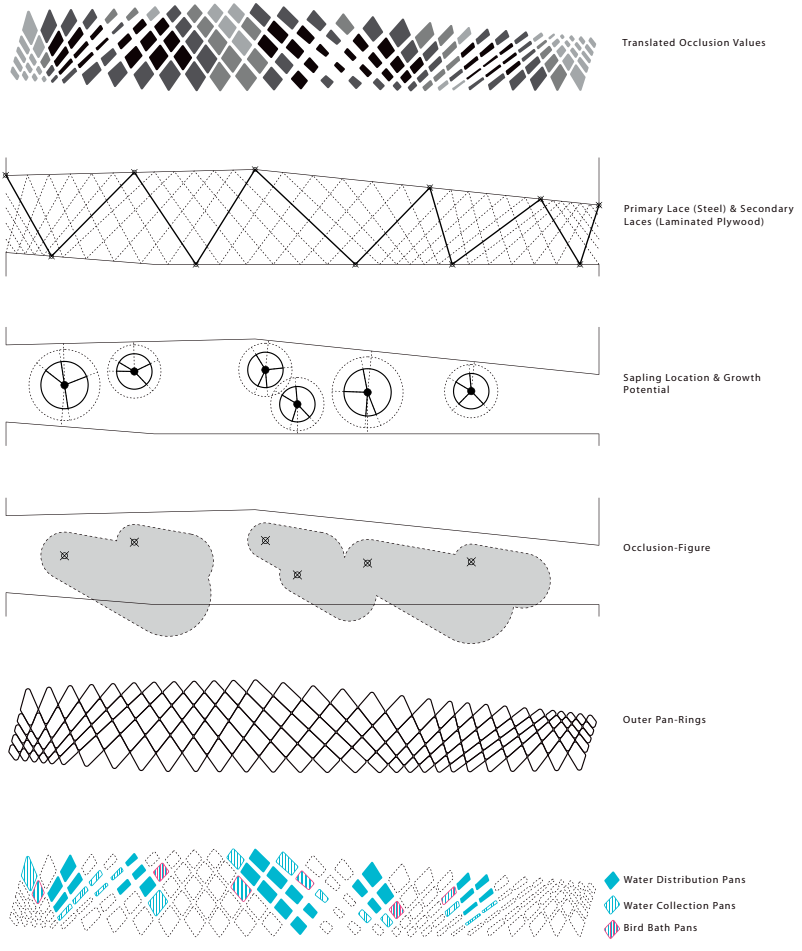
The design for the temporary canopy conflates several different mechanisms of control into a single filtration system. As in all alchemical practices, the resultant mixture is dependent on the relative measure of each input. Parameters include specifications for varying degrees of sunlight occlusion, amounts of water collection and distribution, and dispersal of bird baths. Variables include proximity of structural laces, pan depth, width, and whether or not a pan is capped. The canopy is structured with a primary steel lace and five secondary laminated plywood laces. The fabrication of the pans makes use of laser-cut Plexiglas panels with a vinyl tree print appliqué.





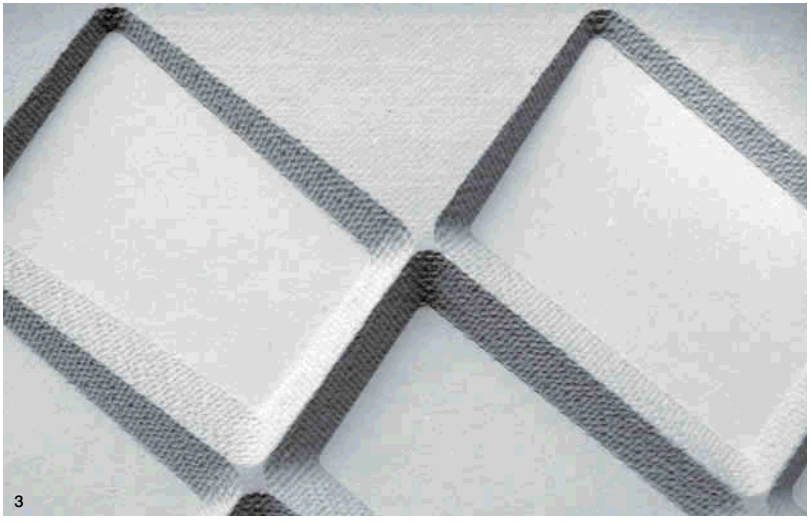
1

1: Existing site conditions
2: Organizational and structural development



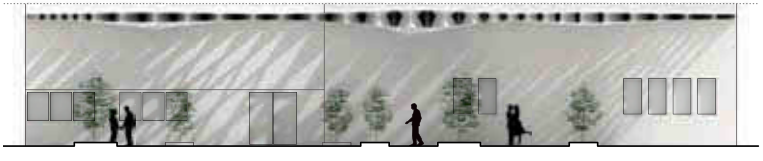
2

3: Model photograph
4: Roof plan
5: Longitudinal section



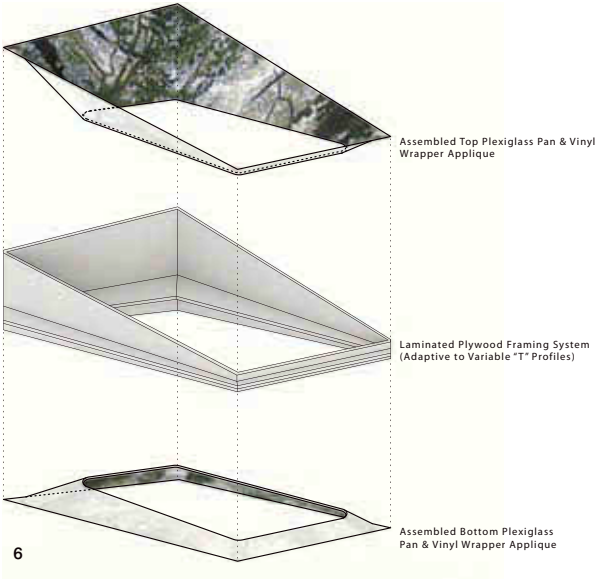
3

4

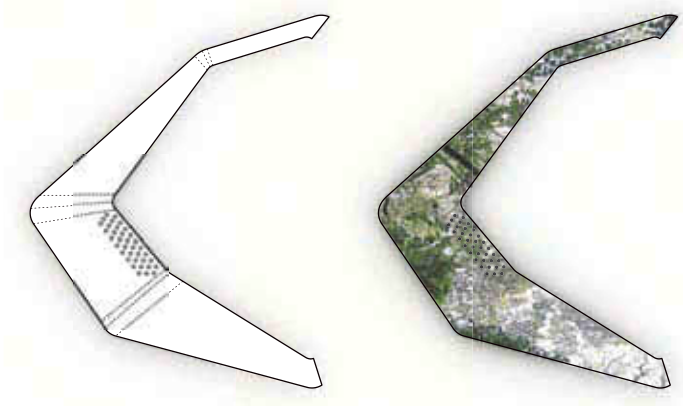


5

6: Pan assembly
7: Unrolled plastic and vinyl appliqué



6



7

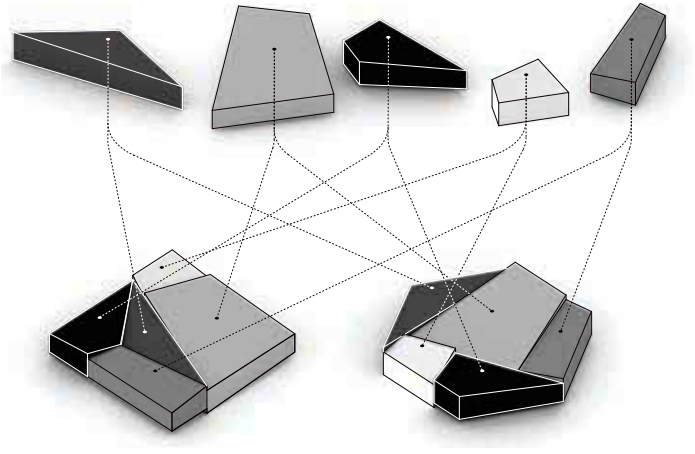
Twins: Houses in Five Parts

Upstate New York

2009–11

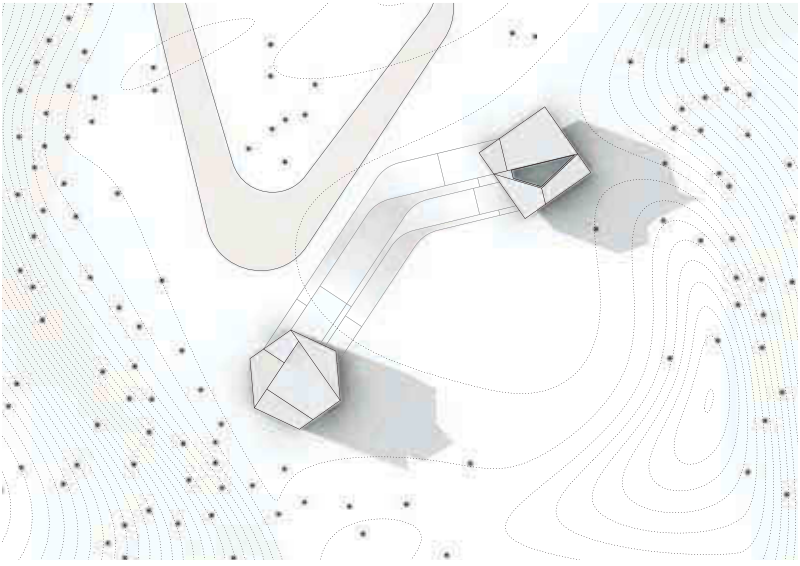
This design proposal for two vacation homes for two brothers and their families on a large plot of land in upstate New York represents an examination of a curious part-to-whole relationship. The mathematical principle of *dissection* states that "any two regular polygons with equal areas can be divided into sets of similar shapes." This scheme appropriates this principle as a solution to general similarities in the programmatic requirements and distinctions in the desired relationships to the site.

A regular six-sided polygon and a regular four-sided polygon contain the same five shapes—each are made up of the same four trapezoids and one triangle. The adjacencies between the five shapes are different, as are their orientations, within each of the polygons. Translated into spatial divisions in an architectural plan, these fixed arrangements prompt sectional flexibility. Conceptually, in section, the floor planes and the roof planes are configured in order to accommodate strategic micro-topographic continuities and discontinuities across the collective surfaces. Flows in circulation of residents and water govern possible configurations of the floorscapes and roofscapes, respectively. Programmatically, the pairs of parts are used similarly between the two houses, although each programmatic piece utilizes its unique adjacencies; the triangular space is used as a vertically oriented sun room in the center of the square house and as a landscape-oriented, screened-in porch in the hexagonal house.



1

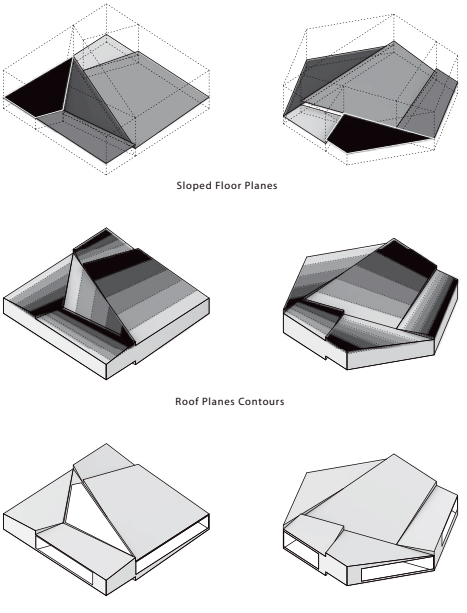
1: Minimal dissection principle
2: Site plan
3: View of square house and hexagonal house



2

3

4: Topographic and formal development
5: View of the square living room
6: View of sun room and kitchen in square house



4

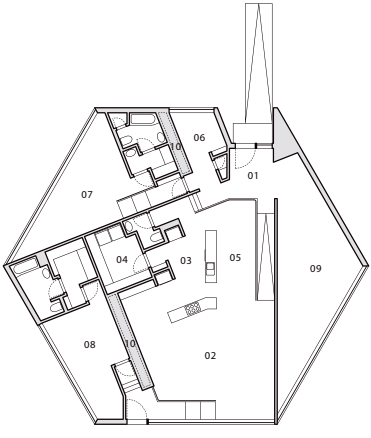
5

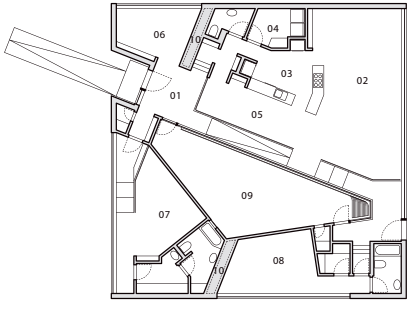
6

7: View of sun room and kitchen in hexagonal house
8: Site section
9: Plans

7

8





01 Entry
02 Living
03 Kitchen
04 Pantry/ Laundry
05 Dining
06 Office
07 Master Bedroom
08 Guest Bedroom
09 Sun Room/ Courtyard/ Porch
10 Rainwater Channel

9