Dimensions

Dimensions is the annual, student-produced journal of architecture at the A. Alfred Taubman College of Architecture and Urban Planning. *Dimensions* seeks to contribute to the critical discourse of architectural education by documenting the most compelling work produced by its students, fellows, and visiting lecturers.

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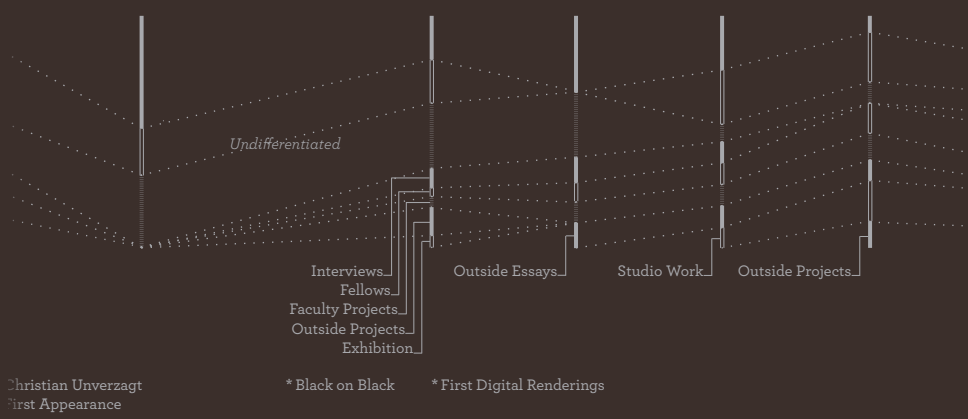

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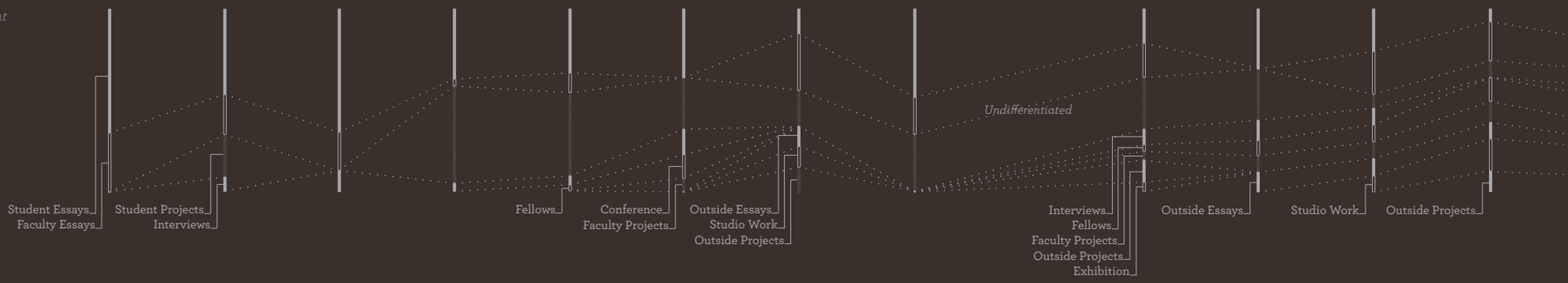
Content



* First Annual Raoul Wallenberg Competition

* Thom Mayne Interviewed

* Christian Unverzagt First Appearance

* Black on Black

* First Digital Renderings

Dimensions

Monica Ponce de Leon was appointed Dean and Eliel Saarinen Collegiate Professor of Architecture and Urban Planning of the University of Michigan, Taubman College of Architecture and Urban Planning in September 2008. She co-founded Office dA in 1991, and she has recently launched her own design practice. Dean Ponce de Leon received a Bachelor of Architecture from the University of Miami and a Master of Architecture in Urban Design from the Harvard Graduate School of Design.

Dimensioning

Monica Ponce de Leon, Dean and Eliel Saarinen Professor of Architecture and Urban and Regional Planning

This issue of *Dimensions* marks the 25th year that the journal has been in continuous production. Thus, it seems appropriate to take stock, to look back as a means to continue to move forward, and place *Dimensions* in the context of its own history as well as within the larger framework of architecture culture.

While architectural publications have been key in the construction of the discipline's discourse, student-led publications have always played a pivotal role in this endeavor by serving as the field's foil—its other—always anticipating, negating, or reinforcing architecture's strength and exposing its weakness. Unencumbered by the financial pressures of minimum circulation, student-led journals have been able to do away with mass appeal and concentrate on the issues that students find pertinent to their time. These publications have been free to advance the discipline of architecture through the dissemination of new ideas and the critique of existing cannons; minority voices can be heard; polemics can be fabricated.

In architecture schools student publications are often divided among those that focus on a particular disciplinary topic looking outwardly versus those publications that tap their internal production primarily serving as a venue to disseminate student work. Those journals that face outward have predominantly featured history and theory articles from established academics and practitioners as a means of forwarding a particular vision of the discipline as set forth by the group of student editors. Theory course readers are replete with texts that were first vetted and tested in these student journals. In this category, the *Harvard Architecture Review* (1980—1998), UPenn's *via* (1968—1990) and Yale's *Perspecta* (1952—today) come to mind. Of those journals that look inward, the ones that use their current body of student and faculty work as a means of developing new polemics for the discipline are among the most interesting. SCI-Arc's *Offramp* (1988—2001) and Princeton's *Pidgin* (2006—today) are the best examples of this class.

As you would expect of Michigan, *Dimensions* defies these stereotypes. From its onset *Dimensions* stood out as an alternate model. Theory, practice, history, and projects have always co-mingled to advance new modes of thinking. The writing and work of faculty, students, visitors, and outsiders have been presented on equal footing. In the pages of *Dimensions*, the well-established, the lesser-known and the plain not-known have found a platform for the framing of new debates and new polemics for construction of new turns for architectural thinking.

While our current cover is grazed with the number 25, the history of *Dimensions* goes beyond the boundaries of this quarter decade. *Dimensions* was inaugurated in 1956 and was published more or less biannually until 1967. After a hiatus of twenty years, students approached Dean Robert Beckley to reinstate the publication, and thanks to his leadership and vision the magazine has run continuously since 1987. Always student led, the journal has represented diverse points of view. Some issues have been unapologetically "thematic," while others have left it to the reader to ascertain its "theme." Each volume has managed to balance a desire for heterogeneity with a certain (un)spoken cohesiveness. Diversity can be found in all volumes.

Perhaps this balance is the result of the excellence of our faculty advisors, which have included Caroline Constant, Brian Carter, Linda Groat, and certainly Christian Unverzagt who has served as the faculty advisor continuously for almost ten years. Or perhaps this loose cohesiveness of *Dimensions* simply comes from its name. In 1955 the original student editors of *Dimensions* sought to choose a word that provided a precise, yet expansive definition for architecture: "...that DIMENSION, whether apparent or real; physical or imaginary; third, fourth, or fifth, represents our supreme ambition to govern the universe in a multitude of directions. DIMENSION, unlike measure, is flexible, and fundamental, and dynamic. . . ."[1] In In those early days, contributors included Walter Gropius, Richard Neutra, and Félix Candela. Themes prophetically included among others "Ornament" (1965), "Fringe" (1963), "Line" (1960).

Since its re-emergence in 1987, the journal has given us a preview of things to come. Key debates in the architectural discourse of the time have played out in the pages of *Dimensions*—Volume 5's Peter Eisenman/Stanley Tigerman "Vices Versus Verses (or Voce-Versa)" comes to mind. In *Dimensions*, practitioners have claimed new intellectual territories. Among the most memorable, James Corner's seminal 'Field Operations' text was published in *Dimensions 19* at the inception of his practice with Stan Allen, before their thought matured into Fresh Kills. Or Michelle Addington's 'Thinking Small' which set the tone for a shift in attitude toward sustainable issues in the built environment in academia. *Dimensions* has also served as testing ground for emerging practices—ARO, LTL, David Clovers, Howeler Yoon, among others, proved their footing on the pages of Dimensions early on in their careers. One format that has proven fruitful for the journal is student interviews of selected practitioners and thinkers who have visited the

1. Excerpt from the student editorial of the spring 1956 issue. The fall of 1955 was the first time students edited a publication (without a name). In the spring of that academic year the students chose to give the journal a name. The original title was "Dimension," and it is in the 1987 issue that the title is pluralized.

school. From Jeff Kipnis, to Hans Hollein, to Laurie Hawkinson, to our own Dean Emeritus Robert Metcalf, students have posed questions that reframe our thinking about architecture culture. Through his interviews in *Dimensions*, we can trace the evolution in Thom Mayne's position vis-à-vis practice (Mayne is one of the few "outsiders" that appear in *Dimensions* more than once).

Our faculty has gotten to expose the ideas that guide their coursework and their practices. Melissa Harris, Jason Young, Craig Borum, Karl Daubmann, Perry Kulper, Keith Mitnick, James Chaffers, Mireille Roddier, Neal Robinson, Robert Adams, Gunnar Birkerts, Kent Kleinman, to name only a few, have used *Dimensions* to set out provocations against the norm. One can see the tone and evolution of Tom Buresh's Chairmanship through his introductions. Our fellows have used *Dimensions* as a platform to outline the ideas that would later springboard them into practice. The current work of former fellows such as Michael Meredith, Eric Olson, Anca Trandafirescu, Michael Silver, Lisa Iwamoto and Steven Mankouche cannot be understood without the earlier framework presented in *Dimensions*. Among these is my personal favorite: Architect Barbie made its debut in *Dimensions 21*. In a carefully constructed essay, Sanders Fellow Despina Stratigakos critically examined "the role of gender in the formation of professional self identity." As part of her fellowship exhibition she asked students and faculty of Taubman College to develop prototypes of Architect Barbie which were displayed in our gallery. The images in *Dimensions* are striking. Women architects of diverse colors, hairstyles, and fashion sensibilities are displayed in architectural practice. At the time, this was a fantasy since Mattel did not count an architect as part of their "I Can Be" series. While Despina's intent was to discuss gender inequities in the discipline, and cultural stereotypes of who and what makes an architect, she followed suit by lobbying and subsequently persuaded Mattel to issue an Architect Barbie, adding architecture to the repertoire of acceptable disciplines for girls to pursue.[2]

Through its history, the diverse and heterogeneous mode of inquiry presented in the pages of *Dimensions* has served as a unique model of what architecture should be. Its impact on our culture has been multifaceted and expansive, well beyond the boundaries of our institution and the boundaries of the discipline. Architect Barbie is just the tip of the iceberg.

2. On a personal note: For various reasons, my husband and I have not been very keen on Barbie dolls, and we had decided not to let our daughter have one. Her sixth birthday coincided with Mattel's launch of Architect Barbie, and her pleadings were then hard to resist. But I had one challenge: Unlike the diversity embodied in the Dimensions photographs, Mattel introduced only the blond Barbie and one African American Barbie, but left everyone else out of the equation. Wanting for my daughter to be able to identify herself with her doll, I purchased "Teresa" which comes with a scooter, and I had to carefully trade her with blond Barbie without damaging the package or leaving a trace that something was amiss. So now my daughter's Barbie goes to work in a Vespa—which was designed for women to be able to go to work in post-war Italy.

Special thanks to Benjamin Smith for the background research he conducted for this introduction.

Letter from the Editors

Dimensions Staff

Dimensions was reinstated in 1987 by four students who wanted a place to discuss design, and in their words, to "feel the pulse of this College." The journal has taken many forms since 1987, but it has always remained a vehicle for discussion—between the students and faculty, alumni and prospective students, Taubman College and the outside world.

Every edition of *Dimensions* reinvents itself. The book we are handing to the next group of editors has a soft voice. We wanted this edition to be friendly, simple to read. The carefully curated work published here speaks for itself. As editors, we too have tried to "feel the pulse of this college," to span the depth and breadth of the work being done at our school. This year we have added a new section for the Research Through Making program, a design research grant for faculty begun in 2009. We have used the lecturer interviews to draw diverse perspectives from outside the school on the current state of the discipline. Dean Monica Ponce de Leon and Architecture Chair John McMorrough comment on the legacy of *Dimensions* and possible trajectories for the school.

How do we as students feel about our time? In his interview, Preston Scott Cohen describes what it was like to be a student around the time when Taubman College students first decided to reinstate *Dimensions* (and around the time when the members of this year's staff were born). Cohen describes the vacuum created around the question of history as "liberating, terrifying, and exciting." Everything has changed since then, and nothing. Of the current time, Cohen says this: "We cannot understand very well what it is that stands as the point of departure for where we wish to be." This seems even more terrifying, but also even more exhilarating.

It is exhilarating to be able to make a book like this—to have the opportunity to frame the discourse of Taubman College and to participate in the search for those points of departure.

We want to give a special word of thanks to Christian Unverzagt for making *Dimensions* what it is, and for passing on his love of book design to us.

We hope that you enjoy the read.

Robin Chhabra, Emily Kutil, Nathan Mattson, Elizabeth Nichols, and Steven Scharrer

The product of a year-long investigation, thesis occurs in the final semester of the graduate sequence. A self-directed creative project, students engage in the process of research, critique, and synthesis to create works that engage with architectural discourse. Capping the studio is a review by outside critics and a weeklong public exhibition of the work.

2011 Graduate Thesis Awards

Ryan Donaghy

Chris Holzwart

William Liow

Jessica Timmer

Andrew Powers

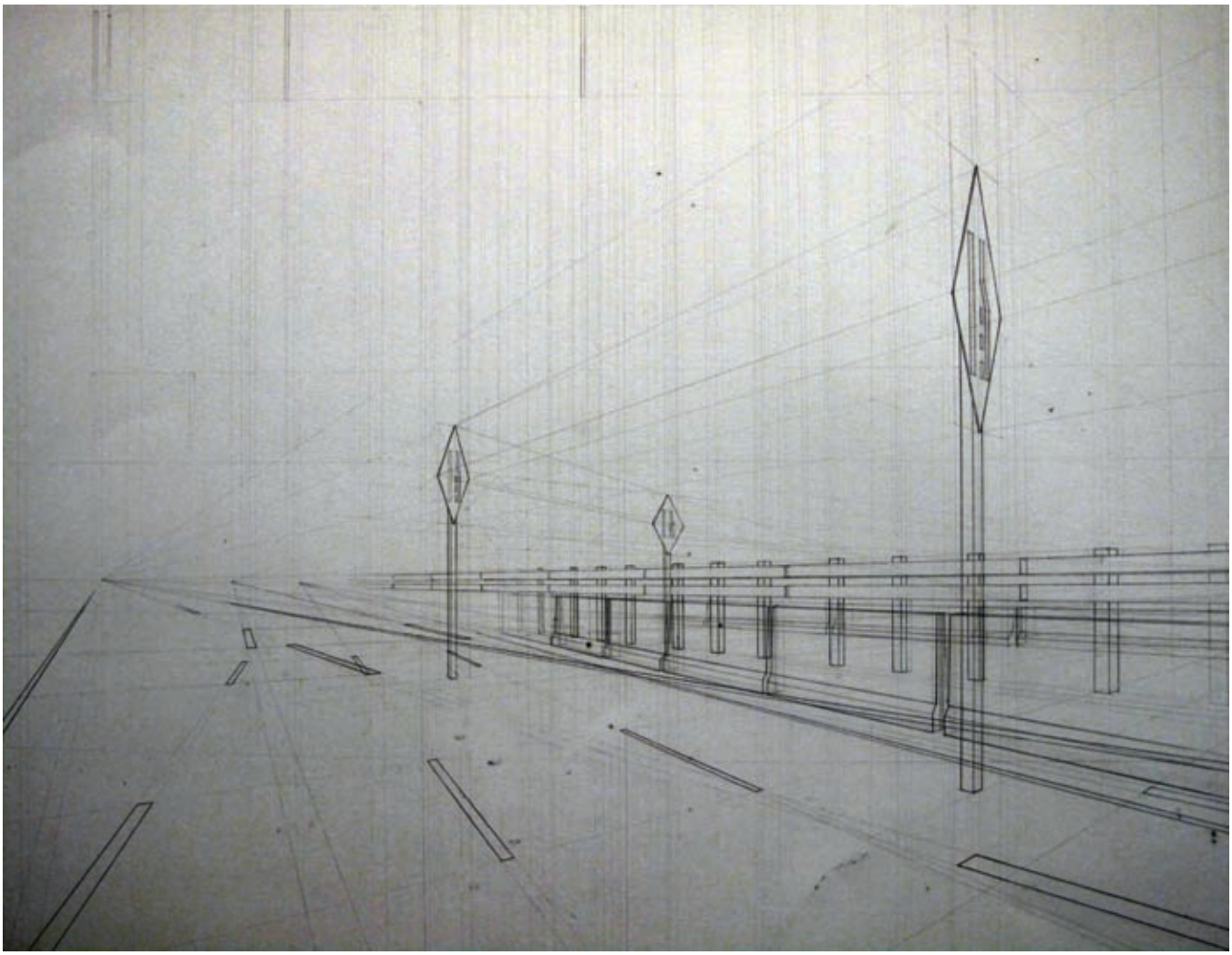
Melinda Rouse

Alivia Stalnaker

Kyle Sturgeon

Katie Grace Wirtz

Thesis Part One



Changing lanes on I-94

Go(Slow)Gas Up

Jacqueline Shaw | Thesis Advisors: Perry Kulper, Thomas Moran, and Jason Young

According to the Oxford English Dictionary, liminality is defined as a transitional or indeterminate state that exists between culturally defined points of an individual's life. It is the collection of unregistered and unnoticed moments, or stories as referred to by de Certau, created in the in-between by the predominant actions of the individual. The liminal condition is occupied by the individual during ritualistic or everyday practices that can be characterized as ubiquitous, banal, or quotidian. A moment of relief is a state of heightened awareness achieved when the liminal condition is disrupted, the routine is changed, and the ritual is forced in a new direction. Paul Virilio writes about the interruption of the liminal condition, referring to it as a lapse.

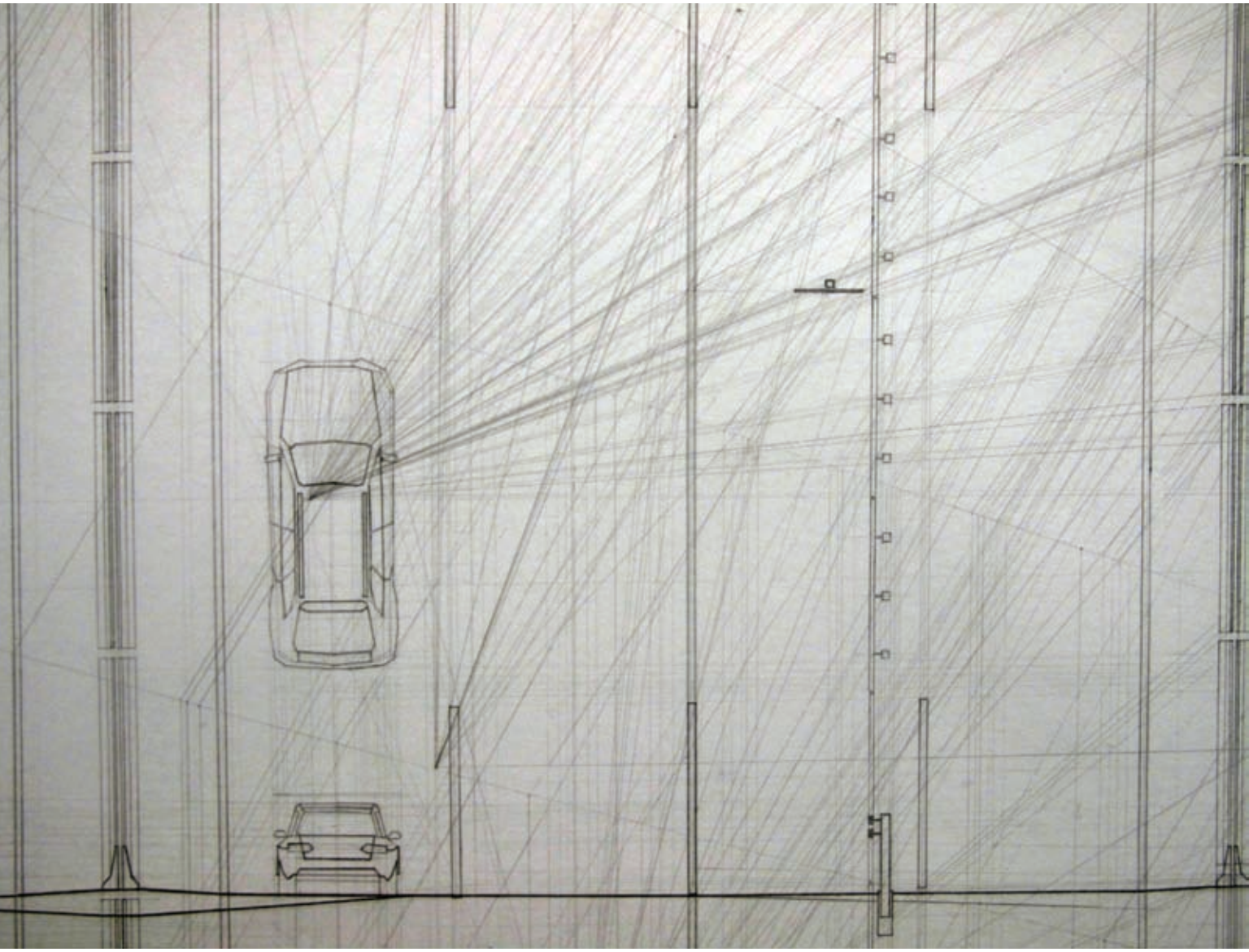
> *The lapse occurs frequently at breakfast and the cup dropped and overturned on the table is its well-known consequence. The absence lasts a few seconds; its beginning and its end are sudden. The senses function, but are nevertheless closed to external impressions. The return being just as sudden as the departure, the arrested word and action are picked up again where they have been interrupted. Conscious time comes together again automatically, forming a continuous time without apparent breaks. For these absences, which can be quite numerous—hundreds every day most often pass completely unnoticed by others around . . . However . . . nothing really has happened, the missing time never existed. At each crisis without realizing it, a little of his or her life simply escaped.*[1]

The everyday practice of the commute is a shared public liminal condition that lasts an average of 23.4 minutes. From arrival to departure, the territory of the body and its extension as the vehicle can define the possible spatial limits and the operations that have become habituated within it. The interconnectivity of the U.S. Interstate Highway System acts as a repository for the collection of individual experiences. As Walter Benjamin states, certain operations have been mastered "in a state of distraction [proving] that their solution has become a matter of habit."[2] A system of linkages, the highway substantiates multiple scales of liminality and means of interruption. The spatial stories of individuals create a public, liminal space. The innately lonely, auto-pilot nature of the commute becomes a public registration that creates a shared collective experience.

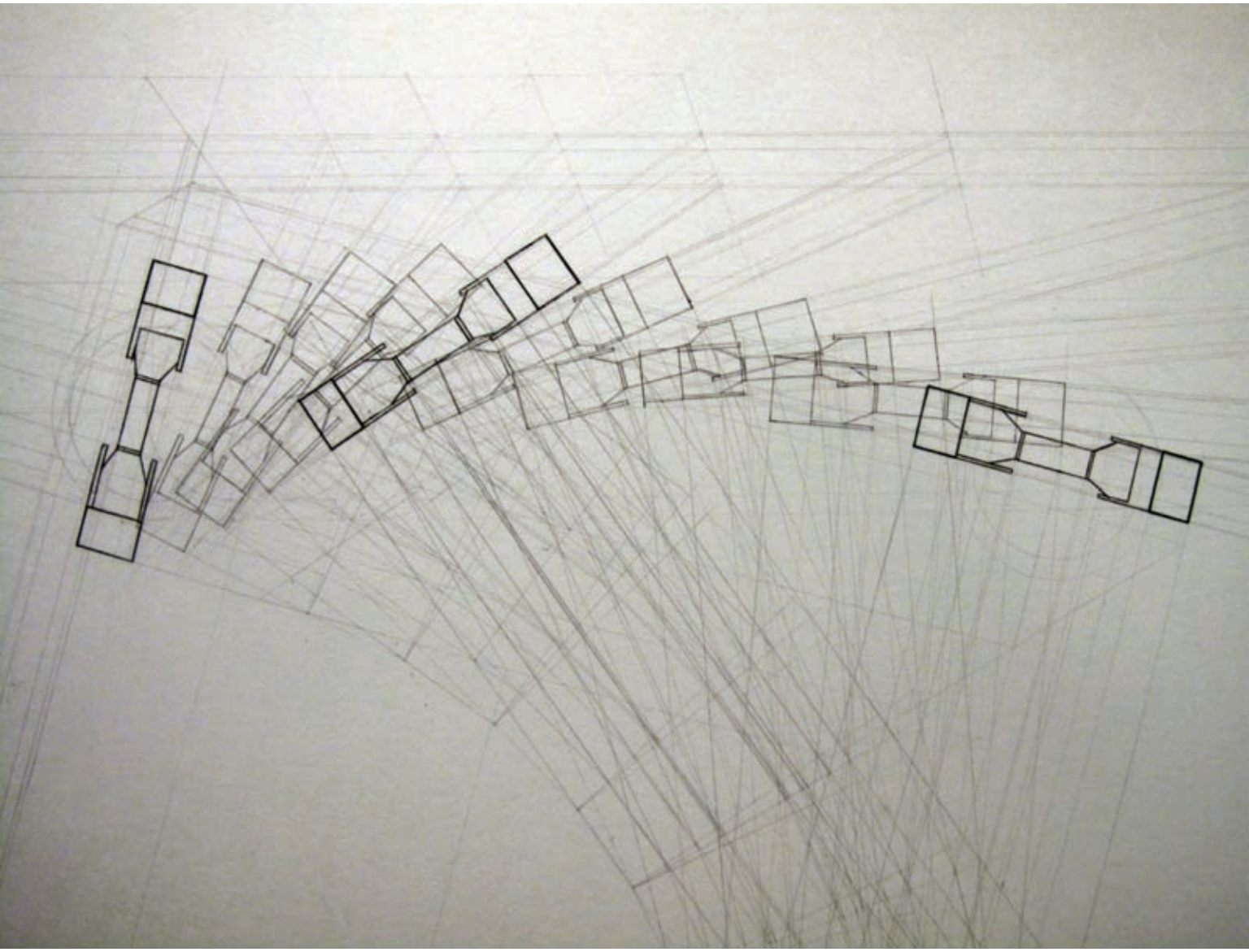
1. Paul Virilio, *The Aesthetics of Disappearance* (Los Angeles: Semiotexte, 2009), 19.

2. Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction" (Germany: 1935).

The imaging of liminality



An extension of the body along I-94



The turning radius of an ignition lock

The sack reconstituted at half scale

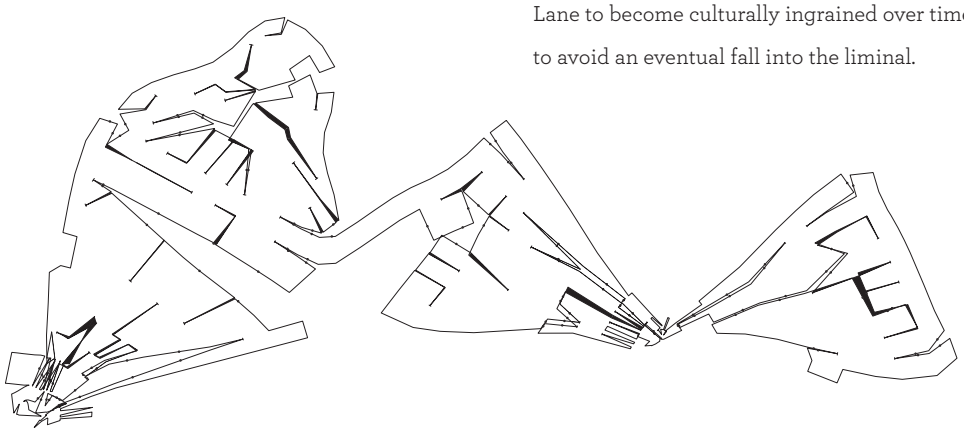
Opposite left:
The sack of gasoline, unfolded and understood in planometric pattern.v

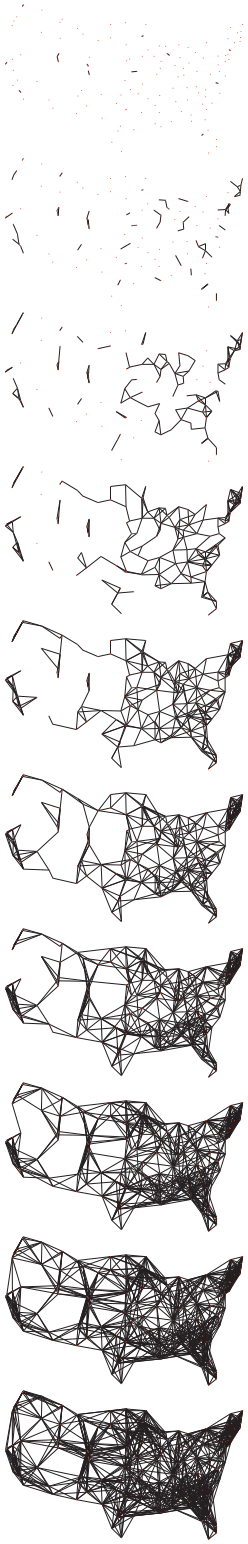
Opposite right:
Notations of unregistered sites from 2011. The average interstate commute time between major U.S. cities is zero to ten hours.

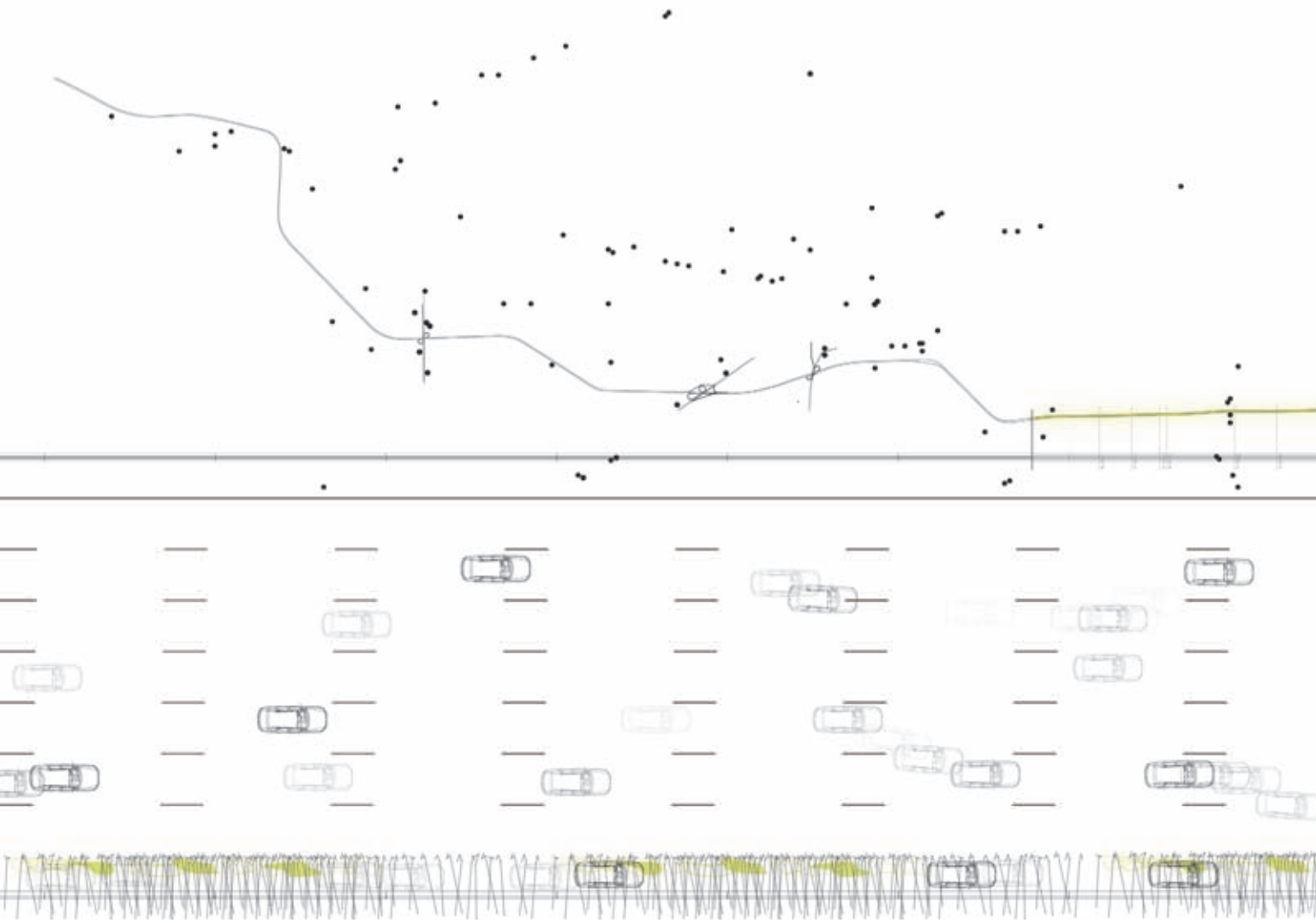
This project investigates a series of unregistered sites acting as backdrops to the everyday practice of the commute. The work studies the operations of the body and its extensions within the context of site-specific vessels predicated by the Interstate—the gas station and public restroom—to propose a recalibration of the potentials of known and accepted signifiers. Through accentuation, a complete dismantling of expectations, and the nothingness of nuance, a heightened level of awareness is created. Sites, parameters, and conditions of the collective quotidian are recast in order to refocus the attention of the individual not on points of departure or arrival, but on the journey, thresholds, and midpoints of a slowed-down existence.

The filling of one's gas tank or the use of a public restroom are habitual, forgotten practices that have the potential to be experienced individually but retain public resonance as everyday practices. They are so deeply culturally ingrained that one no longer thinks about the actions of these practices but only of their effects.

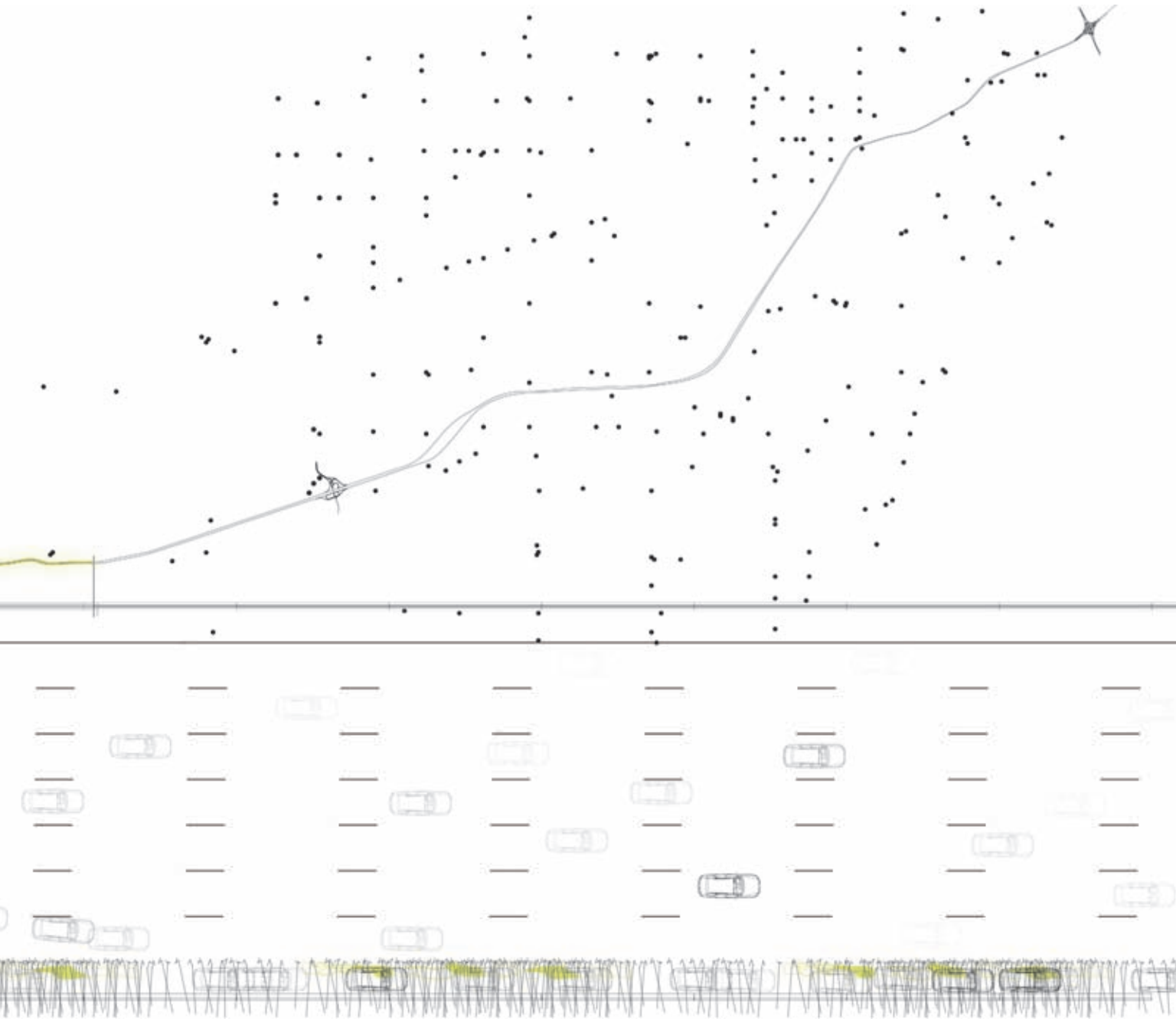
Between Ann Arbor and Detroit, there are 291 gas stations within a fifty-four-mile radius of Interstate 94. The proposal of the 8th Lane, a seven-mile stretch of highway at I-94's midpoint, embeds the everyday with the immediate experience of the spectacular. Utilizing the technologies of in-flight refueling, sacks of gasoline travel along a spine-like structure and attach themselves to vehicles entering the 8th Lane. Requiring vehicles to travel at a speed of seventy miles per hour to operate and supplied by fuel from the existing storage tanks, the sack fills the tank over the specified distance and detaches itself when the tank has reached its capacity. The sack of gasoline and the 8th Lane, which is not a replacement for the gas station as we know it but an augmentation, creates a new collective consciousness of the everyday. The sack is unable to be fully substantiated by the individual; it is only understood through the lens of speed and an engagement in practice. Through its unsubstantiated existence the sack creates a collective awareness of the potentials of what the practice could be and the spatial significance of those new potentials. The sack embeds the 8th Lane with the ability to regenerate new experiences with each refueling; it allows the 8th Lane to become culturally ingrained over time but to avoid an eventual fall into the liminal.







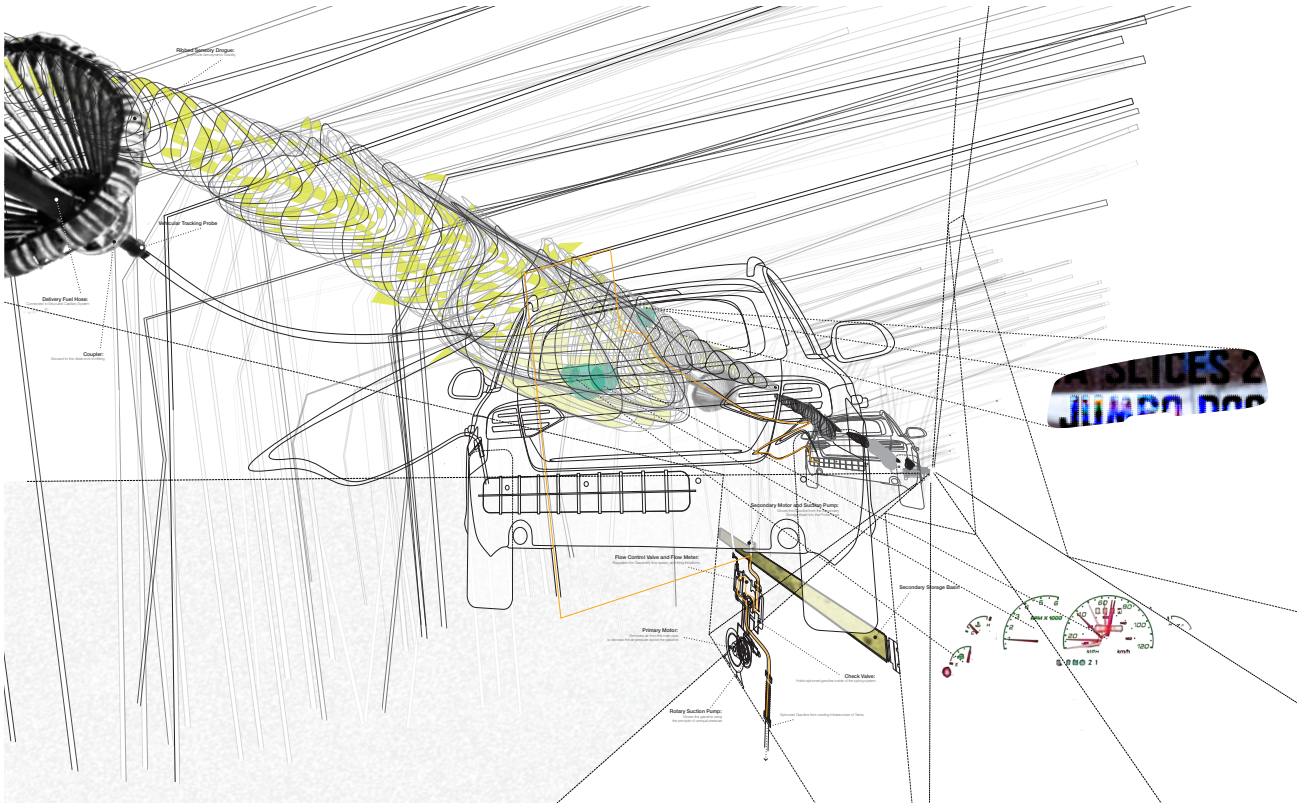
Potential sites and liminal conditions

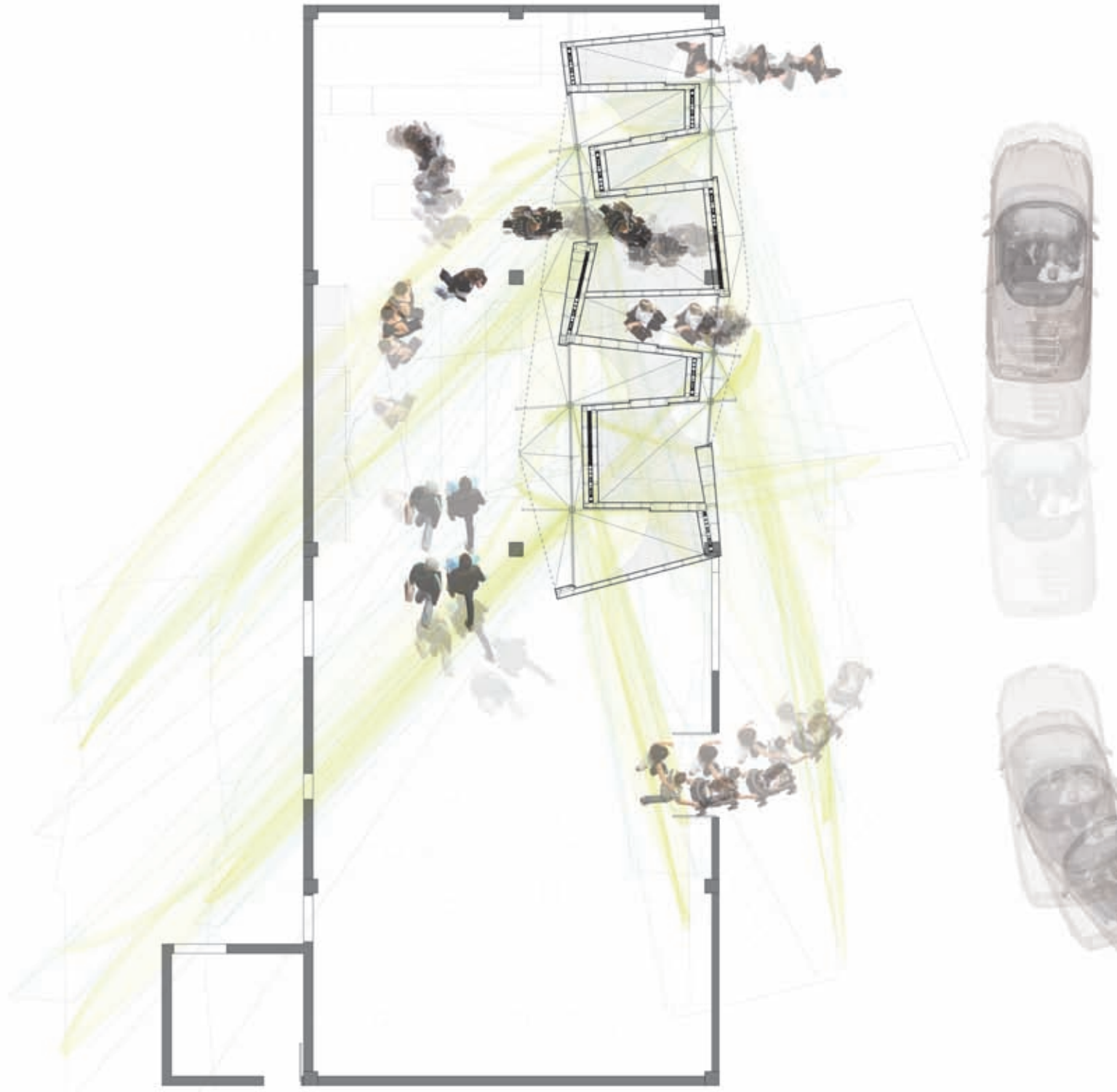


The 8th Lane breeds a new understanding of what the gas station could become. The potential disappearance from the landscape of the 291 gas stations identified as existing within liminal space allows a station to become, at any moment, the reconstituted site of the public restroom. A series of eight stalls interlocking in plan are built on the site as an indeterminate architecture. With the ability to deconstruct and move across the site, the restroom is in a constant state of flux. It repositions itself across the cleared site of the gas station as the individual, through use of the restroom, comes to know the gas station as something other than what is familiar. Eight floor drains, statically positioned and offset from each stall, indicate paving lines. While the drains remain fixed, the floors slope and oscillate within a range of 0.5 inches for utilitarian purposes. Whether recognized or not, the nuanced drain detail of the floor underfoot signifies the immediate altered experience of the public restroom. The site condition regenerates itself overtime as constant repaving reestablishes a flat surface. Similar to the sack of gasoline, the constant fluctuation of the site allows the bathroom to escape the liminal through subtle nuance as time and time again a new experience is born for the individual user and the collective during the daily commute.

Opposite:
The reconstituted restroom

Below:
The sack detaching at a speed of 70 miles per hour.





Contingent Design Theory

A Retroactive Manifesto of the Single Industry City

Lisa Sauvé | Thesis Advisors: Kathy Velikov, Geoffrey Thün, and Cathlyn Newell

Contingent Design Theory is a method of fusing together a narrative contingent on social, political, economic, and spatial issues surrounding a subject. The emergent narrative reveals interrelations otherwise undetectable under the lens of traditional architectural inquiry. These operations provide a translation from parts to whole, an overlap at the moment of crisis. This investigation fcuses on the subject of the single industry city—a blind spot in twentieth century urban narratives—as the subject matter for *Contingent Design*. Local and global issues interweave, revealing overlaps between sites as critical moments and leading to speculative scenario proposals. Latent extraneous conditions are mobilized toward emergent realities.

Collected research

In framing the contingencies relevant to a subject, adjacent issues also become apparent. The narrative exposes these latent issues as actors that inform the future of the subject. Manfredo Tafuri's Historical Project questions the role of the linear narrative, Bruno Latour's Actor Network Theory manipulates these contingencies as new narratives, and Rem Koolhaas' Paranoid Critical Project considers the capacity of an attractor to redirect the narrative. The overlap between these methods becomes the means to investigate a new method that can pull contingencies from the past, adjacent and fringe of a subject and operate on their relations to develop a speculative project.

Contingent Design Theory explores the political, economic, social, material, and spatial issues surrounding a subject. The discovery of these terms and their implications to the subject become relevant when framed within the logic of the narrative. The architectural project aligns these issues through relations of cause, coordination, and coupling. The speculative project begins at the moment of crisis between these compounded issues. The project is informed by the sequence of the narrative and the overlap of contingencies.

Contingent Design Theory tests its operations by investigating the twentieth-century single industry city, which finds itself geographically fixed to the demands of the industry and removed from, yet adjacent to, the flexibility of the mixed-use metropolis. The five sites selected—Hashima, Japan; Jeffrey City, Wyoming; Mt. Gleason, California; North Brother Island, New York; and Picher, Oklahoma—each present their own version of this condition. Each site reveals different industries, resources, community members, and issues at the contingent fringe. Larger contingencies prove to link between sites, informing the crisis. At these moments, the projects coalesce into a larger narrative of the single industry city.

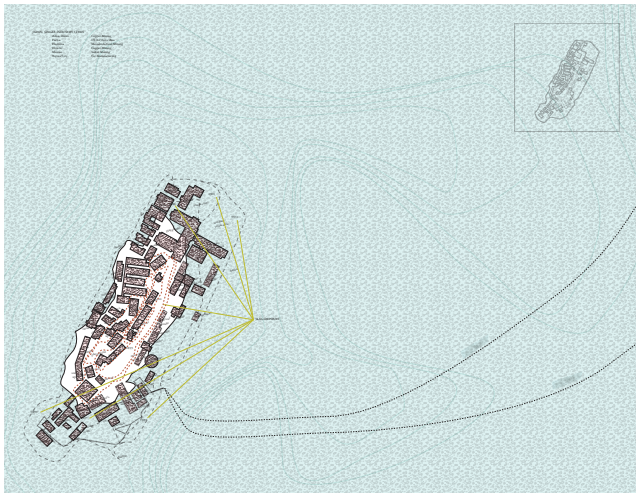
Mt. Gleason, California

Picher, Oklahoma

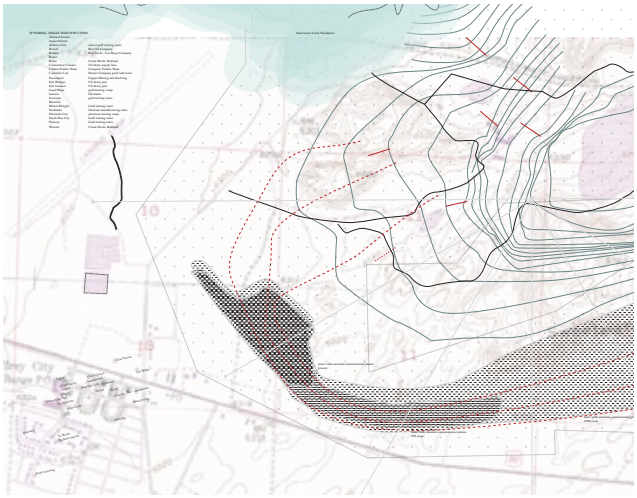
Jeffrey City, Wyoming

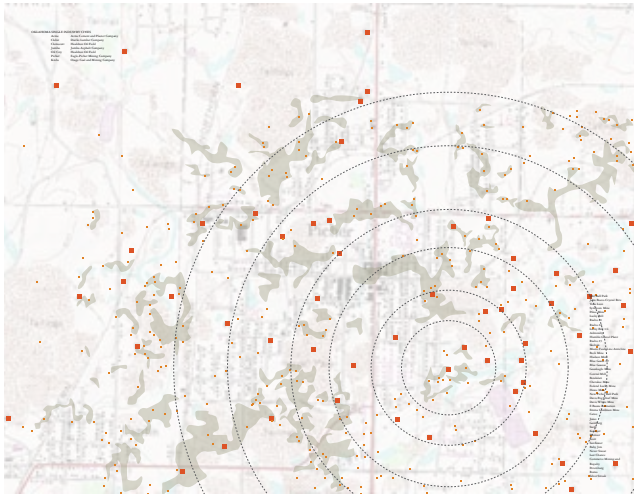
Hashima, Japan

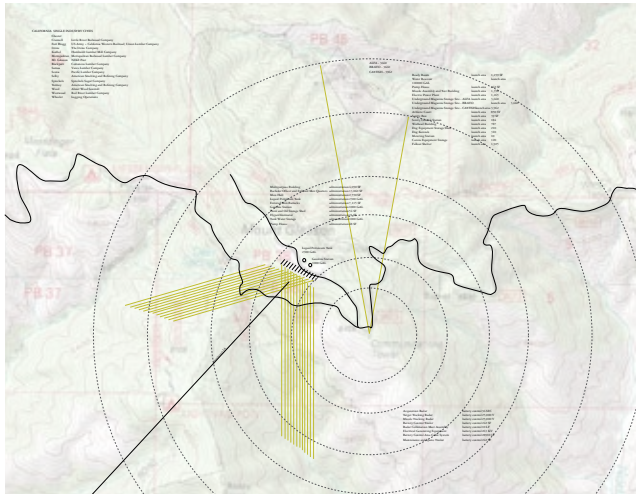
North Brother Island, New York

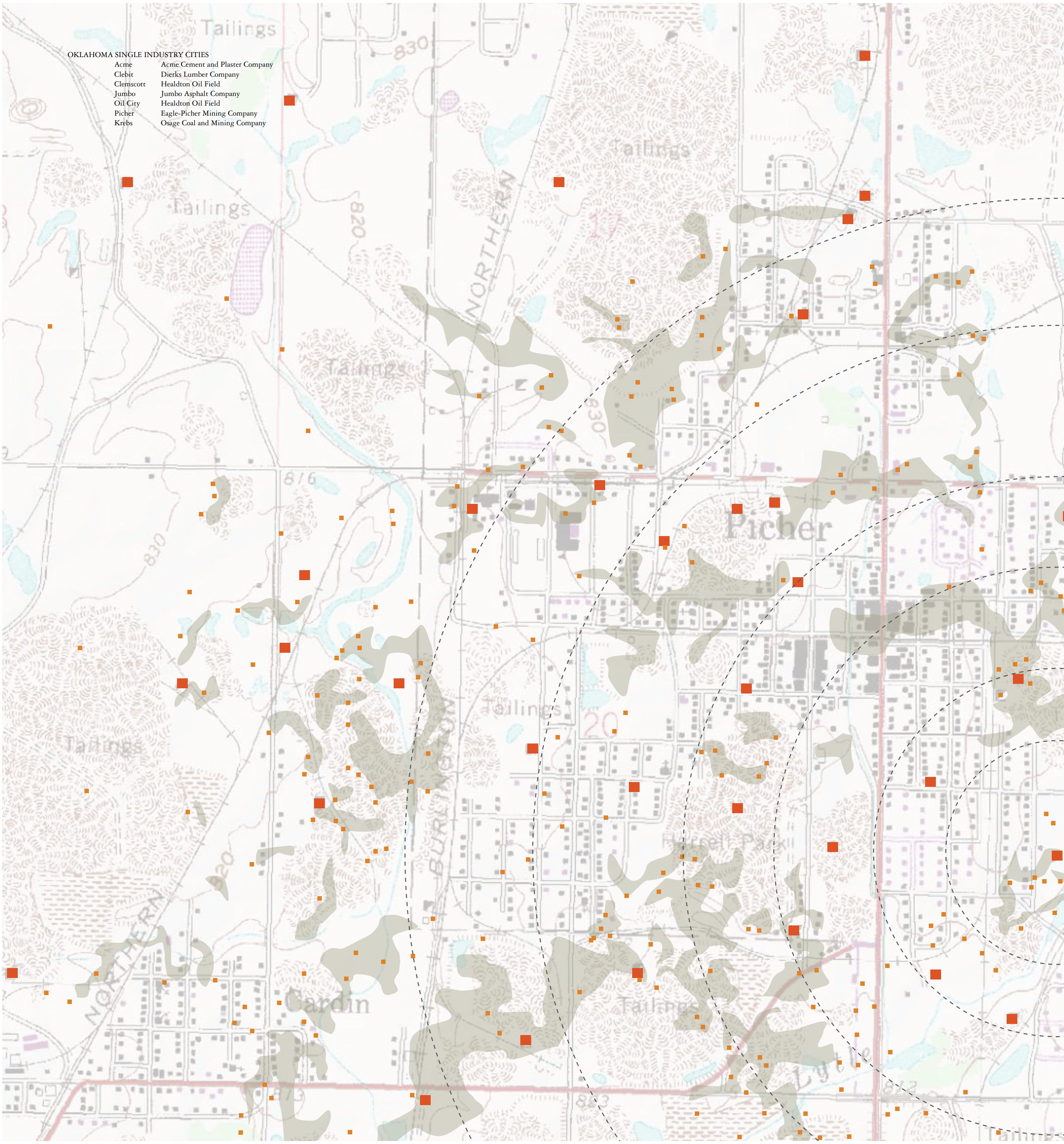


Clockwise from top:
Hashima, Japan; North Brother Island, New York ; Mt. Gleason, Californi; Picher, Oklahoma; and Jeffrey City, Wyoming





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Krebs Osage Coal and Mining Company
Tailings
Picher
Cardin
NORTHERN
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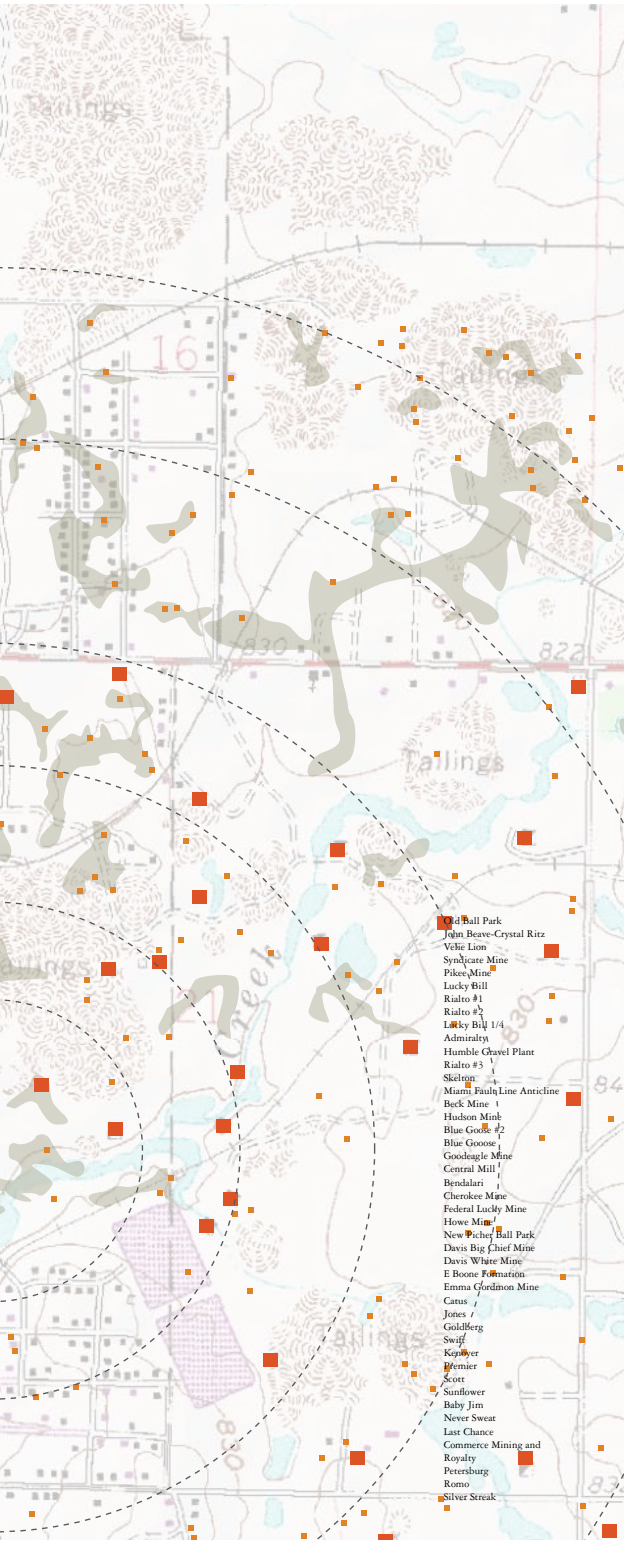
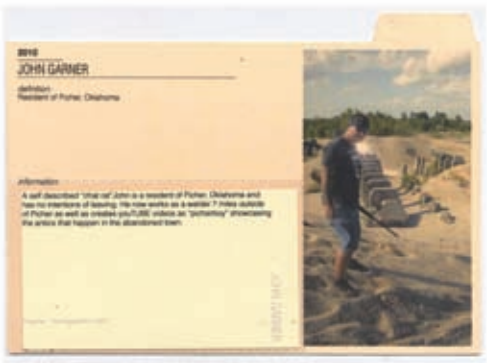
816



Picher, OK

Mines in Picher, Oklahoma served the state's large coal production industry. The land was so intensely mined that much of the town now sits above mining shafts and sink holes. The U.S. Army Corps of Engineers declared the site unlivable and forced all residents to evacuate the area. Property was bought out at cripplingly low prices. The land was then transferred back to the original owner, the Quapaw Indian Tribe, which is restricted from selling the mining chat because of a regulation by the Bureau of Indian Affairs.

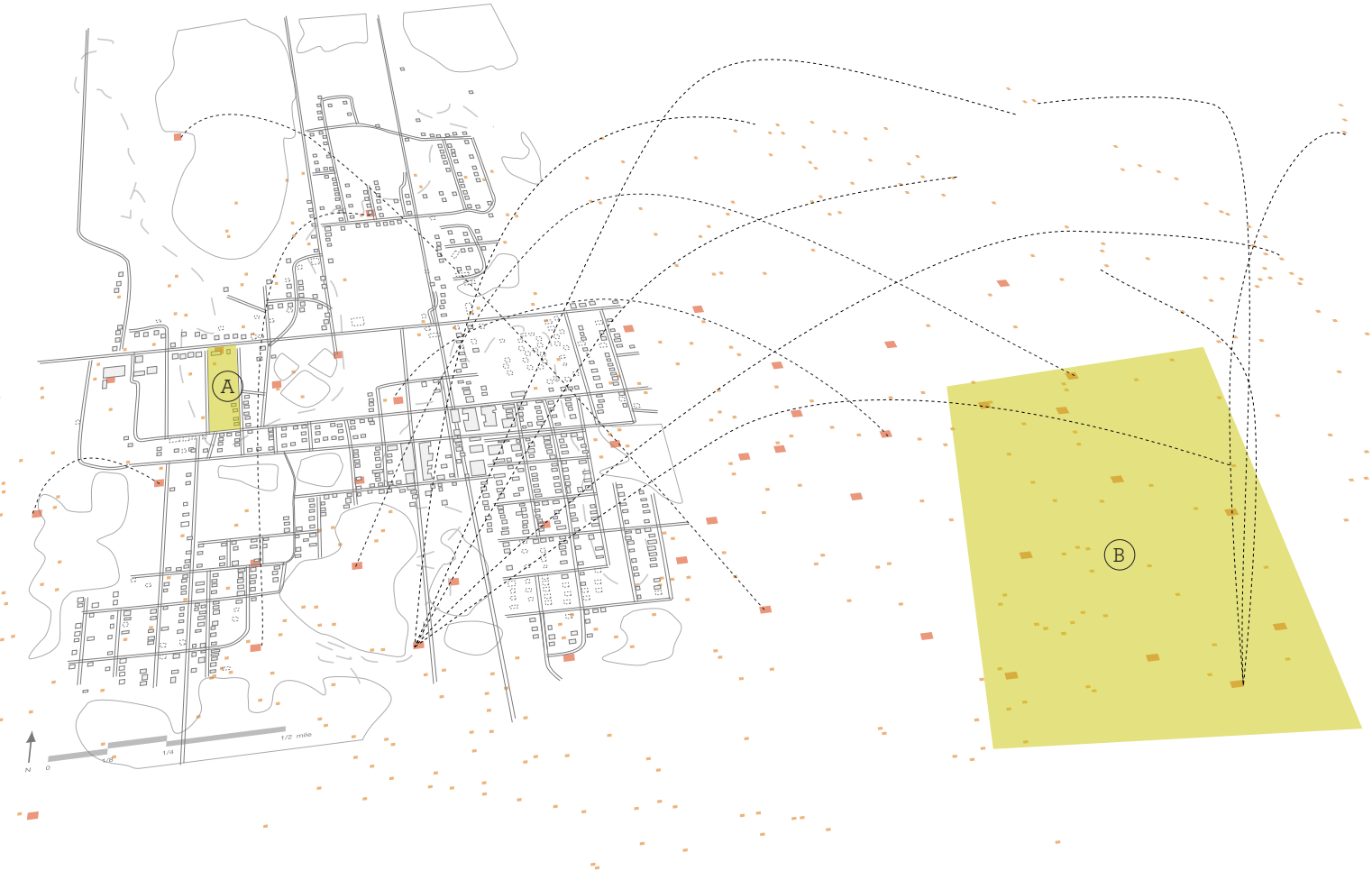


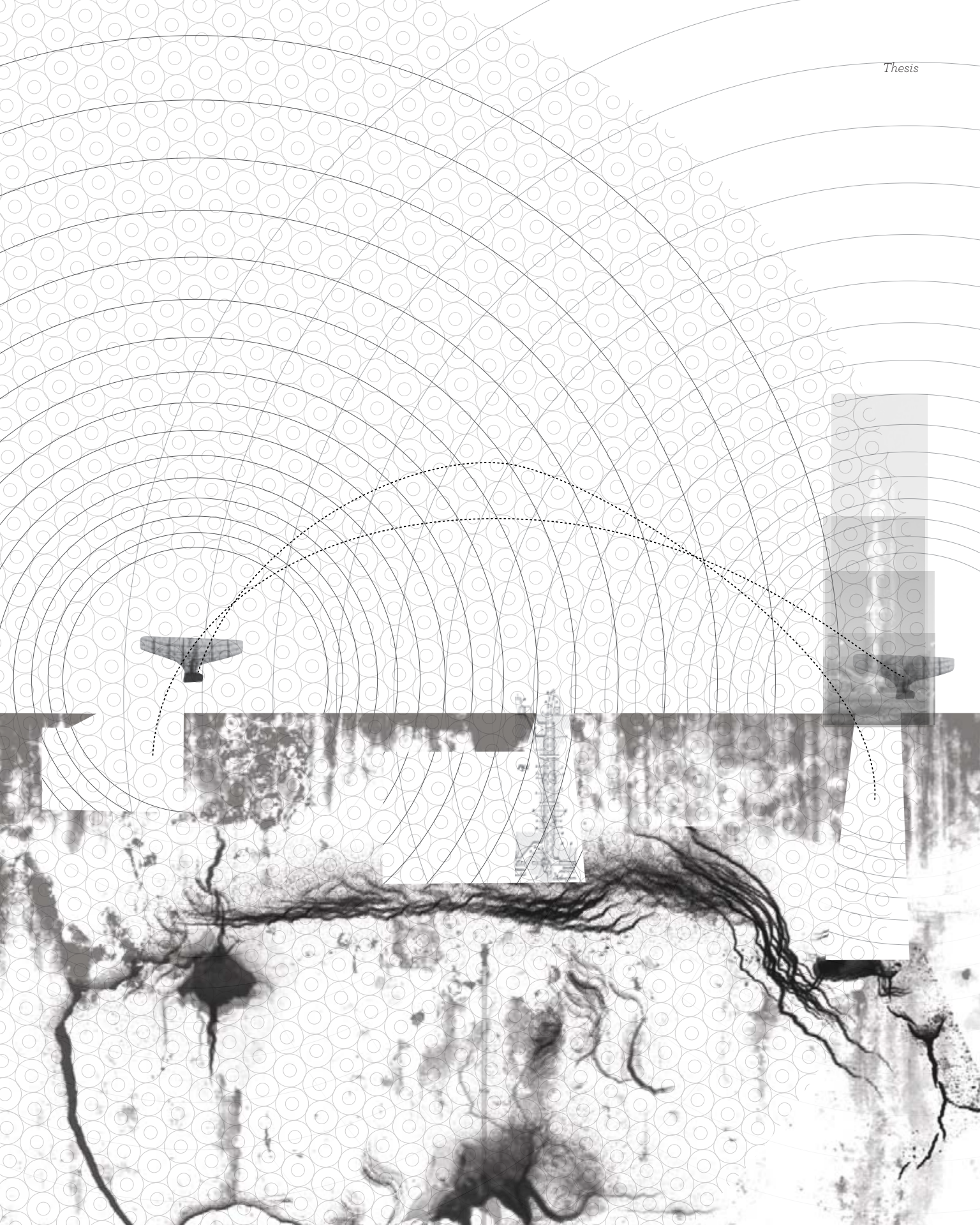
From 1907 through 1946, more than 1.9 million tons of lead and zinc were mined in the area at a value of more than $202 million. To reach the underground bodies of ore throughout the Tri-State mining district, early miners and mining companies excavated hundreds of working and prospective mine shafts. Thousands of drill holes dotted the mining area.

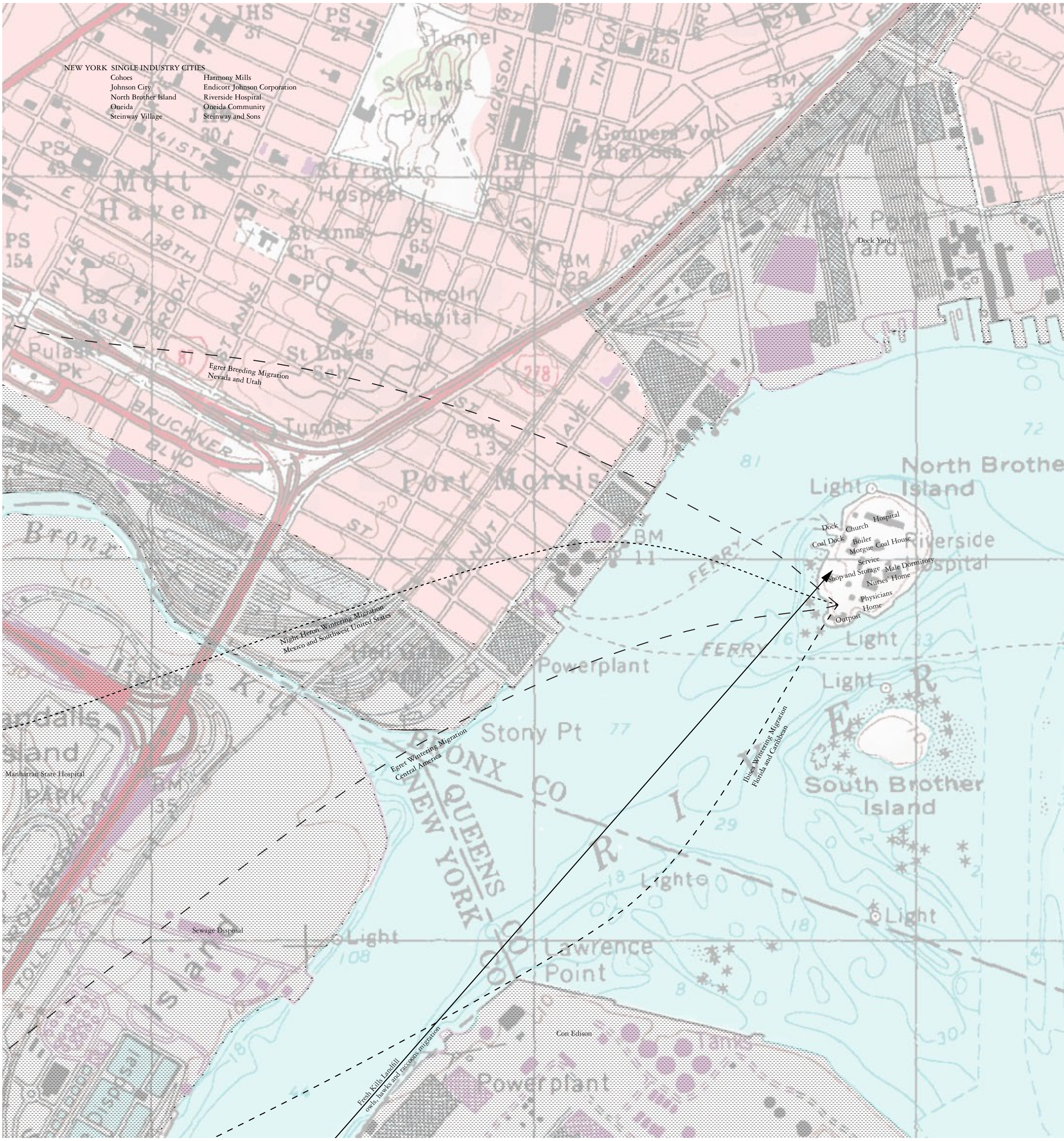
The mining subsidence volume below ground occupies more space than the buildings that rest above. The residual chat from the mining could be used as concrete aggregate to pave a four-lane highway across the United States five times. Harnessing these opportunities from the abandoned site could amplify the residual issues to generate emergent processes.

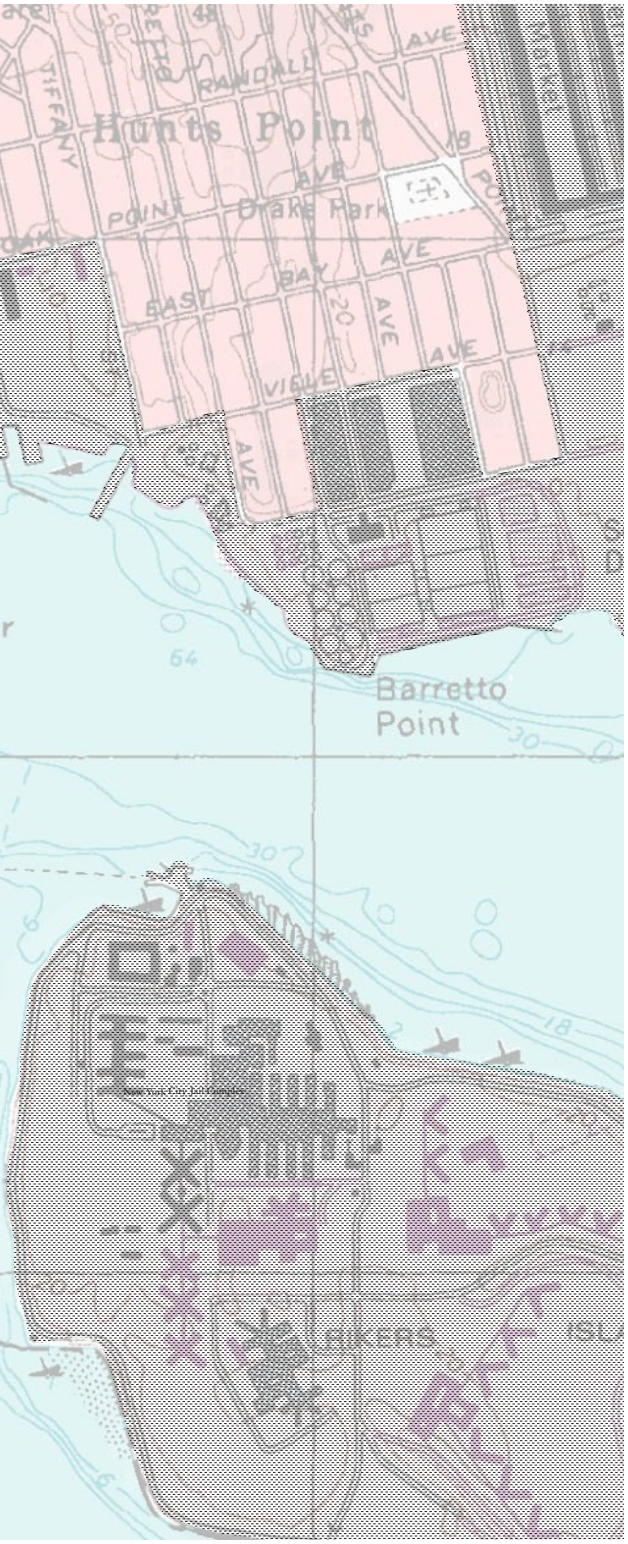
A. 150 S. Frisco St., Picher, OK 74360. J. Hilliard, 58, a former security guard, occupies this house. He declined his initial $77,000 buyout offer, figuring that since the EPA spent about $100,000 remediating his yard, the place should be worth that much more in additional value.

B. The state buyout in Picher also featured a dangerous loophole: The agency capped its payments at five acres per deal, and many farmers had more land than that. Their overage didn't qualify for a buyout, so they're still in business, living elsewhere but commuting back into the Superfund area to harvest their products.






NEW YORK SINGLE INDUSTRY CITIES
Cohoes — Harmony Mills
Johnson City — Endicott Johnson Corporation
North Brother Island — Riverside Hospital
Oneida — Oneida Community
Steinway Village — Steinway and Sons
Dock Yard
Egret Breeding Migration
Nevada and Utah
Dock
Church
Hospital
Coal Dock
Boiler
Morgue
Coal House
Service
Shop and Storage
Male Dormitory
Nurses' Home
Physicians
Home
Outpost
Night Heron Wintering Migration
Mexico and Southwest United States
Egret Wintering Migration
Central America
Ibises Wintering Migration
Florida and Caribbean
Manhattan State Hospital
Sewage Disposal
Con Edison
Fresh Kills Landfill
owls, hawks and raccoons migration



North Brother Island, NYC, NY

North Brother Island, along with its smaller neighbor, South Brother Island, does not exist on the New York City subway map and is hidden even from the locals. The island was established as a quarantine facility during the typhoid epidemic and housed the famous Typhoid Mary.

The site has been bought and sold numerous times throughout the years, but no new development, restoration, or site remediation has taken place. A wading bird population began to settle on the site only to be disrupted by other metropolitan contingencies, such as migrating predatory birds from the Fresh Kills Landfill, and shipping routes that pass along the shores and disturb natural shoreline and wildlife.

The Project

1. Change the Ferry Route

The ferry route from Port Morris to Rikers Island passes directly between North and South Brother Islands. This waterway causes unnecessary interaction between the metropolis and the shorelines.

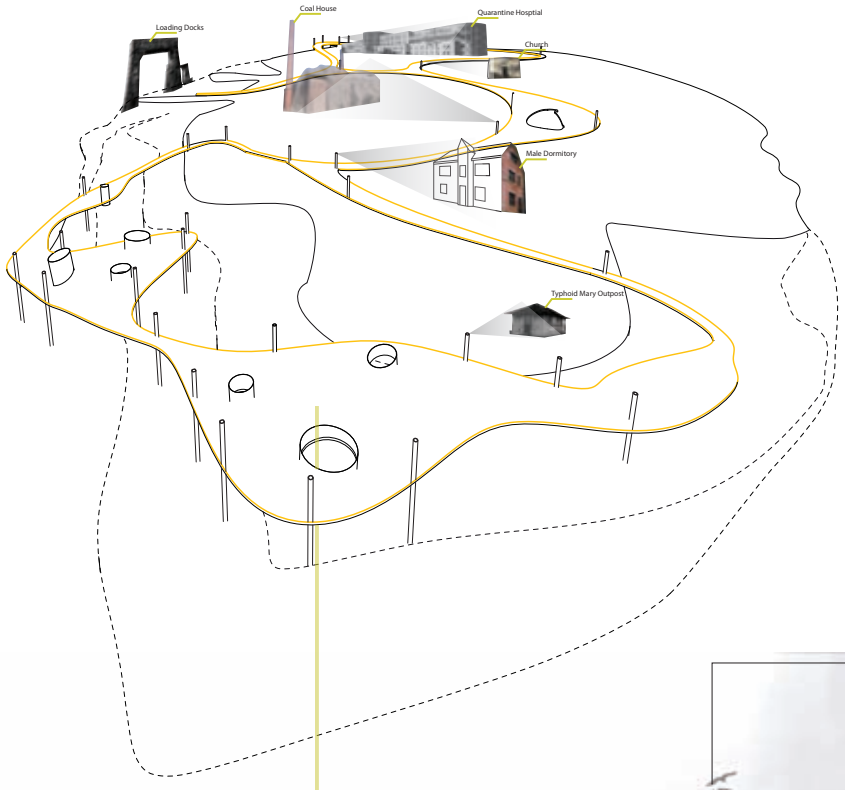
2. Recharge the Shoreline

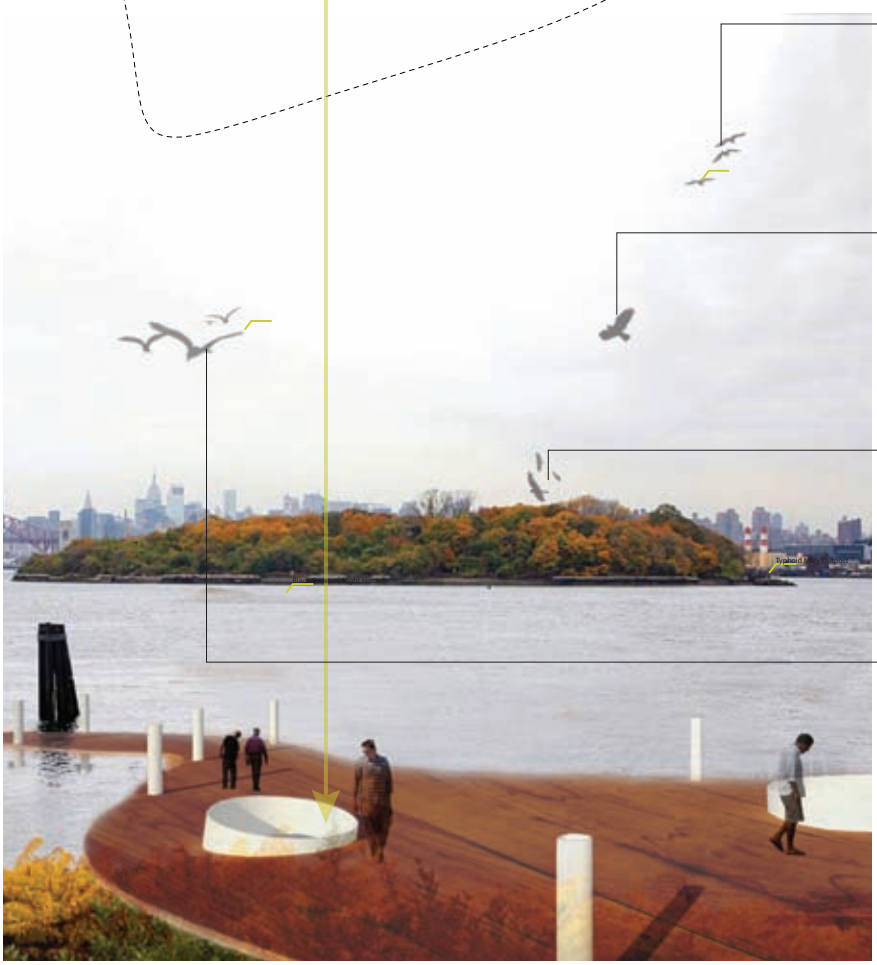
The ground has the capacity to hold and carry contingent issues. During the outbreaks of cholera and typhoid, water control within the ground became a problem. With the removal of the ferry routes and reduction in boating turbulence, reeds and grasses are able to seed. This vegetation is an inviting habitat for wading birds.

3. Build an Elevated Boardwalk

The elevated boardwalk is independent from the ground. It traverses through the island's scenic landscape and ruined buildings. Reducing ground agitation encourages wading birds to nest on the island. The designated walkway guides visitors away from unsafe buildings and towards their destinations. Its path provides viewing points and a way to more closely monitor the habitat to protect wading birds against migratory predators from the Fresh Kills Landfill.

1. Wading nests
2. Viewing oculi
3. Tourist boardwalk
4. Original ferry route
5. South Brother Island
6. New ferry route



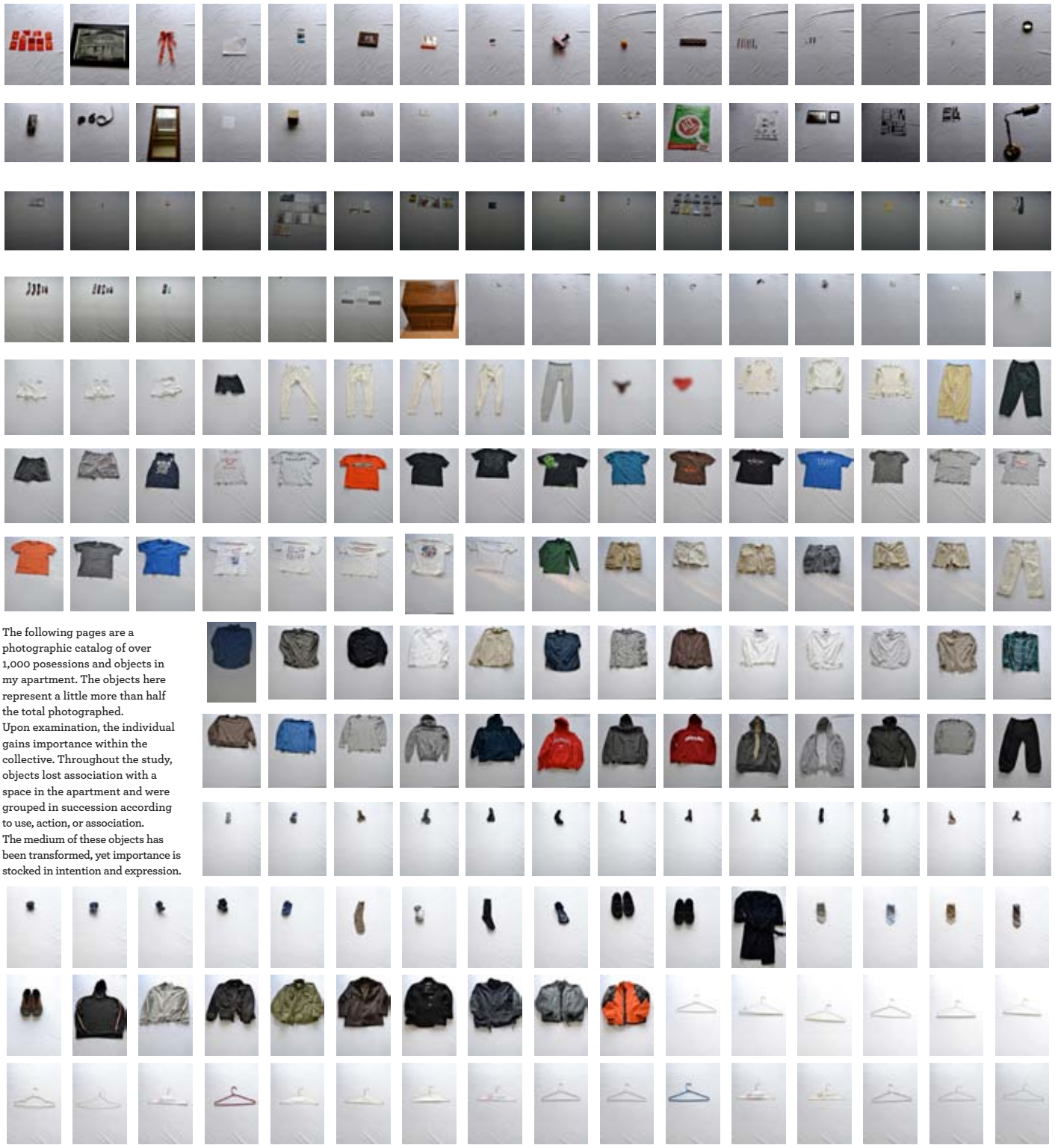


American White Ibises
size: 25 in. long;
diet: small fish and crustaceans in shallow water;
nesting: in mixed colonies with sticks on ground or over water. 2–5 eggs.

Black Crowned Night Heron
size: 25 in. long, 28 oz.;
diet: fish, frogs, crustaceans, insects, and small birds at the water's edge;
nesting: in colonies on platforms of sticks below trees. 3–8 eggs.

Snowy Egret
size: 24 in. long, 13.2 oz.;
diet: fish, crustaceans, insects, and small reptiles in shallow water;
nesting: in colonies on a shallow platform of sticks. 3–4 eggs.

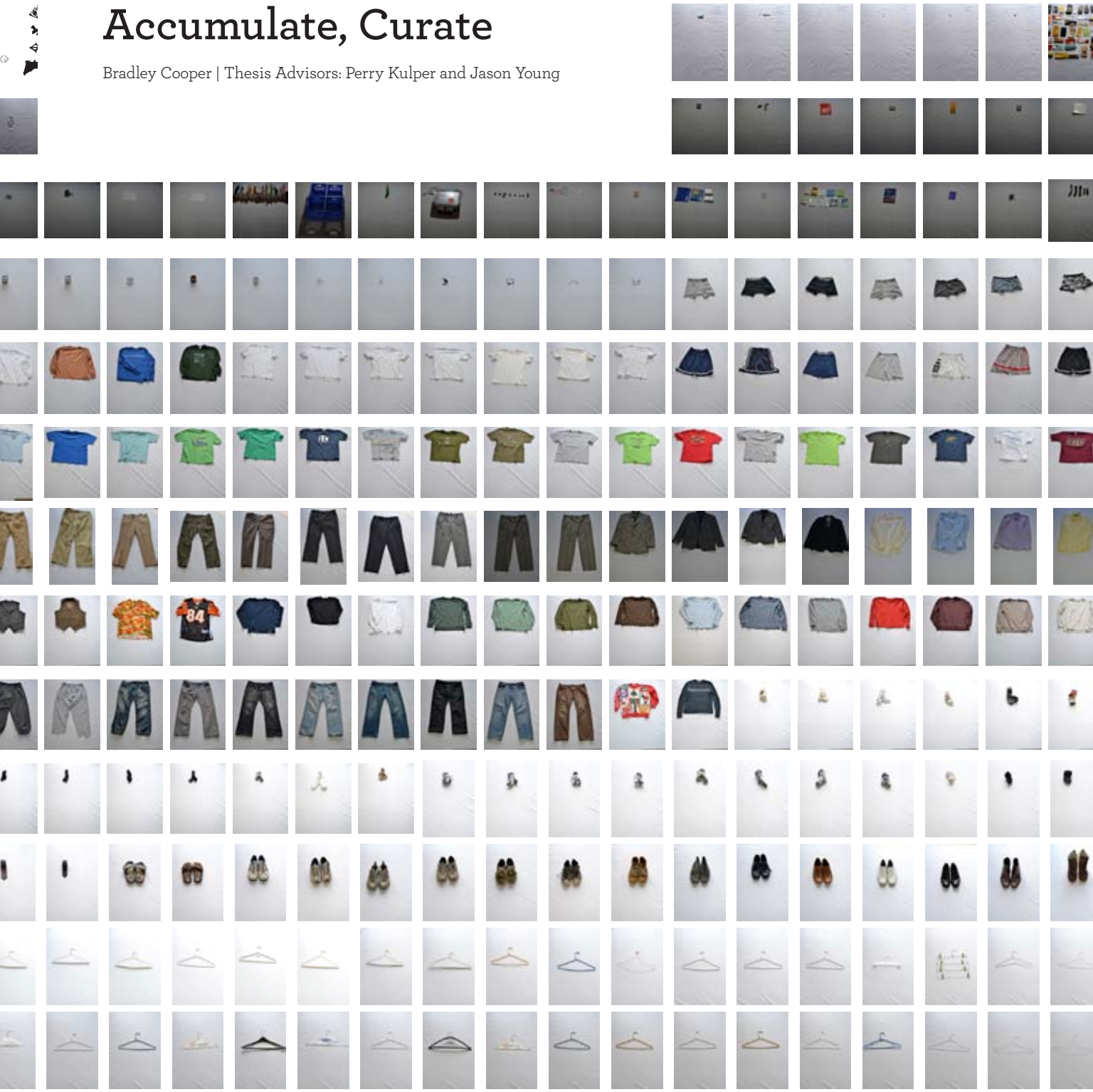
Western Reef Egret
size: 40 in. long, 2 lbs.;
diet: fish, crustaceans and molluscs in shallow water;
nesting: in mixed colonies of wading birds on ground nest of sticks. 2–3 eggs.

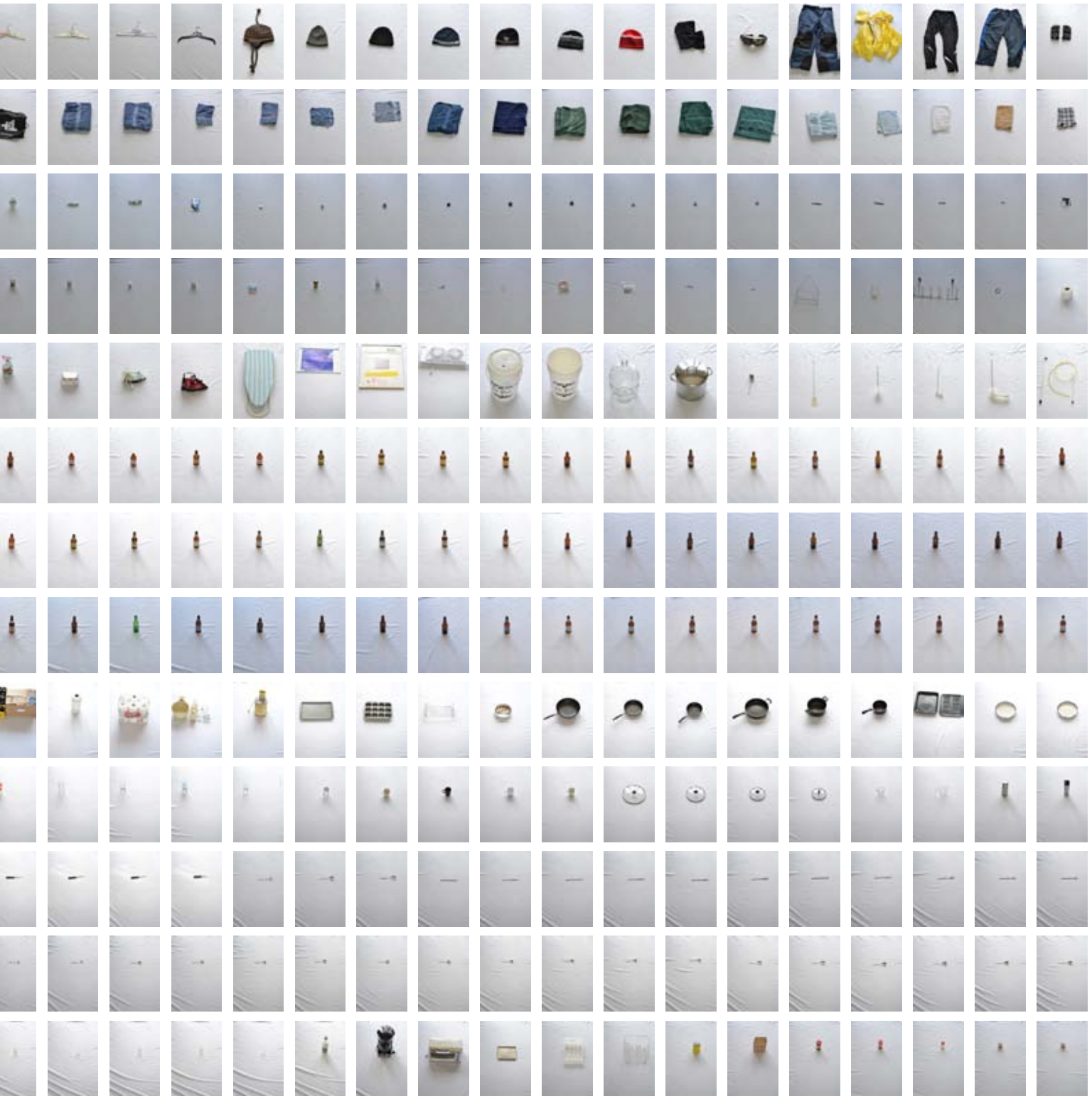


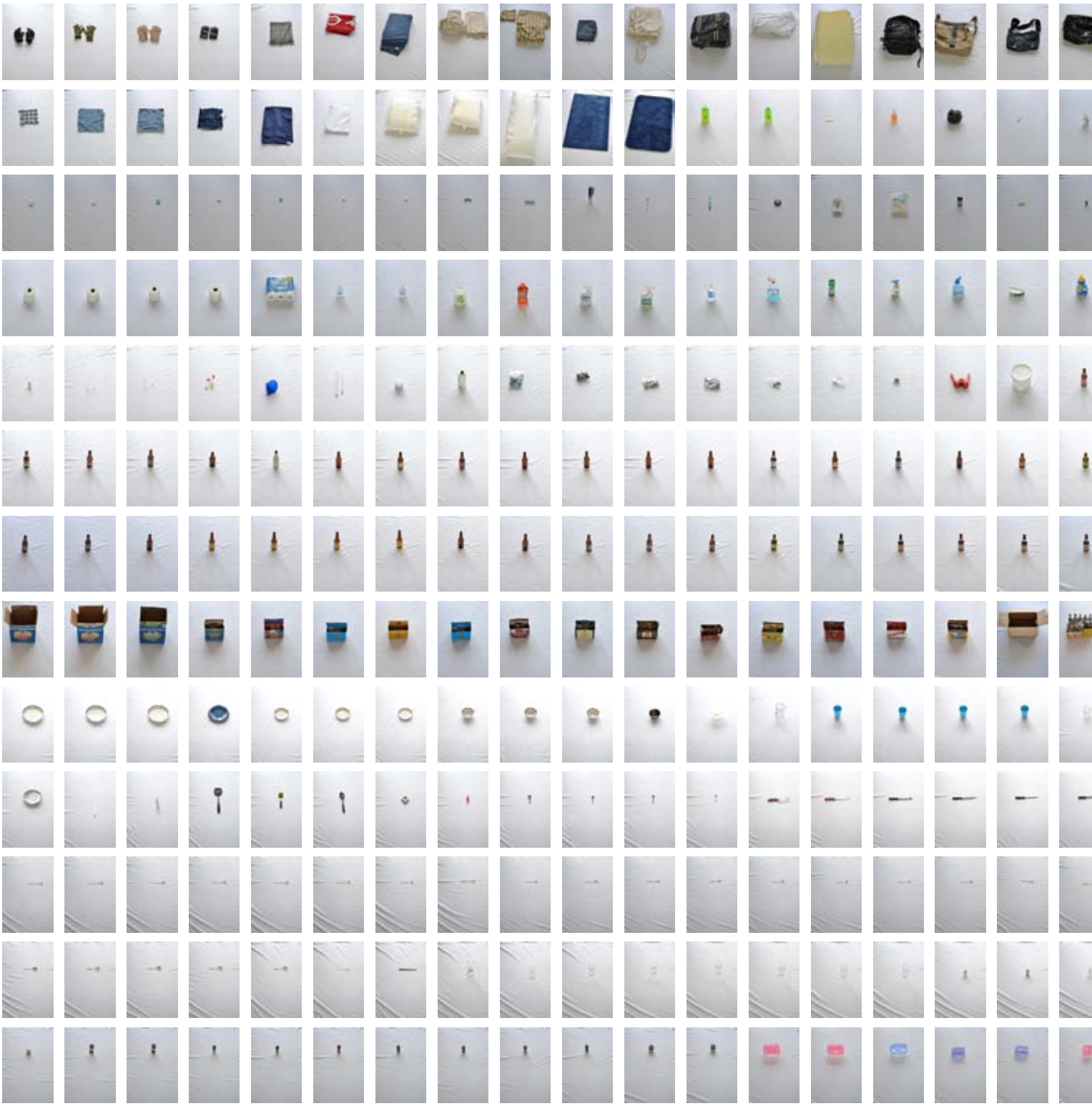
The following pages are a photographic catalog of over 1,000 posessions and objects in my apartment. The objects here represent a little more than half the total photographed.
Upon examination, the individual gains importance within the collective. Throughout the study, objects lost association with a space in the apartment and were grouped in succession according to use, action, or association.
The medium of these objects has been transformed, yet importance is stocked in intention and expression.

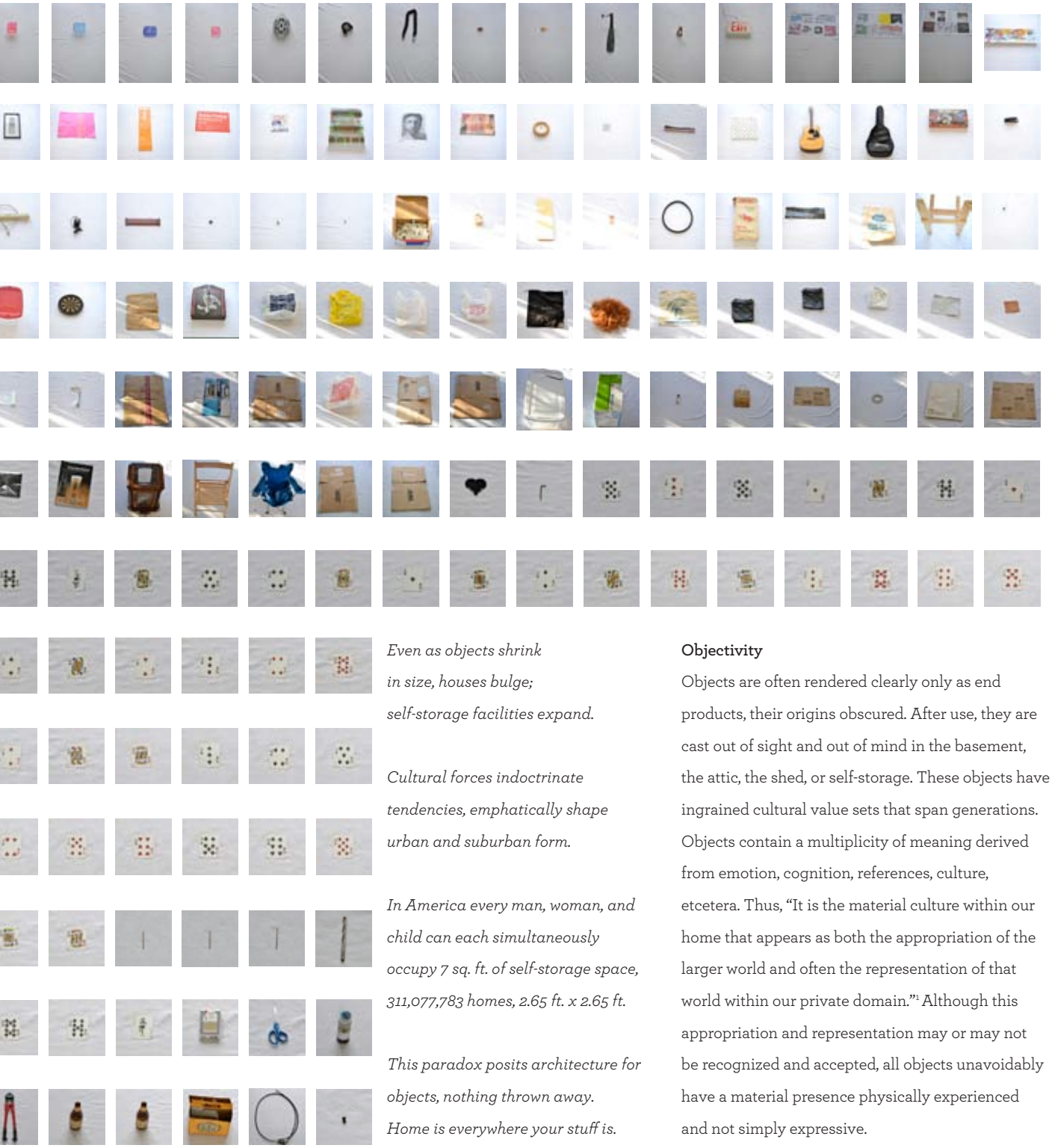
Accumulate, Curate

Bradley Cooper | Thesis Advisors: Perry Kulper and Jason Young









Even as objects shrink
in size, houses bulge;
self-storage facilities expand.

Cultural forces indoctrinate
tendencies, emphatically shape
urban and suburban form.

In America every man, woman, and
child can each simultaneously
occupy 7 sq. ft. of self-storage space,
311,077,783 homes, 2.65 ft. x 2.65 ft.

This paradox posits architecture for
objects, nothing thrown away.
Home is everywhere your stuff is.

Objectivity

Objects are often rendered clearly only as end products, their origins obscured. After use, they are cast out of sight and out of mind in the basement, the attic, the shed, or self-storage. These objects have ingrained cultural value sets that span generations. Objects contain a multiplicity of meaning derived from emotion, cognition, references, culture, etcetera. Thus, "It is the material culture within our home that appears as both the appropriation of the larger world and often the representation of that world within our private domain."[1] Although this appropriation and representation may or may not be recognized and accepted, all objects unavoidably have a material presence physically experienced and not simply expressive.

Within the home, escape from continuous connectivity and confrontation with accumulation is rare.[2] The home has become storage, retail outlet, entertainment venue, and manufacturing facility. All objects mediate interaction with architecture, masking its understanding as an object itself.

Logistics

At many distribution centers' "logistic parks,"[3] new waves of employees exchange places with daytime workers just as most of the population returns home from work. Floodlights turn on. New shipments are received, sorted, and made ready for dispensation. Tuna can arrive at a supermarket in Great Britain 52 hours after it has been plucked from the Indian Ocean: "logistical genius."[4] Early and mid-twentieth century highway infrastructure facilitates the transportation of goods on a local level with unprecedented speed. Consumption patterns fuel the endless cycle of distribution that infrastructural support makes possible.

Industrialization and managerial capitalism have created a manufacturing system centered on continuous processes enabled by machines and standardization. These processes produce large quantities of multiples that were once only obtainable in small numbers by a wealthy class.

Multiplicity

Traditionally, a material value system influenced by the wealthy class prioritized "Fine-Arts—sculpture, painting, and souvenirs of the aristocracy—as a primary index of taste, education and power."[5] Sir Hans Sloane's 79,575 rare objects, bequeathed to King George and the British nation, became the foundation for the British Museum. Collected on a basis of history and authenticity, these objects were far removed from everyday use and circulation.

In 1802 Josiah Wedgwood donated the Portland Vase to the British Museum. When the vase was discovered in 1810 to be a copy made through industrial ceramic processes, the museum procured the original. The scandal not only increased the fame of the original Portland Vase; its copies themselves became revered. The value of authorship and authenticity slowly began to wear away, crossing a "Line of Empire" into a "Machine Culture."[6] Eventually, because of access to mass-produced material goods, the consumer middle class began shaping cultural values. The Great Exhibition of the Works of Industry of All Nations was held in the London suburb of Hyde Park in 1851. Noted for the architecture of Joseph Paxton's Crystal Palace, the exhibition mixed objects of long-held symbolic value with everyday industrial objects of utilitarian value. Paxton's grand cast iron structure, clad in glass, acted as a 19-acre display case for 13,937 exhibitions.

Accumulation

The home is now a drawer full of objects:

> *[The home is] little more than a repository of an exceedingly wide range of artifacts. It contains the traditional bed stove table and chairs, of course; but it also contains (among other things) freezers and furnaces, Mixmasters, medicine, bedside lights, rugs,*

1. Daniel Miller, "Behind Closed Doors," in *Home Possessions* (Oxford: Berg, 2001), 1.

2. Jonathan Crary, "On the Ends of Sleep: Shadows in the Glare of a 24/7 World," *Quaderns portàtils* 8 (June 25, 2007), www.macba.es/uploads/20070625/QP_08_Crary.pdf. Crary suggests sleep may be the rare exception to continuous consumption and connectivity, yet he admits that even the drug Ambien was "recently discovered to have the side-effect of causing extravagant somnambulant consumption of food."

3. A. De Botton, *The Pleasures and Sorrows of Work* (New York: Pantheon Books, 2009), 40.

4. Ibid., 46. De Botton chronicles the life of the tuna caught in the Maldives and accompanies the fish on its journey.

5. N. Cummings & M. Lewandowska, *The Value of Things* (Boston: Birkhäuser, 2000), 18. Neil Cummings and Marysia Lewandowska in *The Value of Things* make a much clearer distinction between a "social-elite," urban middle-class, and urban working class. Here the distinction between classes and their influence on cultural values is less important. The importance lies in large-scale participation in shaping material values, which had rarely occurred across classes.

6. Bruce Sterling, *Shaping Things* (Cambridge, MA: MIT Press, 2005).

lamps, thermostats, letterboxes, pictures, radios . . . mousetraps, family treasures, contraceptives, bankbooks, fountain pens, and the most recent journalistic proliferations.[7]

Similarly, many objects inside a building act as storage themselves—cupboard, closet, cellar, back room, refrigerator, freezer, bookcase, desk, cabinet, display case, china cabinet, armoire, pantry, toy chest, dresser, nightstand, garbage cans, Tupperware—while simultaneously shaping space. The rise of Tupperware illustrates the evolving culture of accumulation. Developed in the 1940s, Tupperware flourished in post-World War II society. Its advertising avoided direct references to plastic and technology. The product was marketed as "Fine Art for 39 cents," and when colors were introduced to the plastic product, they were described as lemon, lime, raspberry, ruby, amber, and sapphire blue. The product's utilitarian qualities were downplayed in favor of aesthetics: bowls that had a "profile as good as a piece of sculpture."[8] But the product owes its success to functional superiority as well as Tupperware is great for airtight storage.[9]

Tupperware captured the ethos of symbolic value while remaining a utilitarian object. Owning Tupperware became a necessity of having, and eventually led "to a generalized sliding of having into appearing."[10] Tupperware not only stored objects, but also enhanced the home décor and would bring gratifying comments from guests. One could shop from home through Tupperware Parties, which now unfold online. Retail and sales infiltrated the home in force.

Even before Tupperware parties, a new house itself could be purchased over the phone. Sears Roebuck and Company's mail order catalog offered a variety of house plans for purchase. The infrastructure system in America allowed the home building materials to be shipped to the desired location. Beginning in the 1920s, the catalog's house plans begin to show dedicated storage space specifically articulated in the plans. However, by the 1950s, the home was thought to be too small to contain all of the products the modern American collected, "a bulky anachronism in an otherwise industrial society, clumsy, malfunctioning, wastefully built."[11] The home's storage configuration needed to respond to new products of the industrial economy. Accelerated access to goods through new technologies has increased objects' involvement with architecture. The nature of collecting has not changed for centuries; the culture of accumulation has. A collection of unique, coveted, or rare objects, holding symbolic value for a culture, was once limited to the wealthy and elite. Slowly, mass production gave way to the symbolic value of reproduced objects readily available for mass consumption. Along with lower prices and large quantities, these objects could move easily across regions and continents.

The sheer volume of these accumulated objects calls for an "architecture of objects" that prioritizes a singular program: storage. "Architecture for objects" accepts mediation, flux, and fluidity in the objects' lives. Architect, user, and building participate in active curation.

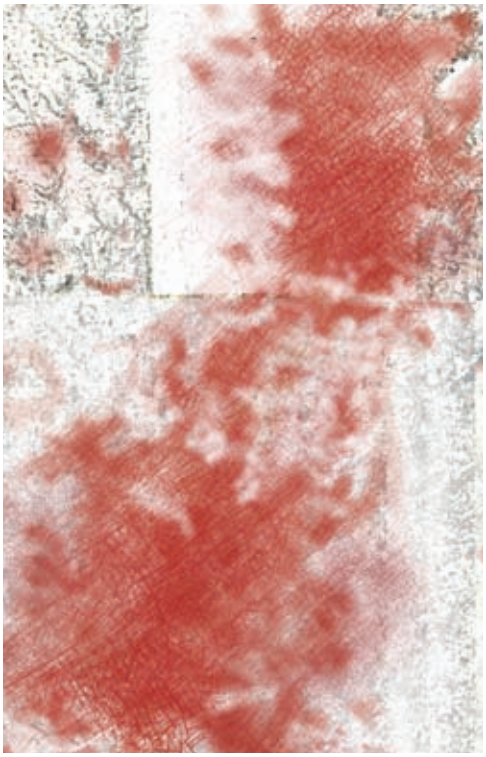
7. Alison J. Clarke, "Tupperware: Suburbia, Sociality and Mass Consumption" in *Material culture: critical concepts in the social sciences, Volume 1*. This quotation in Clarke's essay is from a 1956 study of a North American suburb titled "Crestwood Heights." For further reading on Clarke's work on Tupperware, see: Alison J. Clarke's *Tupperware: The Promise of Plastic in 1950s America*.

8. Ibid.

9. Anath Ariel De Vidas, "Containing Modernity: The Social Life of Tupperware in a Mexican Indigenous Village" in *Ethnography* 9, no. 2 (June 2008): 257–284, http://online.sagepub.com.

10. Guy-Ernest Debord, *Society of the Spectacle*, rev. ed. (1977), 17.

11. George Nelson, "Storage" in *Interiors Library* (New York: Whitney Publications, 1954), 4.



Left:
MZ 1995 (Saturation corresponds to settlement concentration.)

Right:
MZ 2010

Below:
MZ Post 201?

The Middle Zone

Like many cities througout the country in close proximity, Cincinnati, OH and Dayton, OH have begun to bleed together at their middle.

The Middle Zone (MZ) is being developed at ever increasing rates. In *Accumulate, Curate*, the MZ accepts the layout of cul-de-sacs and winding roads to focus on architecture for objects. The MZ bulges with only residential districts, requiring new levels of consumer to consumer transactions, but because the MZ is between cities, there is direct access to large scale production and mass manufacturing.

Bradley Cooper

accumulated push an egocentric higher and higher from the smallest of points.

A Piler — When finished with an object, the object is dropped in place. A Piler's memory is marked with objects, and a Piler spends fewer minutes finding an object than most others spend putting an object in its place.

An Indulgent 5 -Year-Old — Cake is supposed to be eaten. For true indulgence, birthday cake is consumed in an alternative manner whenever desired; the indulger grows younger and older in an instant.

A Knoller — If everything is being used, everything is out and in play. Like objects are grouped in containment. A Knoller always aligns objects perpendicular to three planes, as containers shear past each other in fluidity.

A Curatorial Hoarder — Daily additions and subtractions are reflected in the house. A Curatorial Hoarder is a ritualistic resident in a bastardized labyrinth. Everything can find a home with a Curatorial Hoarder, but if the house expands too much, the house chokes a Curatorial Hoarder inside.

An Ejector — Accumulation ensues only for the excitement of ejection. Three...Two...One... objects disperse to houses' horizons; accumulation is for launching.

A Top Ten Lister — Ten objects are perpetually replaced as newer objects' dominion in the house and a Lister's top ten grows without changing the objects.

A Nourisher — No object is greater than water; it provides nutrients and the structure for another structure to grow. Over time, a collected hydroponic system gives life to plants that grow bent, spliced, fused, tangled, and sculpted. Care and memory are paramount. If an object is forgotten, perpetual growth and change will consume it.

A Winged Family — There is no flying, no soaring. Each member has a personal wing for increasingly personal objects. The farther one is from the collective objects, the closer one becomes to others' personal objects.

A Jack Of All Scrap — Nothing is ever too small. Objects to a Jack are valued for their material qualities, in the smallest sense, from components to atoms or genes. A Jack only inhabits already built structures. Reconfigured objects strip down to components and reconfigure to suit a Jack's needs

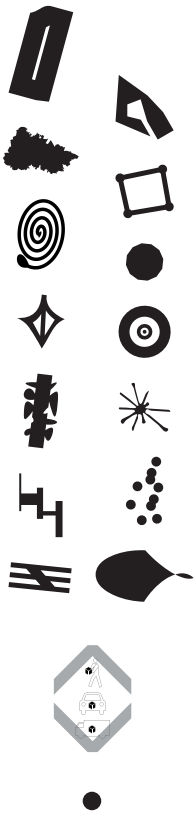
A Gravity Lover — Platforms raise and lower with weight. The more objects accumulated, the gravity forces the house to expand. As objects are removed, gravity is defied.

A Minimalist — Objects are seemingly rejected, but a Minimalist has a false front for extreme proportions of accumulation. A rolling floor maneuvers around the single surface to create constant alteration, maximum consumption in

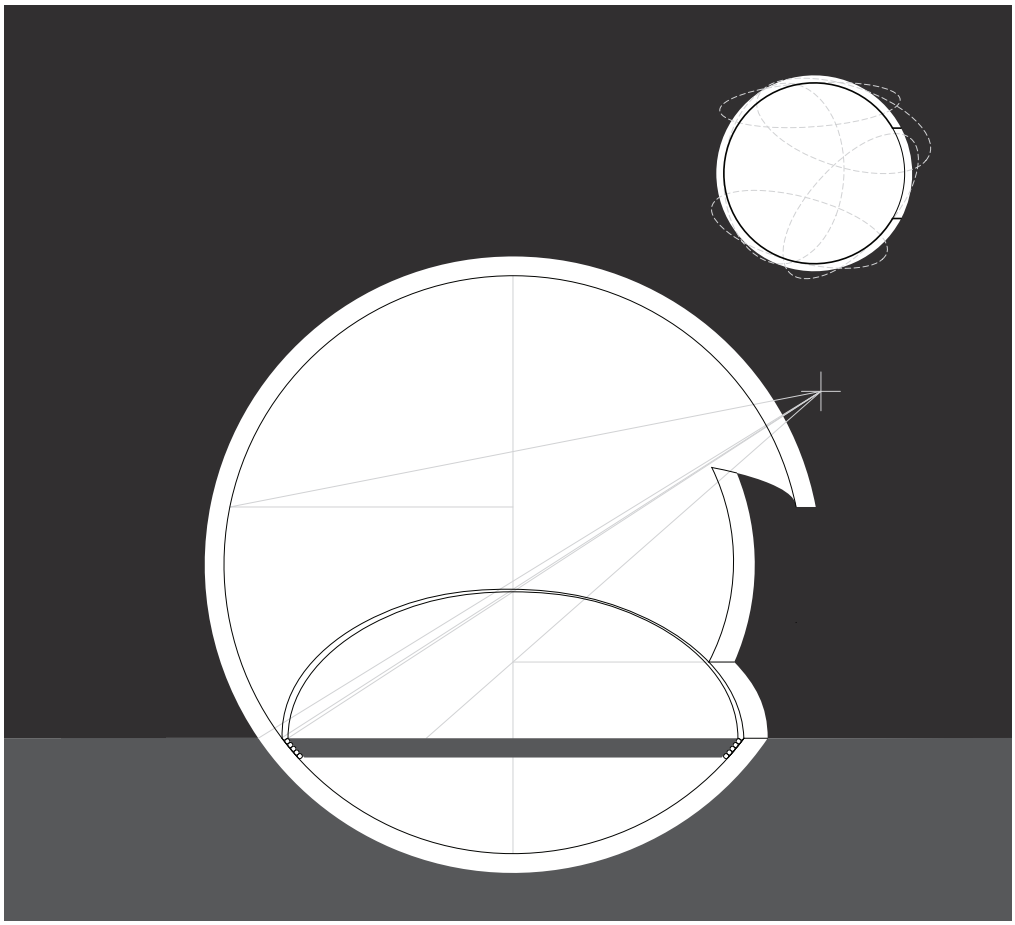
Neighborhoods: MZ Characters

These various prototypes are designed and developed for the infinite ways that people interact with objects. There is a Headquarters (HQ) for everyone, and each person may have other houses in his or her network. The HQ is where you sleep, but your home is every where your stuff is. New neighborhoods are developed, and HQs infiltrate existing neighborhoods as more objects are rapidly accumulated.

Neighborhood plans whose numbers represent a plot of land, and HQ plans designate a characteristic interaction with objects. These typical interactions yield infinite results in their realization.

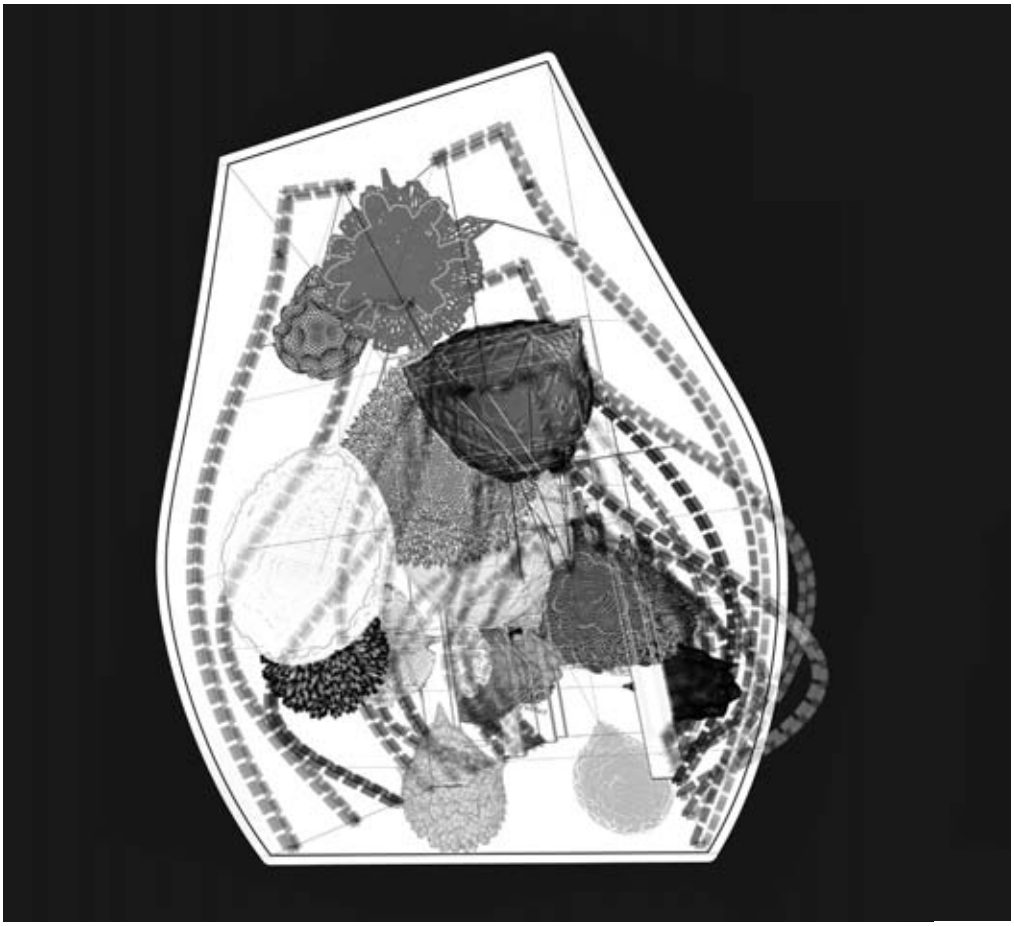


A Minimalist's HQ and other homes



A Minimalist

Objects are seemingly rejected, but a Minimalist has a false front for extreme proportions of accumulation. A rolling floor maneuvers around the single surface to create constant alteration, maximum consumption in minimal space.
A flat surface conceals secret possessions below.
After a gracious gift-giving purge, a Minimalist as a new creditor has homes everywhere.



A Curatorial Hoarder's HQ and other homes

A Curatorial Hoarder

A Curatorial Hoarder's HQ follows the plan of a bastardized labyrinth. Sacks at the beginning of the home hold that which the CH values least. These objects are grouped together; the sum becomes greater than the individual unit. The objects push on the sacks, revealing the forms of the sacks' contents.

The sacks weigh the HQ down and require constant attention, preventing literal hoarding.

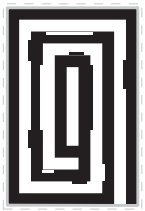
A CH's interaction with the HQ allows the structure to be cinched and pulled up. Although the curatorial hoarder's HQ is primary, there is always a need for proximal access to reserves just off site.

A Curatorial Hoarder's HQ's In Flux

A Curatorial Hoarder is a ritualistic resident in this bastardized labyrinth. With a daily addition to a curatorial hoarder's HQ, the home may expand and contract in numerous places, never choking the dweller in, for it would be impossible to then actively accumulate. Shifts in value alter the HQ's arrangement and shape.

Final Section

The deepest interior of a Curatorial Hoarder's HQ is the home for CH's most valued possessions. These objects have a multiplicity of meaning. A Curatorial Hoarder values these objects to such a degree that the CH remakes the object. Only its image is visible in the HQ. The remaking becomes a physical ritual, duplicating the CH's image of the object and creating an original object in the process. The clay mold of the cast is preserved with the object as the most valued of all three possessions.

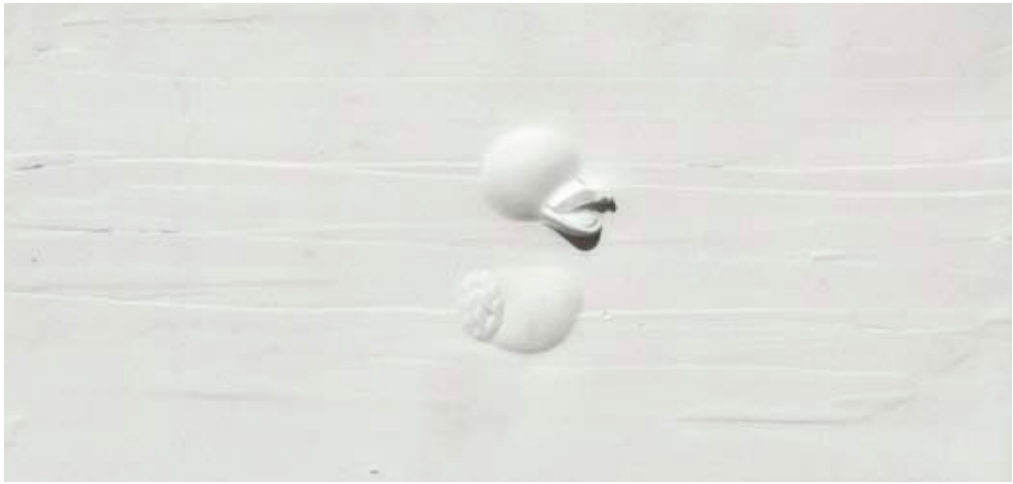


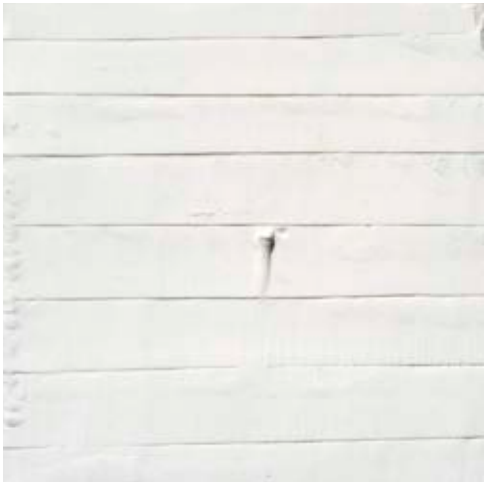
Expansion beyond perimeter prohibited.

Expansion beyond centerline prohibited.

Proximal expansion can choke resident.

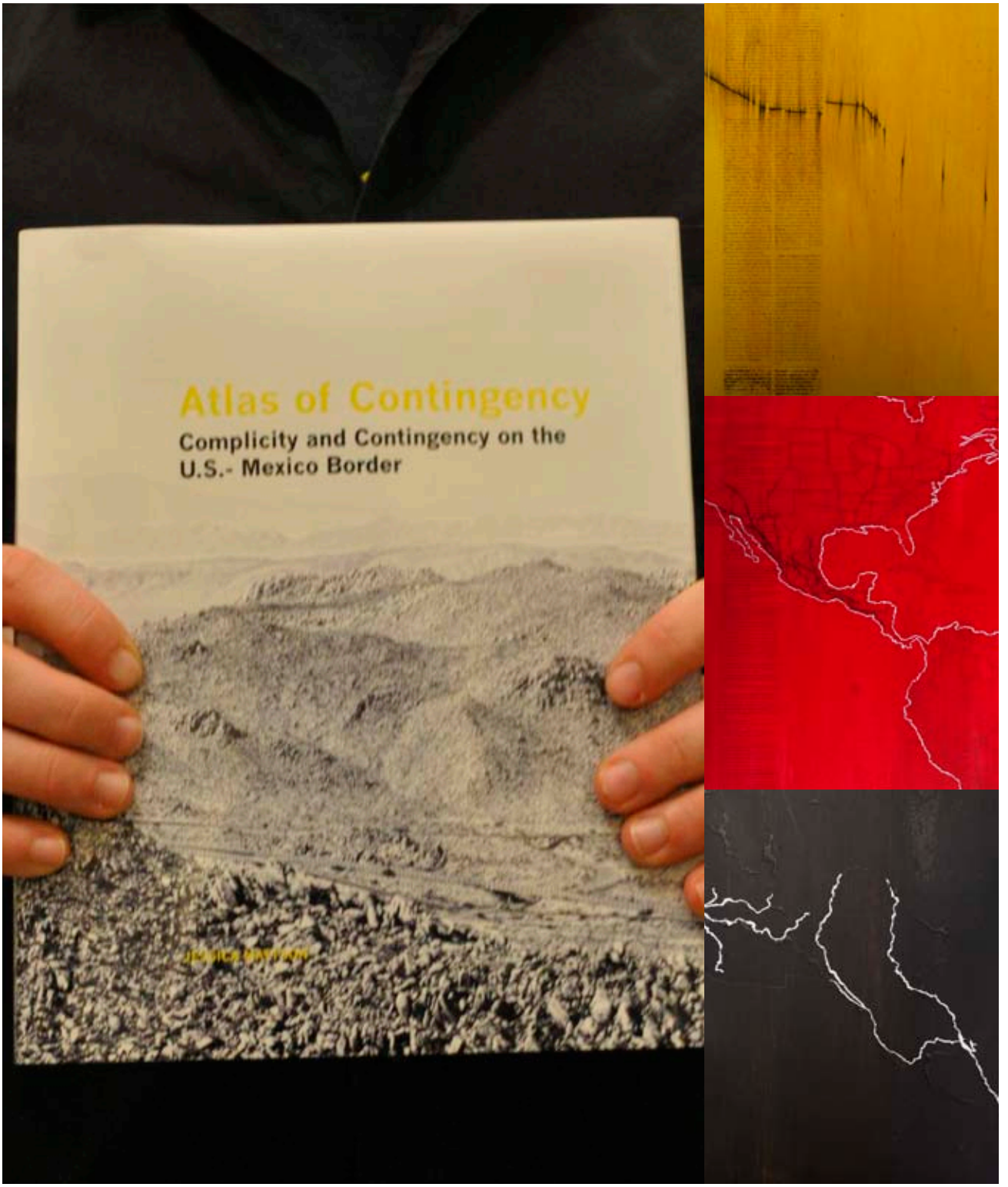
Curatorial Hoarders's HQ





Clockwise from top left: Airplane, Mouth Guard, Screwdriver, Wax Heart, Skittle s, and Easy Button

Opposite:
Rubber duck


Atlas of Contingency
Complicity and Contingency on the
U.S.- Mexico Border

Bordering Lines

Complicity and Contingency on the U.S.–Mexico Border

Jessica Timmer | Thesis Advisors: Kathy Velikov, Geoffrey Thün, and Cathlyn Newell

The Atlas Of Contingency

The *Atlas of Contingency* investigates the architectural context and significance of the U.S.–Mexico border region. The project aims to define the border not as a mere line in the sand but rather as a flexible territory encompassing various agencies and constituencies. Through understanding the tactics of surveillance and navigation, the *Atlas of Contingency* produces a spatial framework that reveals how overt instruments of control and seemingly mundane structures are pregnant with intense political meaning.

In the case of the U.S.–Mexico border, social, political, and spatial problems are layered in a complex network of actors and agencies. Designers selectively choose what they wish to address: the wall, the migrant, the invasion. Architects imagine what the wall could become: a wildlife wall, a burrito wall, a bike path, a volleyball court, a lending library, a confessional, a solar farm, a water treatment plant. These satirical design propositions are displaced from the reality of border region circumstances and highlight the architecture profession's desire to arrive at complementary views rather than to spark conflict. Where is the impulse to express a view that may be unsettling or provocative?

Designers are not expressly positioned to address the world's problems; however, as Giancarlo De Carlo states, "The idea that architecture is able to change society is out of date; but I continue to believe that architecture can produce concrete material stimuli that can lead to a change of this sort. It can provoke situations."

The Border

If borders are the demarcations of reality, then breaking them is the precondition of progress. In order to understand the implications of a border, one must first understand its linguistic and societal roots. The term frontier originated from the military to describe a defined area where two enemies faced one another. The term border, denoting a boundary, a narrow zone of demarcation, or a line of delimitation, is the narrowest of terms in describing the concept of bounded space. Borders are more than instruments of state policy or indicators of jurisdiction or political authority; they are markers of identity. A border unifies a group of people and establishes a political and social identity based on locality, social class, language, ethnicity, and religion. The border acts as both a practical and symbolic threshold.

Opposite left:
The *Atlas of Contingency*

Opposite right, from top to bottom:
Fences, Migrant Journeys, and Rivers

The U.S.–Mexico border is the busiest international border in the world with over one million crossings daily. It is the ninth longest in the world and covers an area bigger than Spain or Sweden.

Each segment of the border is unique, and numerous operational challenges exist for patrol agents to gain access to and provide security for the border. U.S. Customs and Border Protection determines border fencing placement based on a complex risk and vulnerabilities assessment of illicit cross-border activity. The primary consideration is the operational needs of law enforcement. Secondarily, border patrol assessments based on current and historic illegal crossing patterns identify areas where physical fence construction is most effective. Many other factors are taken into account, such as cultural sites, engineering and cost assessments, stakeholder input, migration patterns, terrain, floodplains, waterways, and other important geographical and environmental concerns. If fencing is chosen as a solution, the type and design of fence is determined through a consideration of the priority of the homeland security mission versus the needs of those who live in border communities.

Tactical Operations

There are three levels of military logics: strategy, operational mobility, and tactical area of responsibility. Strategy refers to a well developed, large-scale plan or method that involves comprehensive goals. It is the institutional practice that sets the conventions and boundaries of the field. Tactics refer to on-the-ground decision making processes that secure both short- and long-term objectives set out by the strategy. Operating and adapting within the gaps of discourse, tactics manifest ideas through new paths of thought. "The mode of tactics strives for a type of indetermination. Indetermination is not a scientific (ecological) metaphor for a lack of design. The potential of indeterminacy requires volatile initial conditions, catalytic provocations as much to do with resisting certain futures as enabling others."[1] While the strategist is physically and mentally removed from a situation, the tactician is completely immersed in it, working on the ground and designing and testing ideas with immediacy. The tactician acknowledges the flaws of the strategy and responds with his hands, molding space as needed.

Fog of War

Fog is a stable cloud deck that forms when a cool air mass is trapped under a warm air mass. Smoke producers and fog generators can produce tactical and military effects by visibly masking objects on both ground or water from the air. In order to accomplish this result, the fog must sufficiently conceal the object for the required period of time and at the same time permit the movement of troops or other persons within its protection.

1. C.J. Macquarrie on Lewis, Tsurumaki, Lewis, *Pamphlet Architecture: Situation Normal . . .* (Princeton Architectural Press, 1998).


FILA

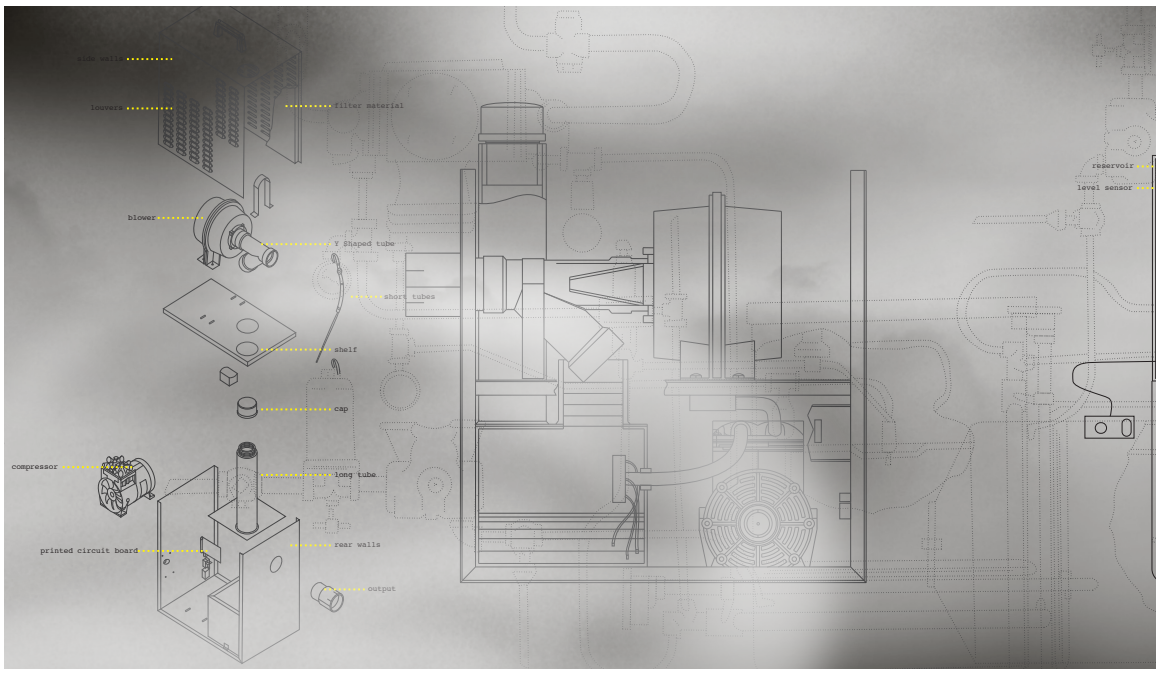
Trailing

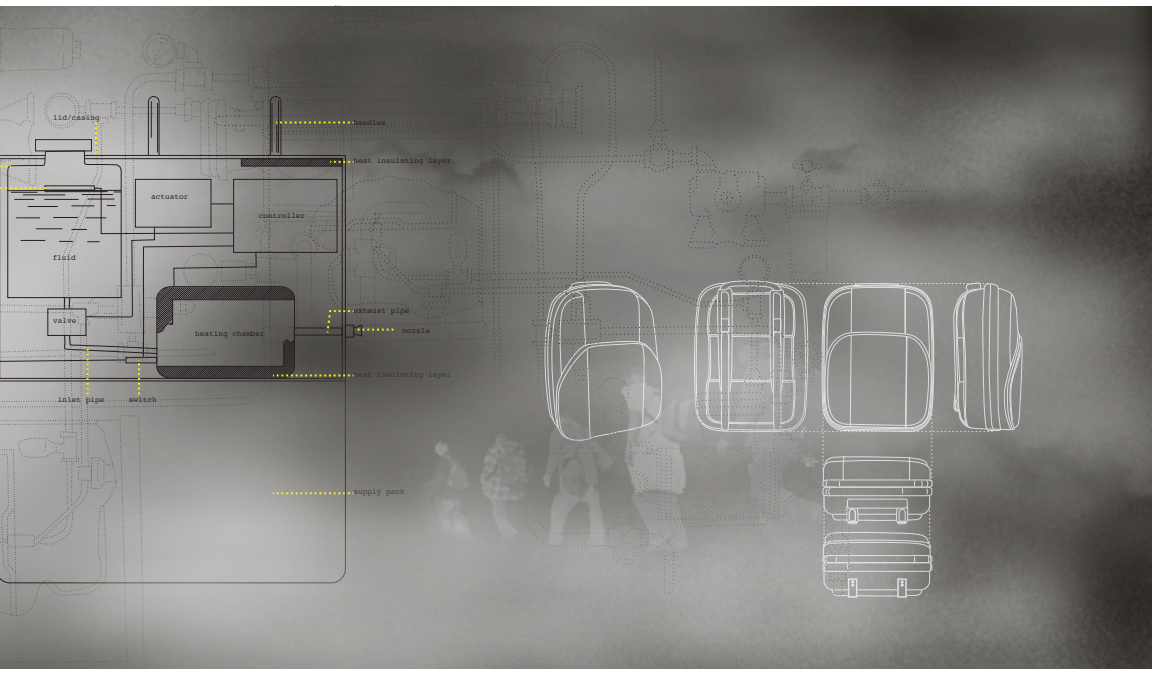
Through a referral process from friends and family and for a typical fee of $150, migrants contact *vaquetones*, who are individuals connected to smuggling organizations. *Patrones*, who control the business of smuggling through its safe houses, hotels, and vehicles, dispatch a representative to the migrant's home once a referral has been made.

The smuggling organization waits until they can gather a group of migrants large enough to fill a bus (approximately sixty people) for departure. The bus travels nonstop for thirty or more hours until it reaches a border town. The migrants then remain in a hotel until the smugglers decide it is an opportune time to cross.

Chequadores monitor the checkpoints and surveillance and signal when it is safe to cross. *Cuidanderos* are typically teenagers who are hired to distract the border patrol by throwing rocks, activating sensors, etcetera. The migrants then begin an eighteen- to thirty-hour hike in the remote desert area to cross the border. They are led by coyotes who are paid $250 to $400 for each person they cross.

At a meeting point in the desert, migrants leave all their belongings behind and pack into a vehicle. They are driven to a safe house in a larger city where they shower and change clothes to blend in. Final payment arrangements must be met before they can leave the house.





Above:
Border patrol officer

Left:
Diagram and detail of Fog Apparatus

This easily transportable, artificial weather apparatus produces flash fog, a fog that forms suddenly and dissipates rapidly. The self-contained unit operates independently of fixed power sources to generate fog effects in an efficient and controllable manner.


Tucson
Tohono O'odham Nation
Migrant Trails of
Southern Arizona
Nogales
Heroica
Nogales


[candles]
[clothing, backpacks, beverage containers]

The Migrants Guide and Map

I had the privilege of working with the humanitarian aid organization *No More Deaths* in the summer of 2010. Stationed at their Byrd Camp in Arivaca, we slept in the desert and spent the days hiking and tracking migrant trails. We placed water and migrant aid packs at strategic locations along these trails in an effort to decrease deaths occurring from the intense summer heat in the desolate Sonoran Desert. Based on aging migrant artifacts left behind in the desert, we tracked trails and recorded traveling group activities. The map and guide are artifacts produced for the migrants to aid in their crossing and relieve them of their reliance on smuggling organizations.

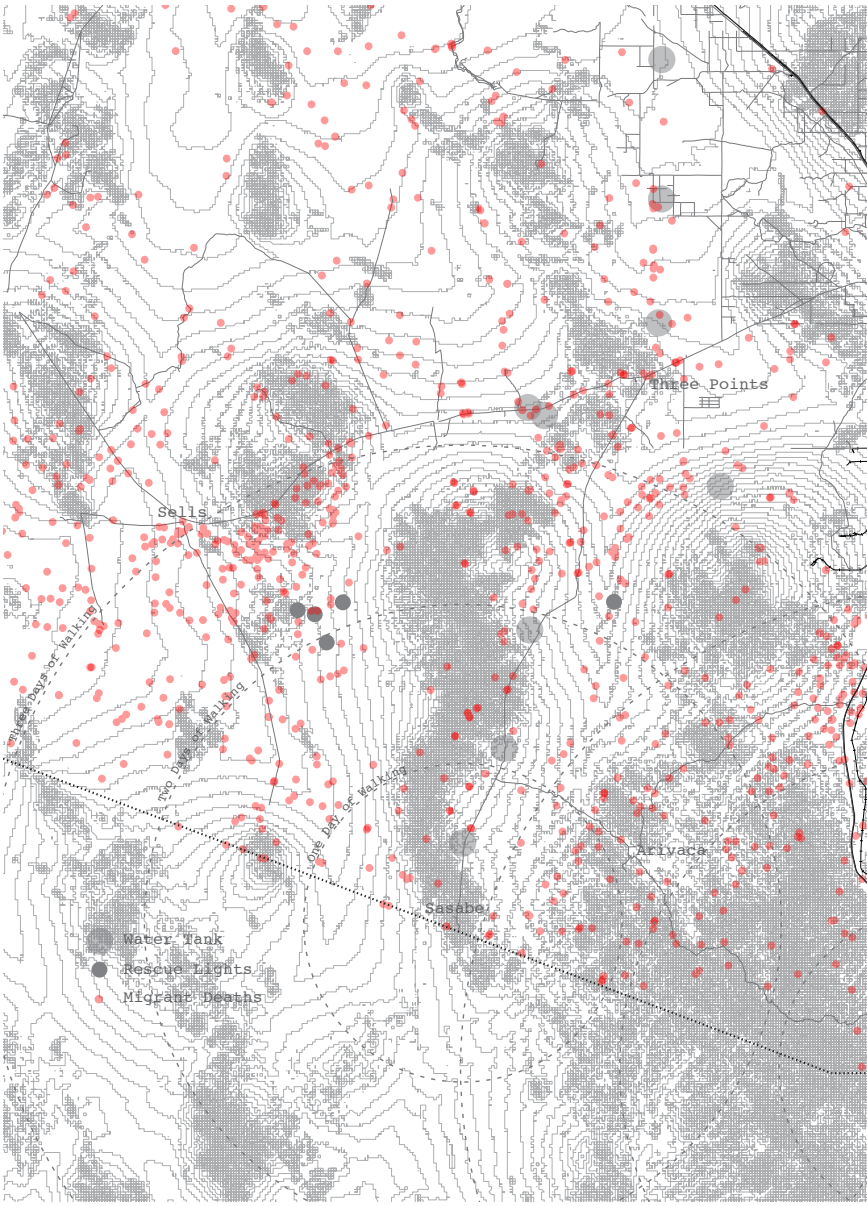
Archetypes

Doing terrible things in an organized and systematic way rests on the normalization and social acceptance of inhumane acts. The concept of the banality of evil came into prominence following the publication of Hannah Arendt's 1963 publication that examined political and economic architectural typologies constructed along the U.S.–Mexico border. Safe houses, border businesses, migrant shelters, and ports of entry are just a few of these wide ranging archetypes. For example, hotels on the U.S. side of the border have become staging areas for Americans awaiting participation in affordable Mexican health care services. Hotels on the Mexican side are staging grounds for migrants waiting to cross. Also, the American Red Cross maintains temporary aid stations in Mexican border towns to provide care for migrants that have sustained injuries during attempted crossings. These architectural archetypes could hybridize into a new typology that acts as a staging ground for migration: an architecture of shelter, aid, and the dispersal of camouflage and information.

Opposite top:
Map of southern Arizona's migrant trials

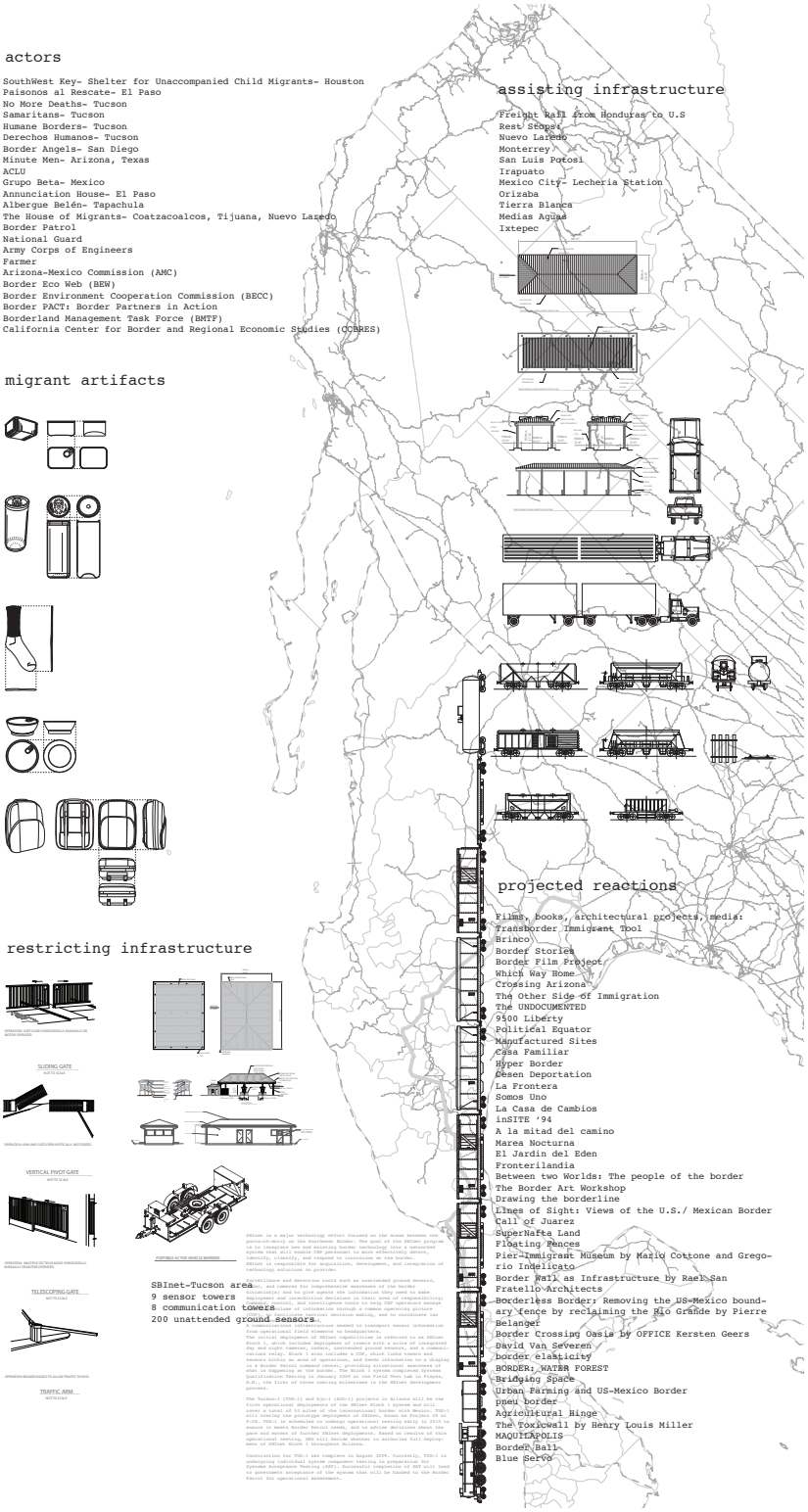
Opposite bottom:
Migrant artifacts

Below:
Map of migrant deaths in Arizona



Left:
Border network diagram

Right:
Border anatomy blanket




Double Layer Fence
18 foot Mat
18 foot Steel Beam
Old Fence
New Fence
Chain Link
16 foot floating Boom
13 foot Mesh
Vehicle Barrier

Established in 1994, the Saarinen/Swanson Essay Competition writing fund at Taubman College of Architecture and Urban Planning encourages strong writing as a medium to foster critical thinking and exposition among future professionals in architecture and planning. The competition seeks 1000–1500 word essays addressing contemporary critical discourse in design and/or urbanism.

2011 Winners in Architecture

Julie Chau

Michael P. McCulloch

2011 Winners in Urban Planning

Jacob Anderson

Scott Kalafatis

Saarinen/Swanson Essay Competition Winners in Urban Planning are published in Agora, a student publication from the Urban and Regional Planning, Urban Design, and Real Estate Certificate Programs.

Saarinen/Swanson Essay Competition

Defining Architecture

Discovering Possibility

Julie Chau, Bachelor of Science in Architecture

When envisioning architecture students and architecture as a profession, many picture crippling coffee addictions, beautiful basswood models, and Ted Mosby. Although reasonable preconceptions, architecture as a field of study is much more than that. This discrepancy may be due to the elevated level of engagement that architecture requires. Architecture is not merely drawing floor plans, pouring foundations, rendering, or even making a building. It encompasses all of these acts and more. Architecture school is about a new way of thinking and problem solving: designing. It requires a new language, with a vocabulary based on representation and grammar derived from history. As a student, you learn about the different design approaches of various architects. You discuss ideas, doubts, and strategies with peers and professors. And as a student, you must constantly absorb the work and ideas of others, yet formulate your own opinions about what architecture means. There is no one answer. So when a friend asks, what does an architect actually do; they should prepare for a long discussion.

> *Our absence of manifestos, or absence of being able to claim a degree of 'newness', is dangerous. If we cannot produce new theory—and it is undeniably not an easy task—we could at least find new words.*
> —Rem Koolhaas

Defining an Architecture: Fantastical Feasibility

When approaching the design process and analyzing an architecture project, two issues that I constantly confront are fantasticality and feasibility. These issues seem to be at odds, and one always seems to take precedence over the other. Can these two qualities co-exist, and how can we as architects consider these issues?

The word "fantastical" brings about images of Rob Gonsalves and René Magritte paintings, where reality is skewed and one is forced to question everyday perceptions. Fantasticality suggests the possibility of utopia. Its limitless reach allows for multiple definitions. One version can be described as a world where buildings, like people, are constantly in flux and can change to meet new programs. Cedric Price's Potteries *Think Belt and The Fun Palace* are two examples of utopian projects that remain unrealized. Both projects are designed around the understanding that the needs and desires of a population change, and both projects try to utilize technology and ingenuity to make an idealistic project real.

A flaw in this speculative process is the physical fabrication of such spaces. A beautiful and fantastical idea remains solely a drawing—a representation—when it cannot be physically manifested and introduced to the public. This is when the prospect of feasibility comes into importance. Once, during

an urban planning course discussion, the question of what urban planning as a profession entails came up. One response: dealing with what architects make. This is an issue that should be eradicated. Architects must address every aspect of design and fabrication, and no one process should be dominant. Functioning buildings that encourage life processes should not be a hopeful outcome but a purposeful goal of architects. How people inhabit a space should not be post-rationalized to accommodate a space; a building should accommodate the needs of the users.

Team 10, a group of post-modern architects, based their philosophy of a utopia of the present on the ability of the architect to build towards "society's realization of itself."[1] Their work envisioned possibility and sought to make it tangible. Through the mat building, they conceptualized a formless and indeterminate architecture, open to the autonomous nature of life. I believe in this approach to designing spaces for our era. The twenty-first century lifestyle is that of a cosmopolite. Technology has enabled a nomadic lifestyle, and architecture of our times should seek to accommodate this shift. Similar to Cedric Price's ideals of creating a world in flux for a population in flux, architects of today must seek to engage a public that will not remain static. Rising issues with such architecture, notably explored within the theory of creative destruction, is proof that the architecture of yesterday may not be the architecture of today. Buildings that functioned at one point must now be demolished, only a few years later, or they may be repurposed, restored, and reconceptualized to accommodate the needs of today.

Many people would agree with Karel Teige that "any 'ideal proposal' would be [one that is] technically and economically capable of realization."[2] A building must function beyond feasibility and as more than a programmatic shell. A building can inspire its inhabitants, encourage interactions and activities, and function in pursuing the architect's desired goals. Architecture can do all of these things, so it is up to the designer to formulate their own ideas about what is important and to make it tangible and available to the public. In school, there is sometimes a hesitance when students narrate their projects; a hesitance as though there is a right or wrong way to describe an approach. It is not wrong to think about building construction feasibility, nor is it wrong to be attached to a surrealistic narrative of a utopian world. Developing a purpose in design is vital in defining architecture. However, architecture remains a public field of endeavor, and all work can and will affect the public domain. In this way, architects have a responsibility to merge fantastical and feasible possibility.

As a collective, society is constantly in motion. So students entering the field of architecture should understand the profession with a holistic approach. An architect does not only design a building. The past, present, and future of architecture always remains as inherited considerations in design. It is up to an individual to define his or her own ideals, unencumbered by what may be seen as ludicrously fantastical ideas or banally feasible structures. Architects envision a different world and are responsible for making it real—a piece of architectural history. Envisioning and making are not two different acts, but must co-exist as possibility in the architectural field.

1. Alison Smithson, ed., *Team 10 Primer*, rev. ed. (Cambridge, MA: MIT Press, 1974).

2. Karel Teige, *The Minimum Dwelling*, trans. Eric Dluhosch (London and Cambridge, MA: MIT Press, 2002), 12. Originally published as *Nejmensi byt* (Prague: Vaclav Petr, 1932).

Aesthetic of Care and the Empty City

Michael P. McCulloch, Doctoral Candidate

Detroit's population is shrinking faster than ever according to the most recent census. The *New York Times* reported the 2010 population at just fewer than 714,000, a 25 percent decrease since 2000. Commentators interviewed for the story were disheartened by the news, and one described her experience of the city as that of a place "empty physically, empty of people, empty of ambition, drive."[1] John Gallagher's recent book *Reimagining Detroit*, published before the census news, is nonetheless well poised as a response to it through its project of reframing urban population loss. It argues that the city's future viability requires "unqualified acceptance of Detroit as a smaller but potentially better city."[2] It presents strategies for a city that, although less populous, offers a higher quality of life including urban agriculture, traffic calming, ecological restoration, and new, smaller business models. As a popular figure in local news he gives accessible articulation to ideas developed in academic and policy realms over the past decade,[3] extending their reach to new audiences. Because the book is so timely and so likely to influence discourse as the city comes to terms with its newly-confirmed smaller size, it must be assessed critically. Despite the merits of its many proposals, *Reimagining Detroit*'s perspective on vacant land from the chapter "Filling the Vacancy" should give us pause. This essay will argue that the impulse to fill Detroit's vacancy contains an aesthetic agenda fraught with unstated social ideals that must be considered in more reflective and contextualized ways. By comparing this present discourse with an urban reform movement of the past, the City Beautiful movement of the Progressive Era, the risks of "filling the vacancy" will be illustrated.

The Progressive Era in American urbanism (1890–1920) sought social and moral reforms to combat a crisis of rising urban poverty, vice and disorder as immigrant populations filled industrial cities. Jane Addams' famous Hull House of Chicago became a model institution for reform by providing education and recreation to these new arrivals. Housing reformer Jacob Riis used flash photography to expose the suffering of New York tenement-dwellers, prodding the nation's social conscience in 1890 with the book *How the Other Half Lives*.[4] The City Beautiful was American architecture's contribution to this larger middle class and professional project of reforming and uplifting poor urban dwellers.

The works of the City Beautiful were many and various, but one strain of the movement, aesthetic didacticism, is critical to understanding the

1. Katherine Seelye, "Detroit Census Confirms a Desertion Like No Other," *New York Times*, March 22, 2011.

2. John Gallagher, *Reimagining Detroit: Opportunities for Redefining an American City* (Detroit: Wayne State University Press, 2010) 2.

3. For example academic discourses, see G. Daskalakis, C. Waldheim, et al., *Stalking Detroit* (Barcelona: Actar, 2001); P. Oswalt, *Shrinking Cities* (Ostfildern-Ruit, Germany: Hatje Cantz, 2005); and the public policies of Jay Williams, Mayor of Youngstown, OH since 2005 and author of the introduction to *Reimagining Detroit*.

4. Jacob Riis, *How the Other Half Lives: Studies Among the Tenements of New York* (New York: Scribner, 1890).

problem of "filling vacancy" today. Two examples will illustrate the didactic mode. Chicago's World's Columbian exhibition of 1893 was constructed to celebrate Chicago's and America's culture and industrial innovations on a world stage, and it also became a test-case for classical aesthetics' power to shape behavior. Elite observers and the architect Daniel Burnham himself invested the fair's aesthetic with ideals such as dignity, culture, and lawfulness, traits that it might teach or engender in the mass of urban dwellers. Observing the vast crowds attending "Chicago Day" at the fair, one author commented that they "could not have been more deferential and observant of the decorum of place and occasion." Another, whose statement would later be quoted by Burnham himself, observed "how little policing people need when they are happy and contented."[5] These statements suggest a paternalistic belief that elite aesthetics had the power to shape the behavior of the working class and thereby reform the social ills of the industrial city. A similar perspective was brought to Detroit in the Progressive Era by landscape architect Frederick Law Olmsted, Jr.

Olmsted was hired to report on Detroit's parks and landscapes in 1915 as the city's government sought to increase Detroit's cultural prestige to match its economic prowess,[6] even as hundreds of thousands of immigrant and migrant laborers arrived seeking industrial work. The report praised the city's Grand Boulevard for its aesthetic success in all but one area. Where the broad, landscaped roadway passed near a working class neighborhood Olmsted observed, "There is not only an absence of shrubbery but an apparently hopeless yielding to the conditions." While "the personal standards of the people are apt to be lower there than in a 'high class' residence district," the city's responsibility was to redouble their efforts at the site "because the people there are doubly in need of such an example, for its educational value as for the direct pleasure which it may give them."[7] Here too elite aesthetics are believed to have reforming potential, and are proposed without acknowledgement of the social relations of inequality that created Detroit's or Chicago's slums of that time.

Edward Bennett, on the other hand, took limited steps in acknowledging the social context of his City Beautiful interventions. He conceived of the project as meeting residents' functional needs, though his park proposals ultimately took on classical aesthetic qualities. Bennett proposed new neighborhood park spaces as amenities for "the great public," urging his municipal clients to see that it was insufficient for Detroit to be only "an enjoyable city for the favored classes." Emphasizing health over appearance, Bennett argued, "If the factories for which we strive . . . are to have strong men and women working in them we must preserve the health of children today," through social spaces and playgrounds in neighborhoods that lack them.[8] While this still places design in a paternalistic position, Bennett's intervention was posed in acknowledgement of the inequities of the industrial city. Forgoing an aesthetic rationale it argues for greater equality, at least in a circumscribed sense, through equal access to neighborhood recreation spaces.

5. Kristen Schaffer, *Daniel H. Burnham: Visionary Architect and Planner* (New York: Rizzoli, 2003) 71, 211.

6. This is well illustrated in the plan commissioner's preface to E.H. Bennett's *Preliminary Plan of Detroit* (1915).

7. Frederick Law Olmsted, *Conditions in Detroit* (1915) 9, 19.

8. E. H. Bennett, *A Center of Arts and Letters* (1913) 8; and *Preliminary Plan of Detroit* (1915).

In juxtaposing the specific examples above a useful distinction emerges. Aesthetically didactic urban reform does not confront inequality; indeed it reinforces it by coding environments according to elite ideals such as orderliness and dignity, naturalizing the hierarchy between the shapers of aesthetics and the subjects of reform. Bennett's reform proposals acknowledge that the physical conditions of the city are constructed through social relations. It seeks to address their inequality through the broad provision of functional assets more so than through the teaching of better taste.

The desire to fill Detroit's emptiness today risks devolution into an aesthetic didacticism not unlike those in Burnham and Olmsted's statements if its aims and values are not held to greater scrutiny. Gallagher, for example, argues that un-maintained open land creates the dispiriting aspect of Detroit. Given proper care, though, the empty fields in Detroit could look a whole lot better. Get rid of the dumped tires and smashed liquor bottles, cut the grass, plant sunflowers, raise vegetables, install some art objects, and pretty soon the landscape doesn't look bleak at all. It looks hopeful, as if somebody cares.[9]

Further he suggests that crime can be reduced, nearby property better maintained, and community cohesion engendered by establishing this mowed and cared-for aesthetic of vacant property.[10] Such an aesthetic of care is not innocent of ideology. It codes the tended landscape with the normative aesthetic codes of suburban real estate, where well-mowed grass is laden with notions of proud self-sufficiency and higher status, while reinforcing the associations of the untended landscape with apathy and vice. Such fraught aesthetic codes must be critically examined in Detroit's discourse on vacant land, and set in the context of history and social relations, such as those of race-based discrimination in housing and employment[11] that have so defined and divided the industrial metropolis. Reinventing Detroit takes a consciously solutions-oriented approach to vacancy, stating up front that it chooses "neither to question nor to quibble about how Detroit got where it is today."[12] But as analysis of the words of past reformers suggests, aesthetic interventions can be a mask that hide the bitterness of historically constructed relations. The city's vacant land must not be domesticated into a practical and ahistorical problem of aesthetic reform, entwined as it is with the very structure of our metropolitan society and its future.

9. John Gallagher, *Reimagining Detroit*, 12.

10. Ibid, 97-117.

11. On postwar racial inequality's role in shaping contemporary Detroit see Thomas Sugrue, *The Origins of the Urban Crisis: Race and Inequality in Post-War Detroit*, (Princeton University Press, 1998); and Reynolds Farley, Sheldon Danziger, and Harry J. Holzer, *Detroit Divided* (New York: Russell Sage Foundation, 2000).

12. John Gallagher, *Reimagining Detroit*, 1.

Below:
The Pennsylvania Horticultural Society has tended vacant land through its Philadelphia Green initiative since 2003. The project is referenced as a precedent for "Filling the Vacancy" in *Reimagining Detroit*. Image courtesy of Jamie Gaffke.

The University of Michigan, Taubman College of Architecture and Urban Planning awards the undergraduate Wallenberg Scholarships each year in honor of Raul Wallenberg (B.S. Architecture '35). Wallenberg is credited with single-handedly rescuing over 100,000 Jews from Nazi persecution in Budapest, Hungary, during World War II. The traveling scholarship, established by the Bernard L. Maas Foundation in 1986, acts as a reminder of Wallenberg's courage and humanitarianism and is aimed at reflecting his ideals. Awards funded by the Raoul Wallenberg Endowment are offered to undergraduates in the form of a stipend for international travel to a country of the student's choosing.

2011 Wallenberg Studio Awards

Simon Rolka

Ian Sinclair

Grant Weaver

Honorable Mention

Timothy Harmon

Jacqueline Kow

Wallenberg

Suspended Acts of Inversion

Grant Weaver | Studio Critic: Cathlyn Newell

In the aftermath of economic downturns, abandoned buildings litter the urban fabric of once-prosperous cities. Although these structures contain atmospheres abundant with material and spatial possibilities, they lie dormant. Their muted light, dense air, and festering materials are left in an unprescribed state of transition. These spaces are being ignored in favor of a recast pristine and gentrified image of the city. Resistance is found in the strategic reactivation of both the materials and objects within these abandoned atmospheres.

Such obsolete spaces now consume a 43-acre parcel in Detroit formerly known as the Packard Plant. Occupants like graffiti artists have begun to reclaim the space through acts of subversion, but few engage the latent material and spatial conditions that exist within the deserted environment.

This proposal engages the site through various acts of spatial inversion, seeking to reclaim and redefine space within the context of an abandoned atmosphere. Each act occurs as a sequential installation within the site. Preconditioned roles of objects and materials are reconceived and inverted. By subverting the state of distraction in which these spaces are conventionally experienced, the project engages the public in a dialogue of use.

(re)Cast

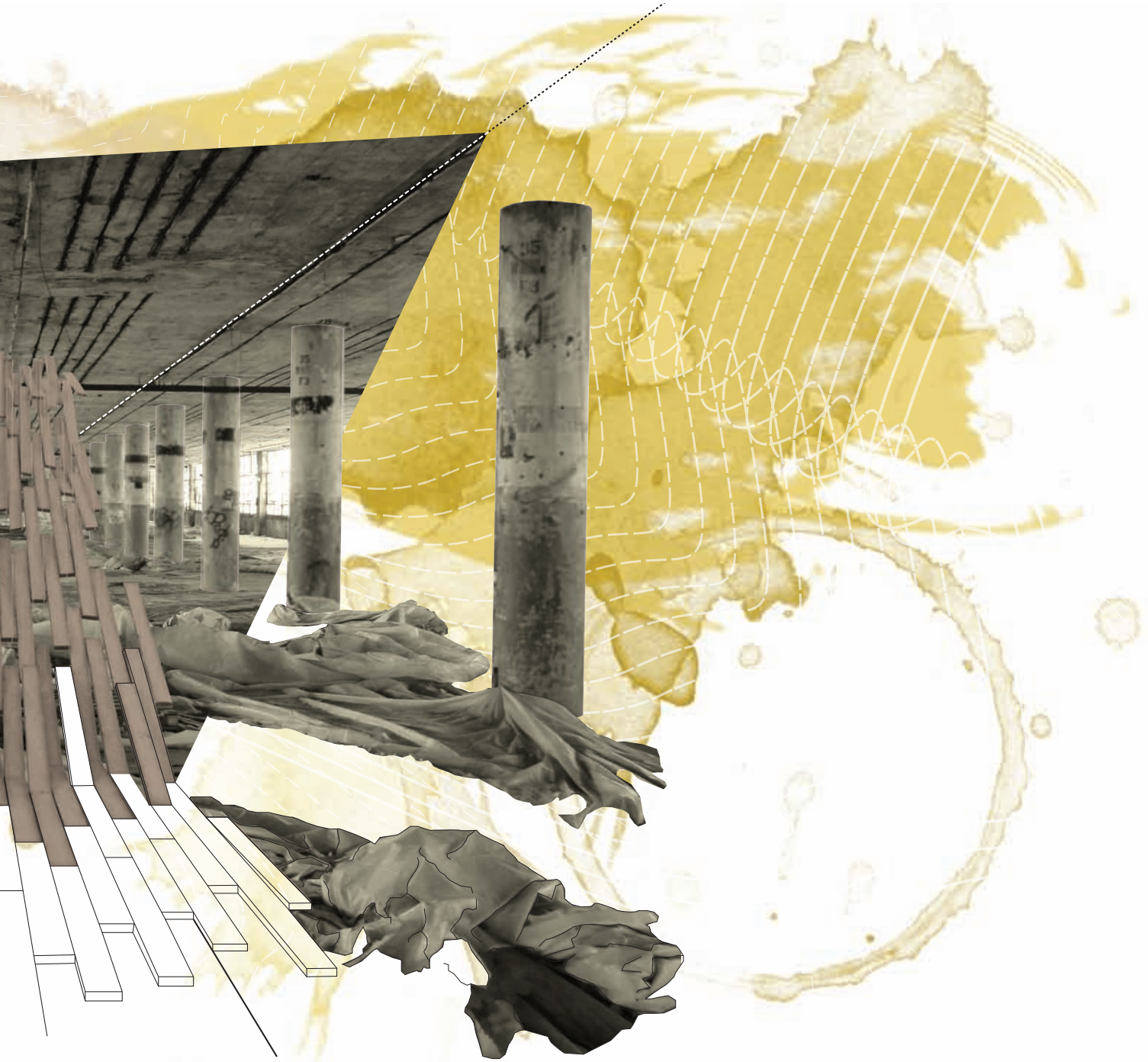
Fordist notions of space planning have left the Packard Plant scattered with defunct industrial forms. The site, relegated to a dumping ground for refuse, is now defined not only by the constructed form, but by traces of domestic and industrial products littered throughout the landscape. The architectural construct is unable to void itself of the parasitic products now infused within its form.

Experiences of the site are photographed, edited, and distorted through monochromatic collage. Disconnection from the physical site frees the object from its habitual place, allowing it to be reconceived within the context of new atmospheres. Boundaries are negated, leading to the blurring of form between object and space. Disoriented, the viewer is forced to consider new means of occupation.

Opposite:
43 Acre Packard Plant

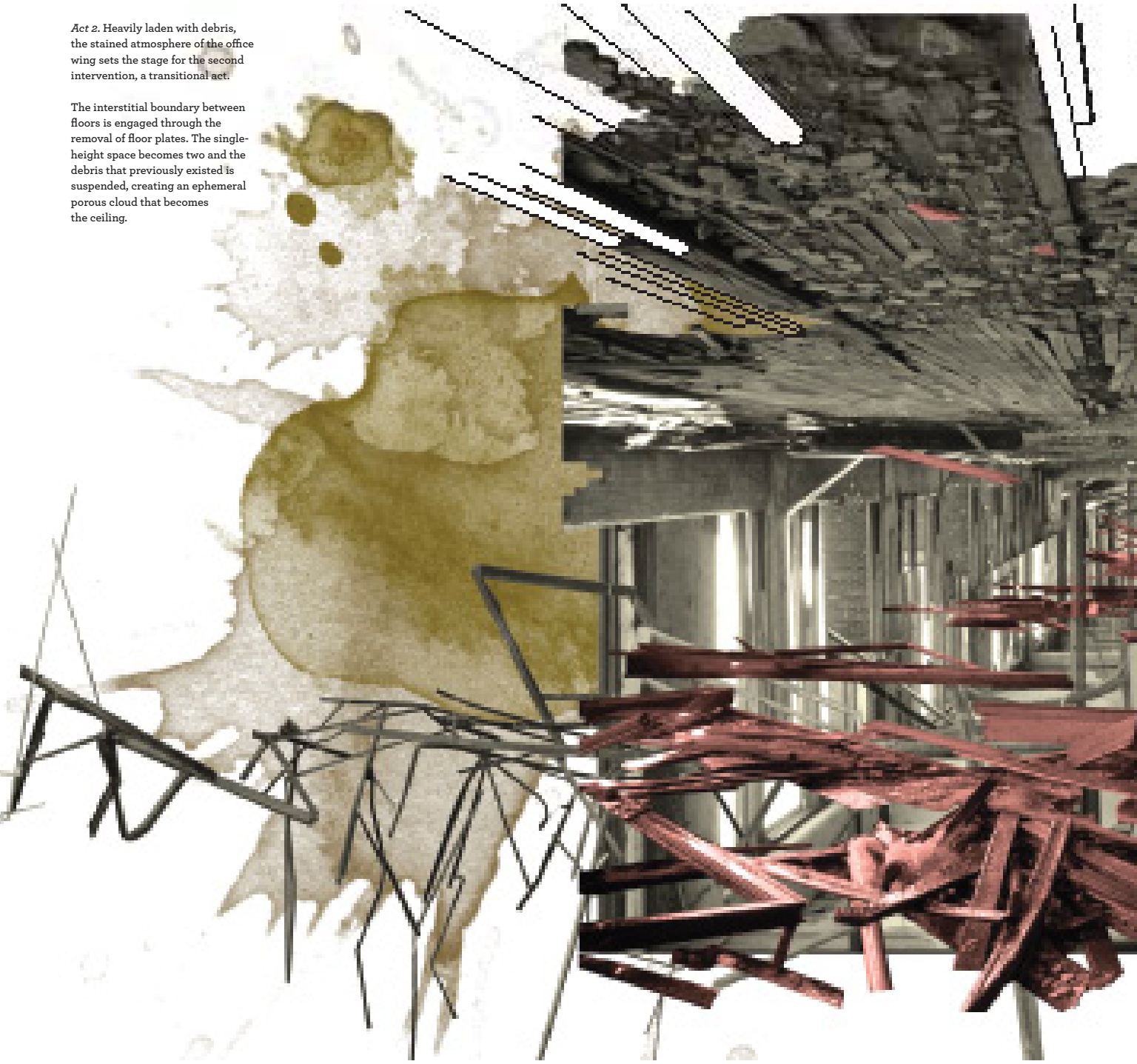
Act 1. Expansive corridors of abandoned industrial spaces line the landscape in unrelenting monotony. Rows of concrete columns, interspersed with the oil-stained planks of the industrial floor, stage perspectives of unceasing depth. Formerly infused with energy but now devoid of activity, this monotonous zone is the siting of the first act.

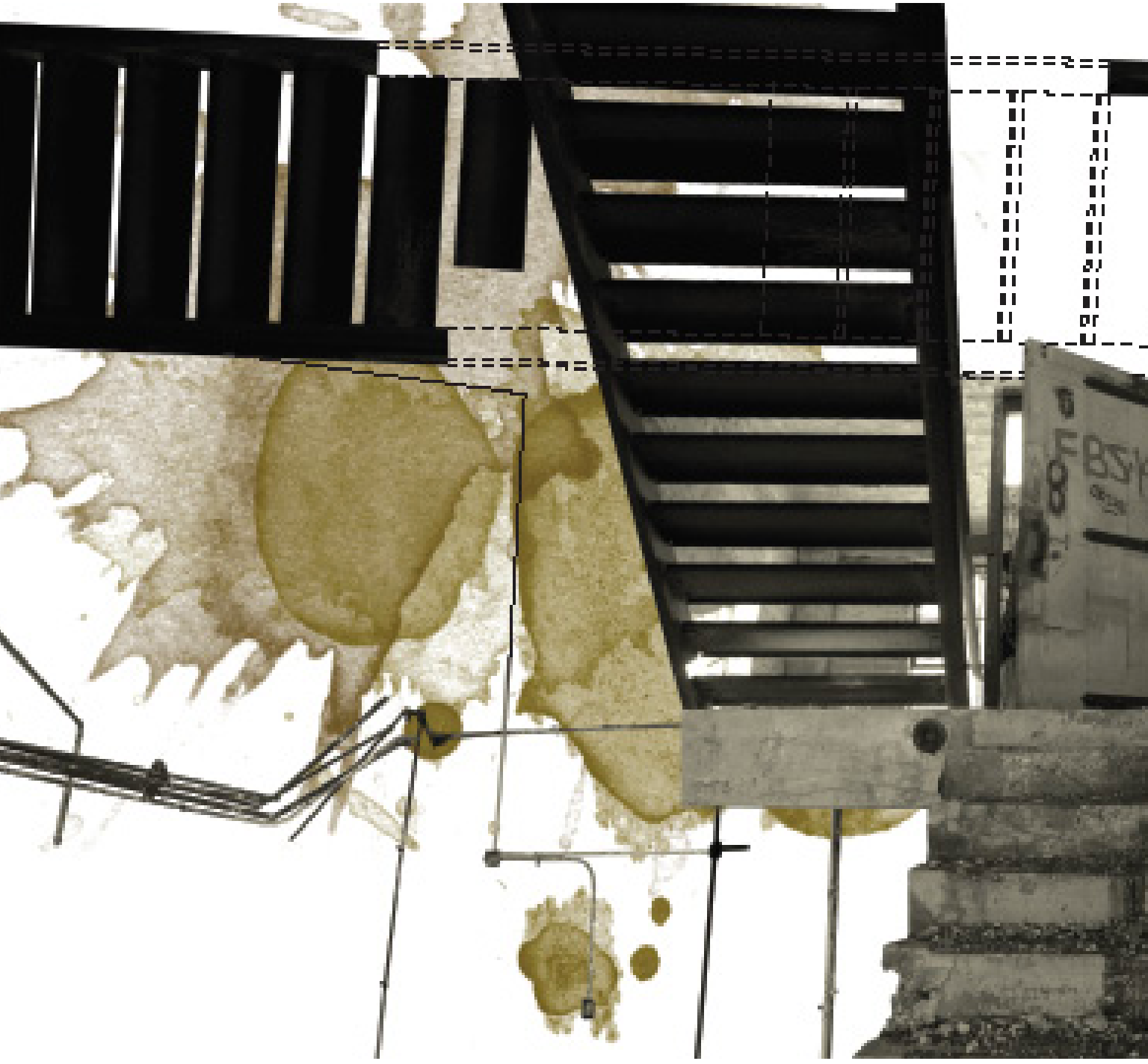
This act imagines an intense influx of energy in the space, utilizing and activating the existing materials. The floor planks of the factory space are peeled up, their role transformed as floor morphs into ceiling. The embodied energy of the space and materials is amplified while defining new means of occupation within a frozen moment of flux.



Act 2. Heavily laden with debris, the stained atmosphere of the office wing sets the stage for the second intervention, a transitional act.

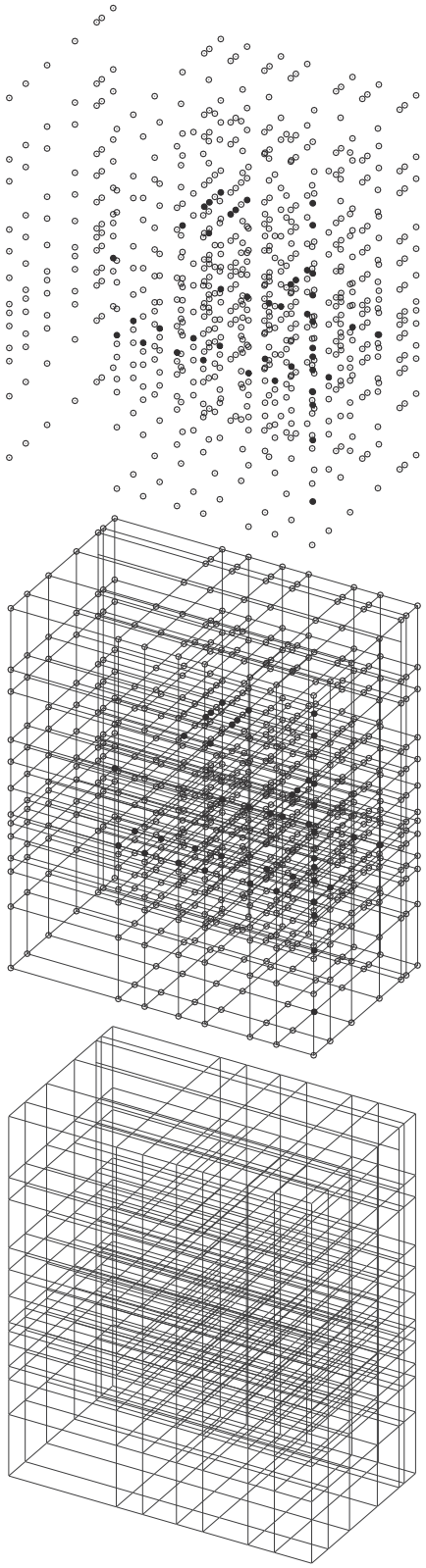
The interstitial boundary between floors is engaged through the removal of floor plates. The single-height space becomes two and the debris that previously existed is suspended, creating an ephemeral porous cloud that becomes the ceiling.



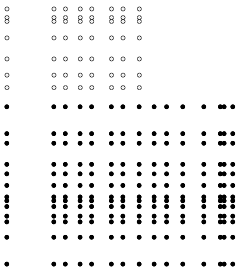


Act 3. A narrow stairway shaft is sited as the third act. Quiescent spaces existing on either side of the stairway are revealed through the removal of both flanking walls. The physical space is inverted as the stairway transforms, becoming both ceiling and wall. Vertical ascent juxtaposes the physical with the visual.

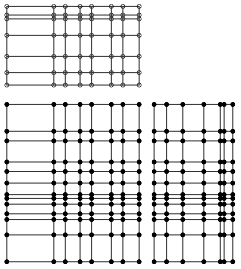
Insidious in nature, future acts are deployed throughout the city. In an orchestrated performance, the once derelict and forgotten spaces of the city's shadows are transformed into spaces of curiosity and contemplation.



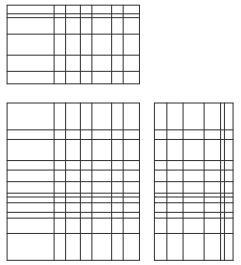
Evolution of the
control point system



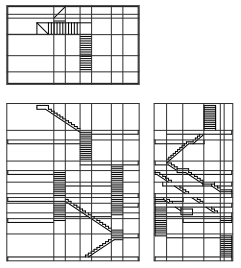
5. Remove grid:
control points series



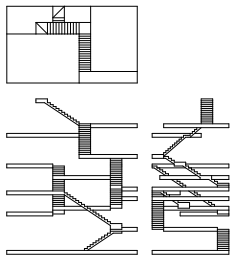
4. Control points at
intersections



3. Isolating the grid



2. A three-dimensional
grid fits to the platforms



1. A series of
platforms and stairs

Phenomenological Versatility

A New Suburban Vocabulary

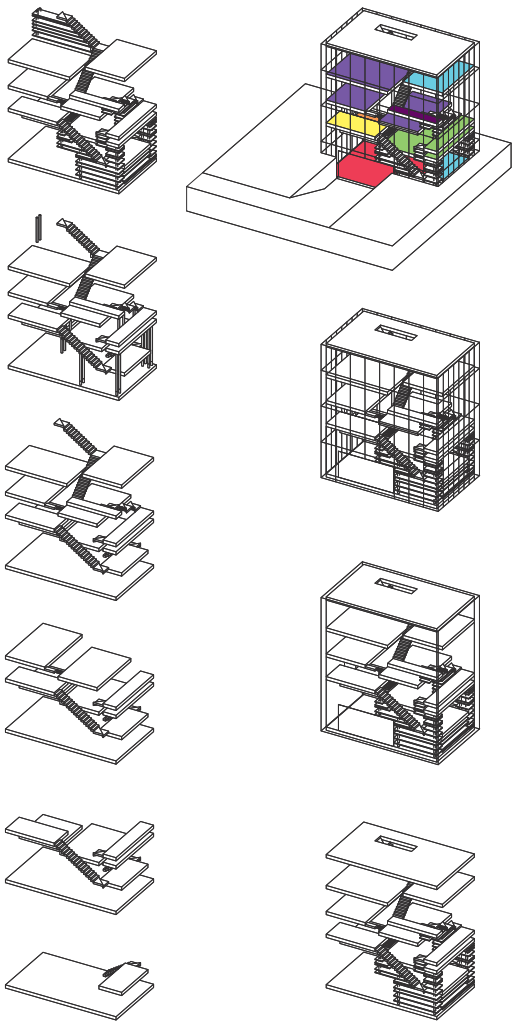
Marsie Klug | Studio Critic: Irene Hwang

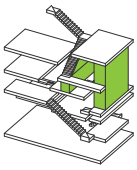
American society is wholly accustomed to the repetitive nature of the suburban house. Rooted in longtime notions of the American dream and shaped by 1950s ideals of the nuclear family, American suburbia remains formally and stylistically homogenous despite its environmental and cultural diversity. Excluding extraneous variations like stucco façades versus vinyl siding, the suburban house is predictable and often unquestioned. Through the manipulation of the building envelope, the insertion of spatial interrupters, and the development of interiors lacking walls or doors, this project attempts to create a suburbia that allows for choice and adaptability in regards to site, situation, and personality.

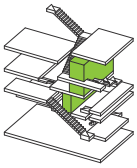
Proliferation and Flexibility: Initial Testing of the Spatial System

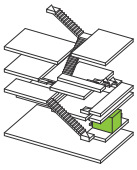
The manipulation of the envelope and the insertion of interrupters changes the spatial experience within each dwelling. The spatial system is a configuration of platforms, staircases, and shelves derived with the desire to take advantage of the vertical space in a condensed site. The system reduces solely to circulation space, attempting to use all the space within the system. There no longer is the autonomous hallway but multiple pathways opening onto platforms of larger space along the way.

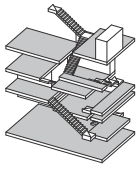
After setting up the spatial system, the façade system was tested to address the issue of privacy with regards to the interior-exterior relationship and a smaller overall building footprint.

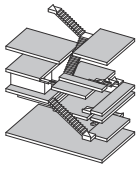


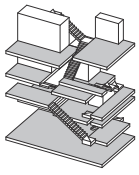


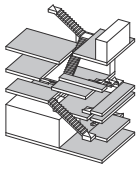


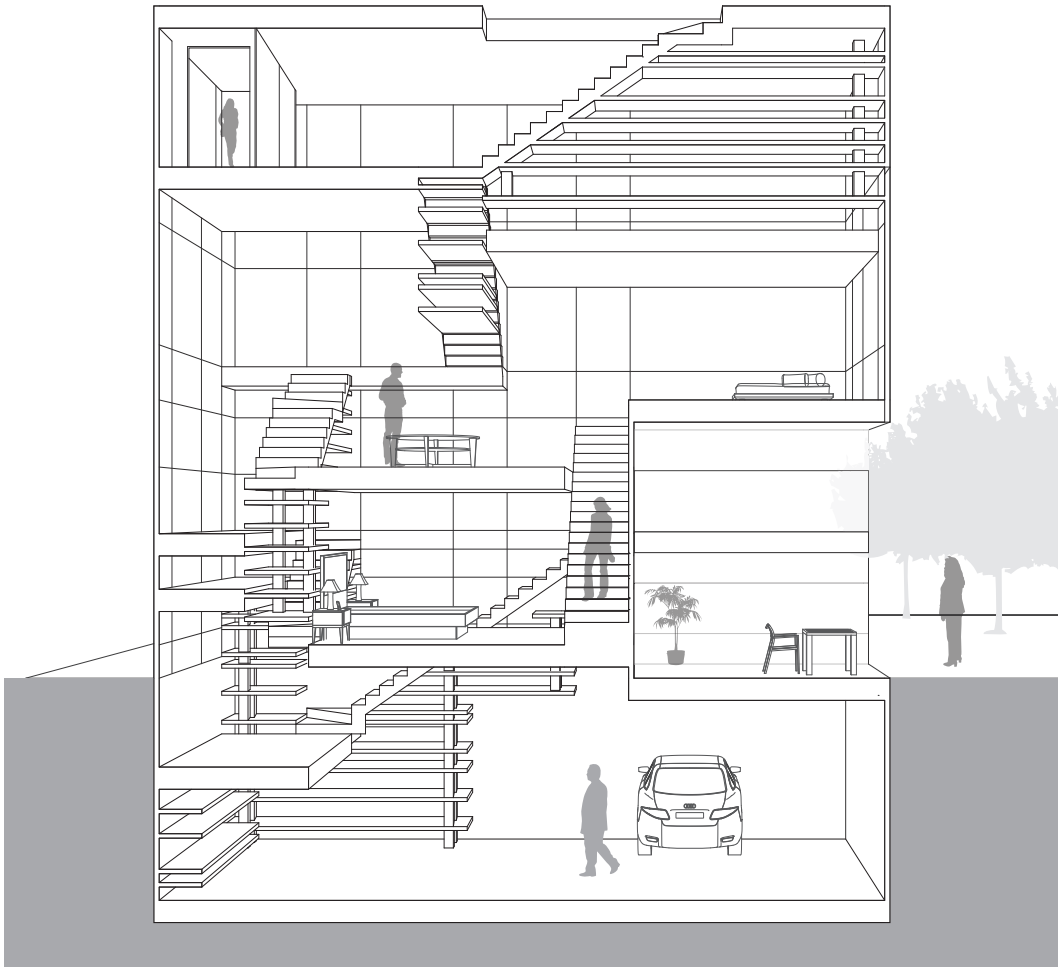










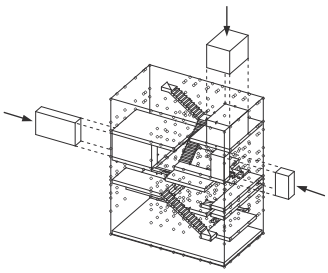


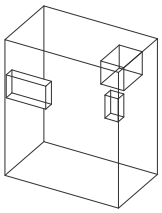
System and Testing

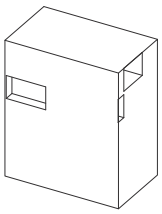
From the spatial system of platforms and staircases, a three dimensional grid was derived. Control points were placed at the intersections within the three dimensional grid. The control points guide circulation, variations of the envelope façade, the creation of adjacent exterior spaces, "voids," and "interrupters."

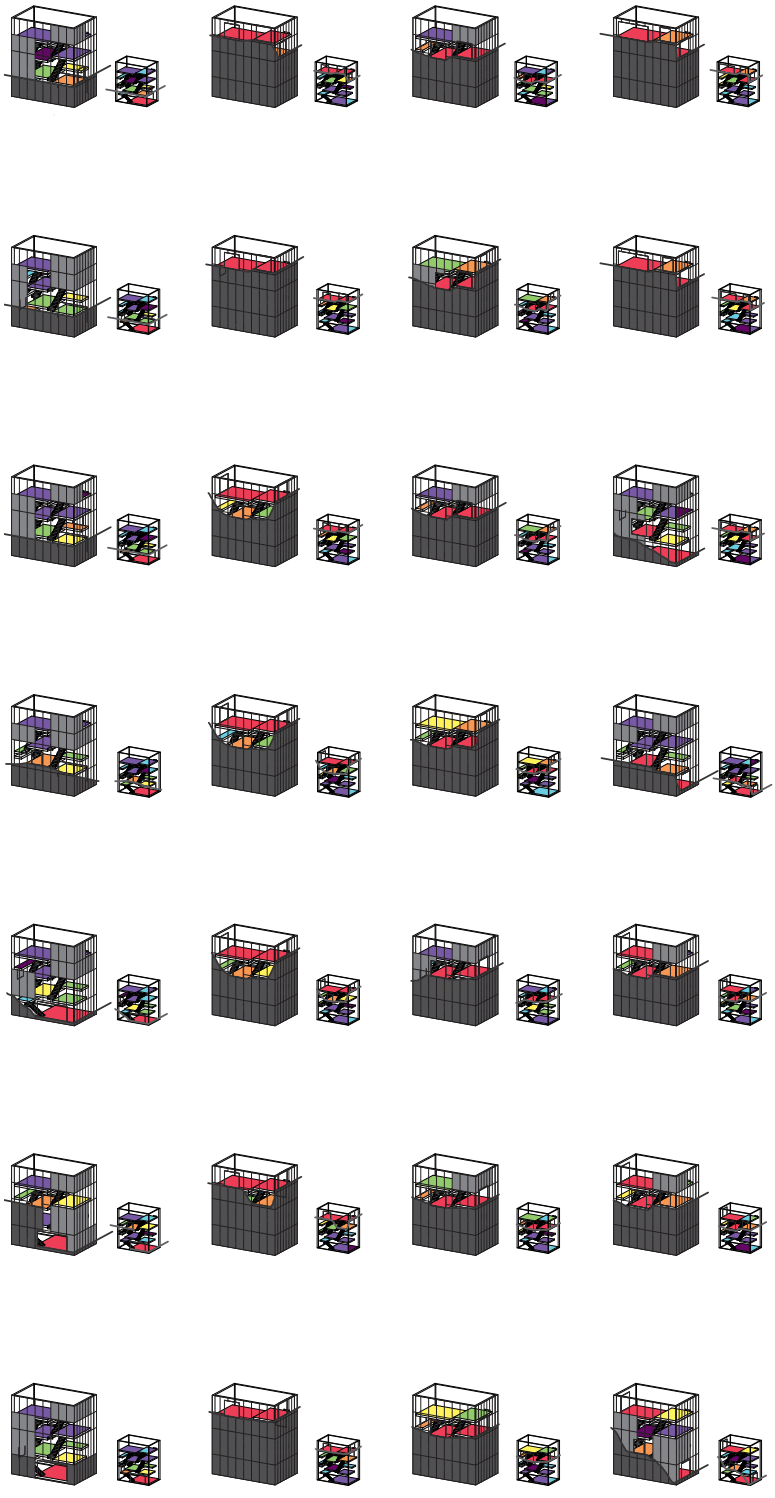
Interrupters: Breaking up the circulation throughout the interior, interrupters allow for the possibility of transforming the building into multiple dwellings. Interrupters adhere only to the control point system.

Voids: Although they have a similar formal language to the interrupters, voids do not affect the flow of circulation or continuity throughout the house. Through a manipulation of the envelope, voids create exterior spaces such as balconies, patios, and decks.









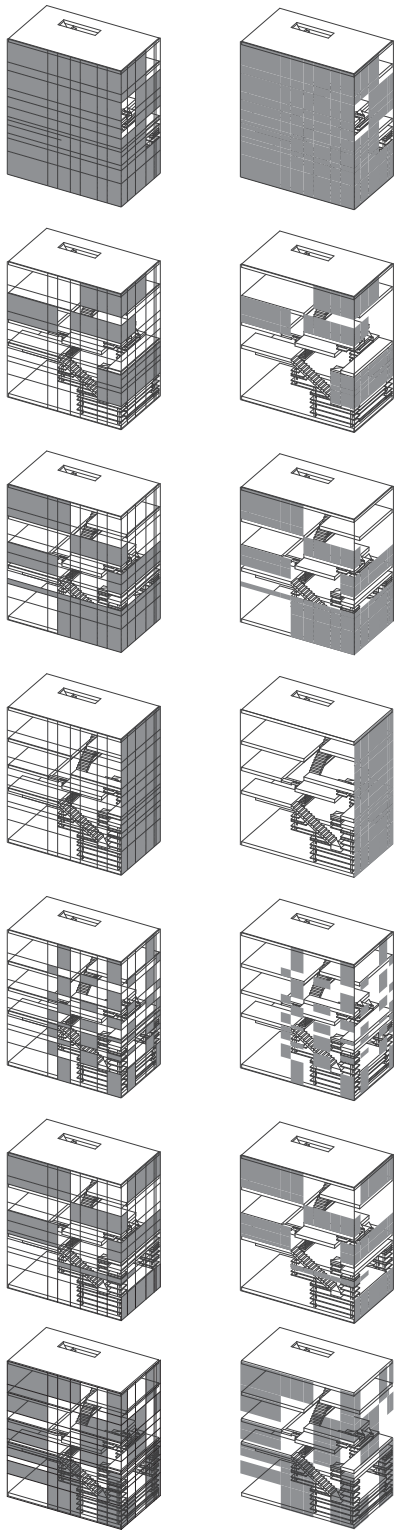
Aggregation: The versatility of the spatial system, which derives from shifting entrance platforms and a subsequent scrambling of the program, allows it to be placed within any topography from mountainous to flat terrains.

Refining Vocabulary

Voids: Inserted following the control point system, voids manipulate the façade to produce exterior spaces that may function as decks, balconies, and porticos.

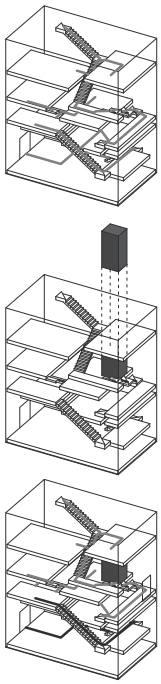
Facades: The façade is another flexible element of the spatial system. The façade is a combination of double skin glass and paneling, adhering to the control point system but also influenced by other factors like the desire for privacy, day lighting, or an individual's expressive statement.

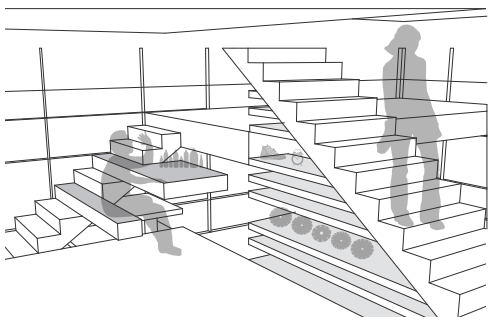
Stairs: The stairs may function as storage or transform into furniture, like seats and tables. Storage in the form of exposed shelving beneath the stairs provides the closest element to a wall or a barrier, but is contingent upon the amount of paraphernalia amongst the shelves.



Prototypes

Interrupter Axon: Two interrupters work to divide the occupancy into upper and lower dwellings.

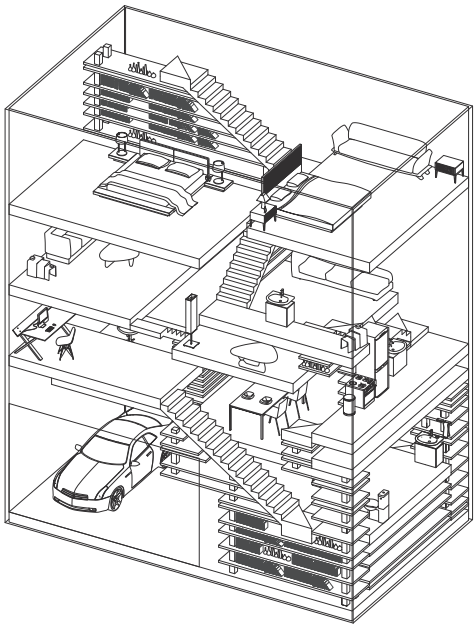


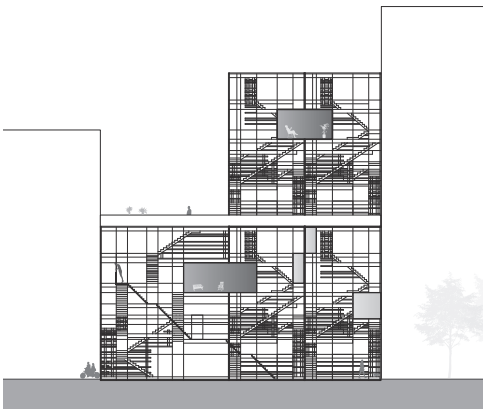


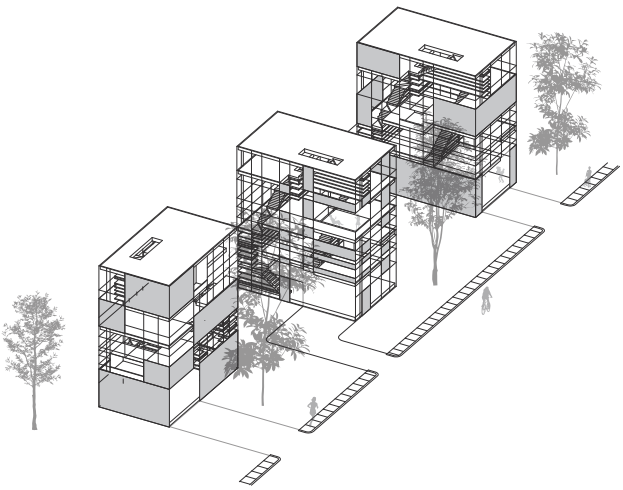
Deployment

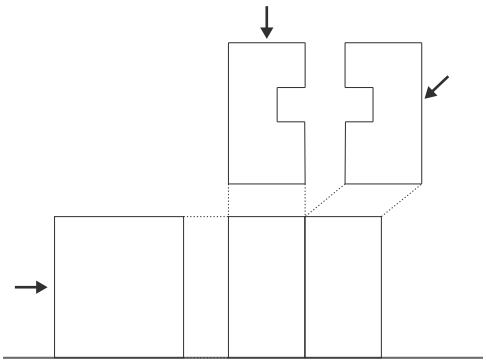
Urban: Within the urban condition, the spatial systems can be stacked and/or placed next to each other. Voids from one spatial system to another may merge to create shared courtyards, patios, and interior spaces.

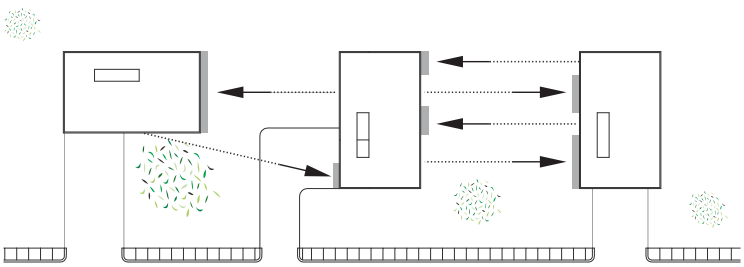
Suburban: Façade panels may be strategically arranged to provide privacy from the neighbor's line of sight. While deployable to any site, the spatial system does not have to remain isolated. The flexibility of the façade allows for strategic panels for desired privacy in the case of neighbors in a suburban condition.











‘Reigning’ in Sprawl

Ian Sinclair | Studio Critics: Steven Mankouche and Robert Fishman

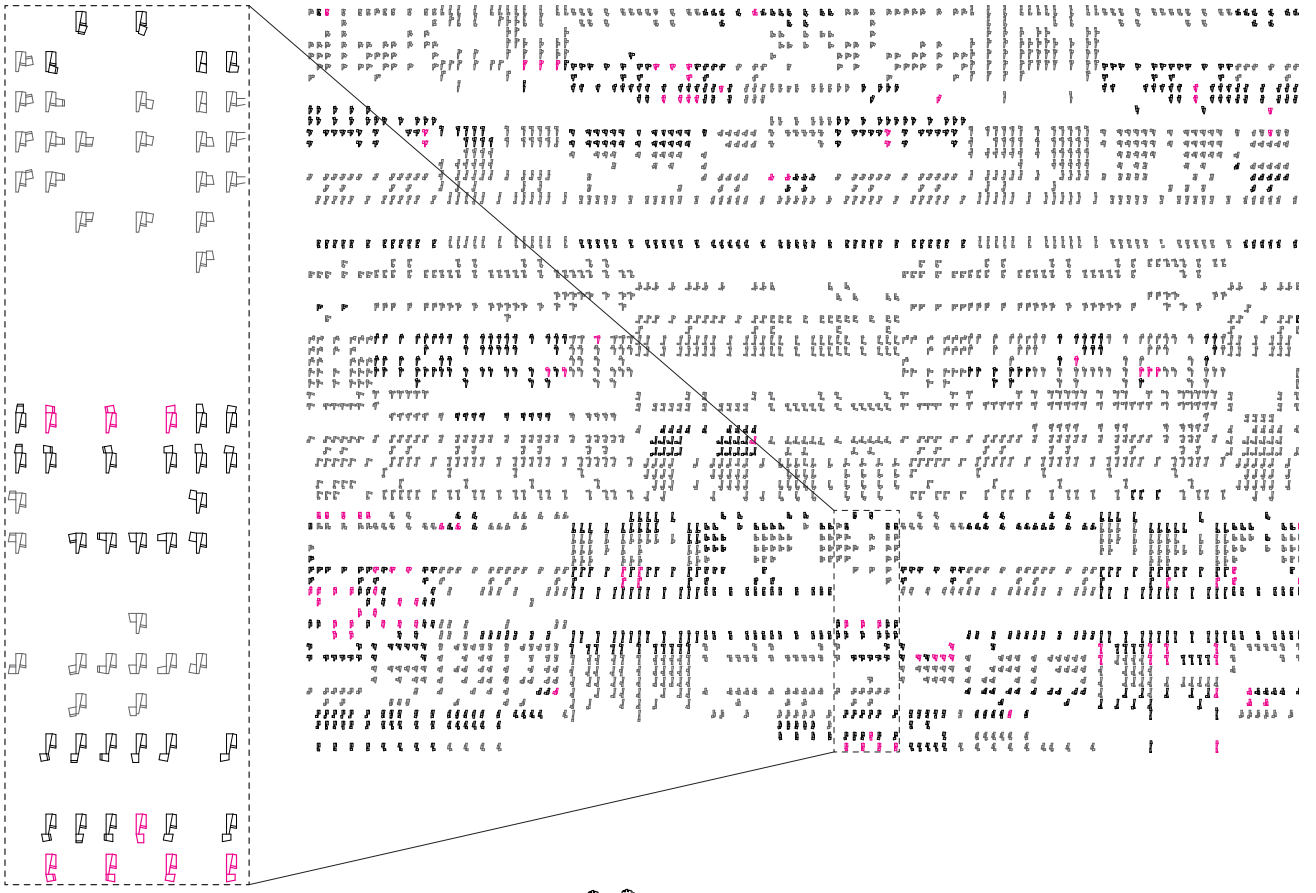
Post-World War II economic expansion promoted one environment that became of notable concern to the American population: the suburbs. Functioning within the logic of the grid, the suburbs became the ubiquitous context for the middle class population. As the socioeconomic and cultural makeup of the American population shifts and the focus on sustainable living gains traction, the need for new environments has arisen. By infilling nonnative urban growth patterns into the typical grid, this project posits a strategy to undermine the existing formal and infrastructural framework and cultivate potential for a new range of places.

The charge of the studio involved working with a large quantity of arbitrarily defined, three-dimensional forms. The forms are classified into “control groups,” based upon categories such as scale, proportion, mass, etcetera. Since the forms themselves could not change, the test of resilience became three-fold: the resilience of the grid and the suburb as an uncompromising environment; the resilience of form (at a macro scale) in framing social, political, and cultural contexts; and the resilience of the designer in grappling with constraints. Resilience is approached as both a means and an end, as a method for testing and as the object being tested.

Taken during one of the studio’s three installation projects, this particular image is from a half-burnt, abandoned house in Detroit. Each of the installations amassed the collective blocks in a different layout, responding to both the physical site and the cultural context.

In Detroit, the studio installed blocks in the image of a city; a kind of city center was surrounded by a dense and hastily planned downtown, which became less dense and more structured as the forms grew further from the origin.

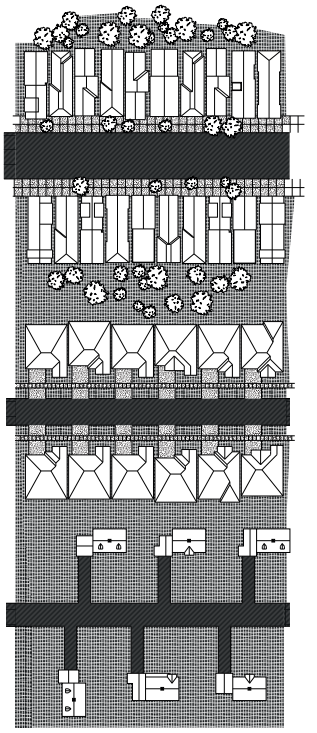
Image credit: Steven Mankouche.



Row houses in
San Francisco, CA

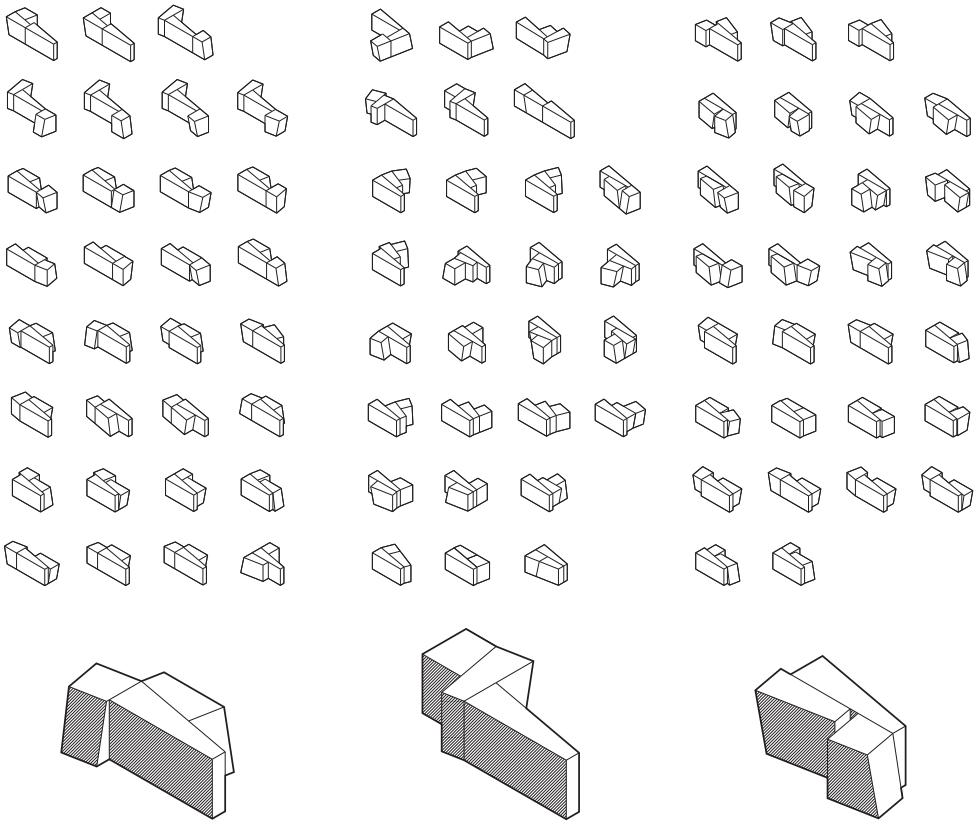
'Neoeclectic' spec
housing in a
non-specific site

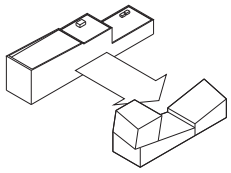
Low-density tract
housing in
Cape Cod, MA

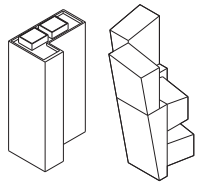


Kilo-taxonomy: Organization, Research, and Analysis

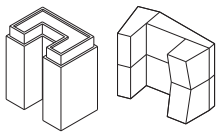
Focusing on suburban housing developments, the initial analysis looked at a range of densities and typical client demographics. Each development type provided a unique set of conditions responsive to social, political, and cultural forces. The following investigation focuses on row housing in first-ring suburbs, which provides physically tight contextual restraints that clearly reveal the cause-and-effect of splicing various urban growth patterns.



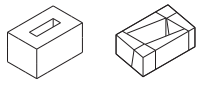




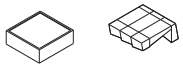
High-density commercial



High-density mixed-use



High-density residential

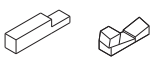


Low-density industrial

Mid-density residential

Mid-density mixed-use

Mid-density commercial



Mid-density commercial

Low-density residential

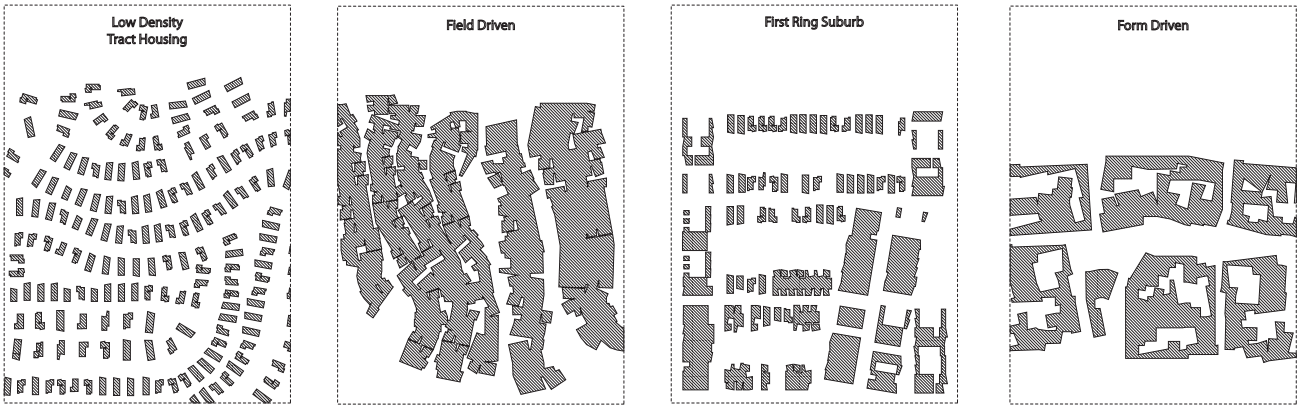
Low-density residential

Low-density residential

Play: Finding a Control Group

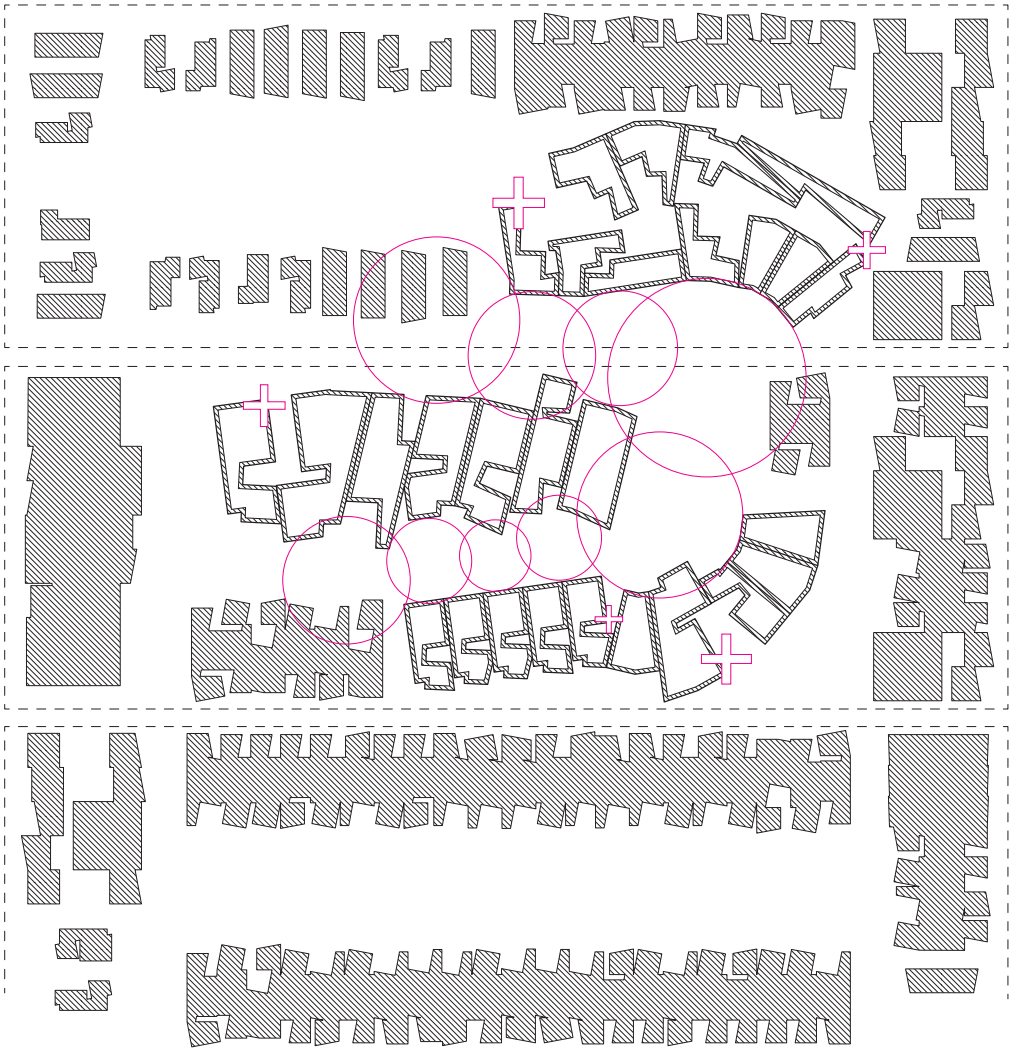
Within the set of forms, the value of each form was measured according to its ability to imitate existing building types' primary formal cues and relative proportions. This allowed for certain assumptions to be made about the way the blocks would aggregate and relate to one another, prioritizing an assumed relationship between cultural value and form.

While proportion, scale, and formal cues suited grid-based growth criteria, alternative growth patterns required an additional criterion. The two alternative patterns chosen were "form-driven" and "field-driven." Form-driven is reminiscent of older European cities: the form of the buildings and the collective spaces between them drives the overall pattern of the city. Field-driven is constructed more fluidly: The initial buildings are constructed in response to their context, and the following buildings are simply based on those that precede it. Long "interiors" form between rows of houses. Such patterns exist primarily in the Middle East and the Mediterranean Basin, where natural irrigation patterns act as the aforementioned contextual factor.



In *Learning from Las Vegas* in 1972, Robert Venturi, Denise Scott Brown, and Steven Izenour immortalized Giambattista Nolli's 1748 map of Rome and its unprecedented depiction of public space. Creating similar maps of the Las Vegas Strip, they were able to conduct fascinating maps surveying actual buildings versus their respective parking lots.

As *'Reigning' in Sprawl* focuses on public space and its formation by surrounding buildings, Nolli-style maps were an ideal candidate for spatial studies at the urban scale. Depicting firstly the control groups to understand typical spatial formations, these maps ultimately allowed a play with various and spliced growth patterns in a view alternative to the axonometric. Still, the project encompassed large territories.



Recreating the City: Exploring Urban Growth Patterns

With the use of a defined control group, recreating the city was as simple as playing out each type of urban growth within its own logic. For grid-based growth, this meant buildings must be preceded by infrastructure. For form-driven growth, it meant each city block had to be constructed completely before the next could be constructed, and collective spaces had to be defined early on. Field-driven growth had to follow the construction of the other patterns, as it necessarily requires a context off of which to build.

Inter- and Extra-polation: Resilience to Foreign Growth Patterns

Like all infill schemes, this process begins as a series of minor interventions. As new buildings are constructed, the existing context is reconsidered. The framing of urban space via new building typologies and growth patterns increases the flexibility of an otherwise rigid and restrictive system. Initial attempts at splicing together different urban DNA take place on the scale of the city block. As this process becomes more refined, the techniques become increasingly seamless within the existing urban fabric. The logic of an individual infill building becomes part of the context, and subsequent construction takes new form. Implanting a single building on a single block has the potential to change the entire urban fabric over time.

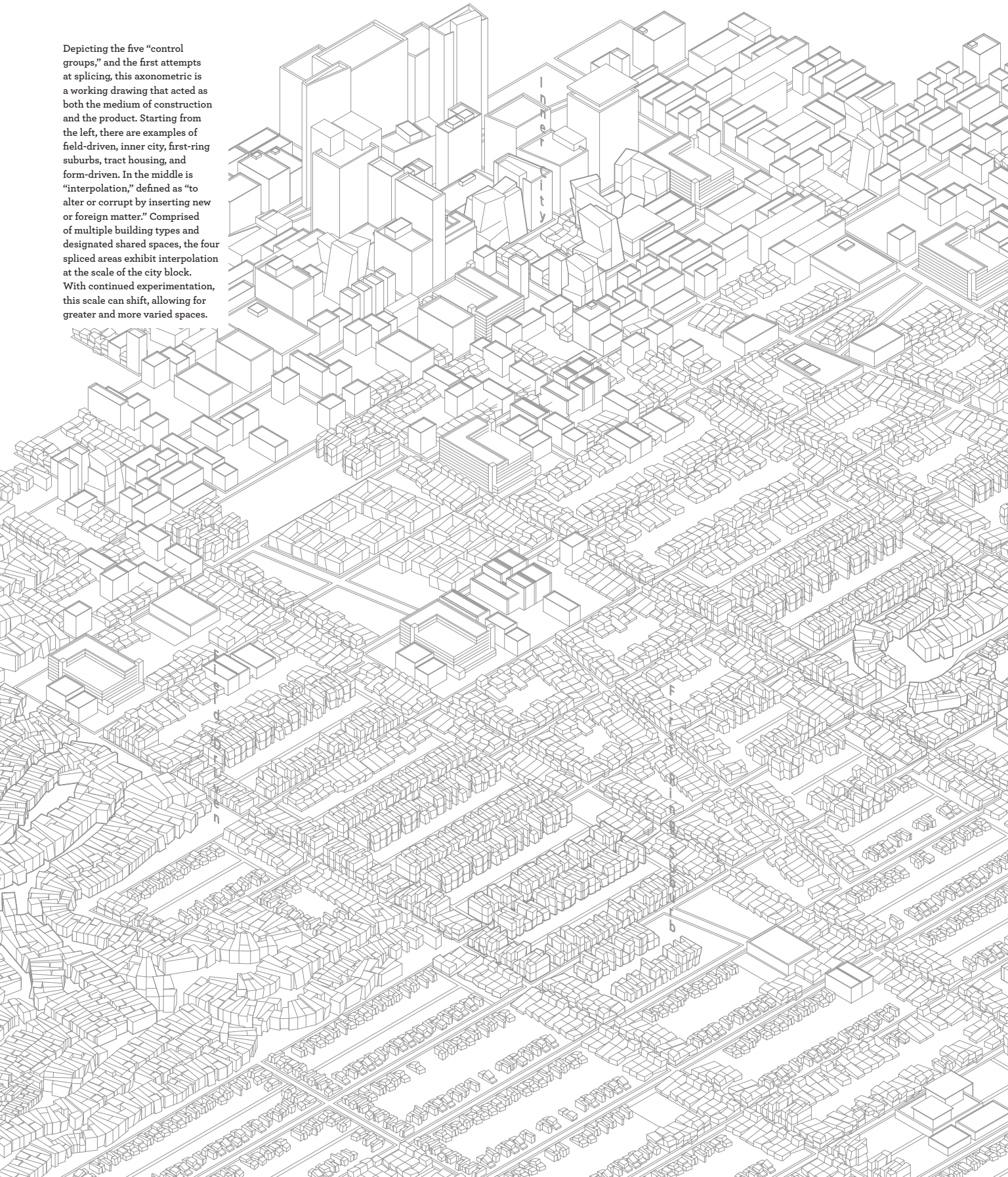
The limitation of using arbitrarily defined form was not a foregone conclusion. By focusing on the logics of the various systems at play and avoiding unnecessary variables, a set of tests were able to play out possible avenues for increasing the potential of the grid. The restrictive logic of the blocks provided a unique insight into the potential power of form as an architectural tool.

However, the a priori nature of this project constitutes only one approach to design at a regional scale. Field research and on-site analysis fill important gaps in the narrative. Individual decisions play an essential role in determining the urban fabric. The translation of cultural process into material form is something that takes place over long periods of time, and is ultimately related to both historical trends and current cultural practices. One does not exist without the other, and design of such space cannot be approached without a thorough knowledge of both.

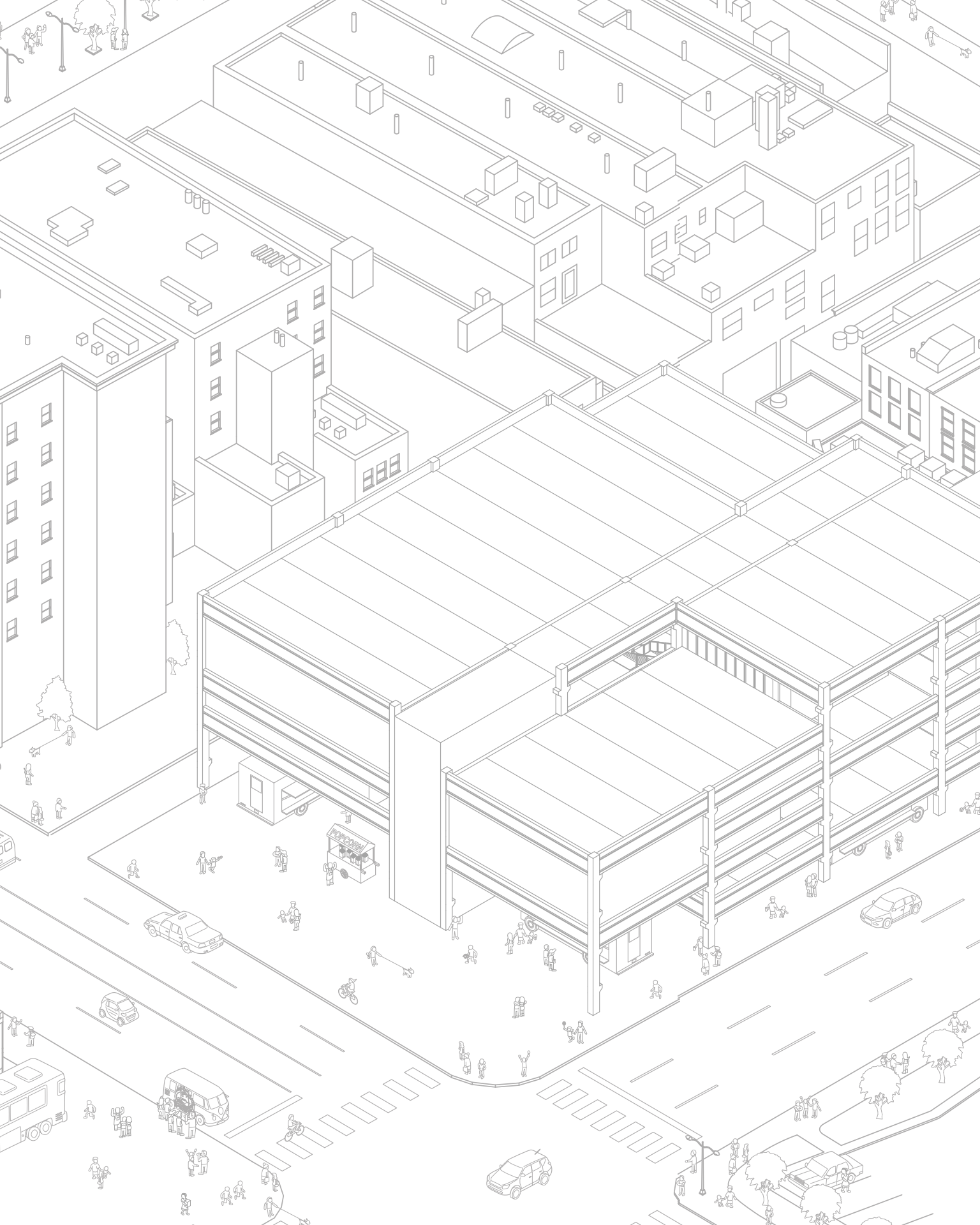
As the population increases and our natural resources are depleted, social and economic forces will inevitably encourage denser environments. Greater cultural diversity will require a greater assortment of urban and suburban fabrics. By understanding the historical development of our urban infrastructures and the role they play in nurturing contemporary cultural practices, we may distill a relationship between field operations and their associated cultural processes.

Ian Sinclair

Depicting the five "control groups," and the first attempts at splicing, this axonometric is a working drawing that acted as both the medium of construction and the product. Starting from the left, there are examples of field-driven, inner city, first-ring suburbs, tract housing, and form-driven. In the middle is "interpolation," defined as "to alter or corrupt by inserting new or foreign matter." Comprised of multiple building types and designated shared spaces, the four spliced areas exhibit interpolation at the scale of the city block. With continued experimentation, this scale can shift, allowing for greater and more varied spaces.




Form-Driven
Interpolation
Tract Development


POPCORN

Now Playing: No Frills

Jacqueline Kow | Studio Critic: Thomas Moran

General massing of the building in downtown Ann Arbor

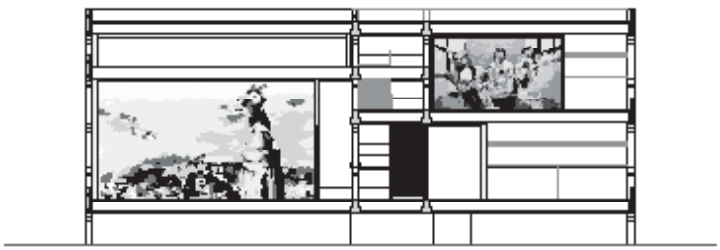
With respect to the sustainable practice of architecture, perhaps the future of design lies within economic considerations and investigations into the definition of program. Through a balancing act between economics and design, *Now Playing: No Frills* explores the possibilities and consequences of designing a building with "no frills."

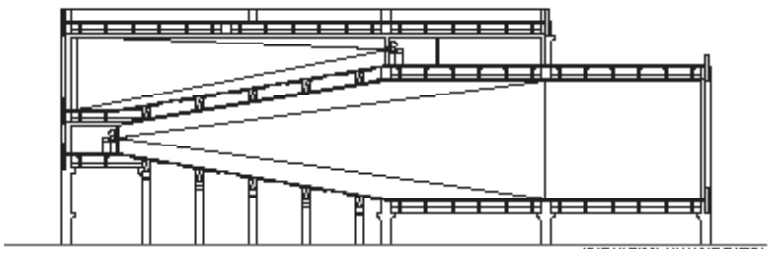
This project examines the program of the typical large movie theater and reduces it to three bare necessities required for watching a movie: a projector, a screen, and a dark room. This basic design, while lowering the price of the ticket for everyone, also allows for the opportunity for people to upgrade, For example, while one individual may find that sitting on the ground is suitable for watching a movie, another might be interested in paying for a cushion or chair. Also decreasing the overall ticket price is the use of the main movie screen for two different theaters; one theater sees a standard view while the other sees a mirrored image.

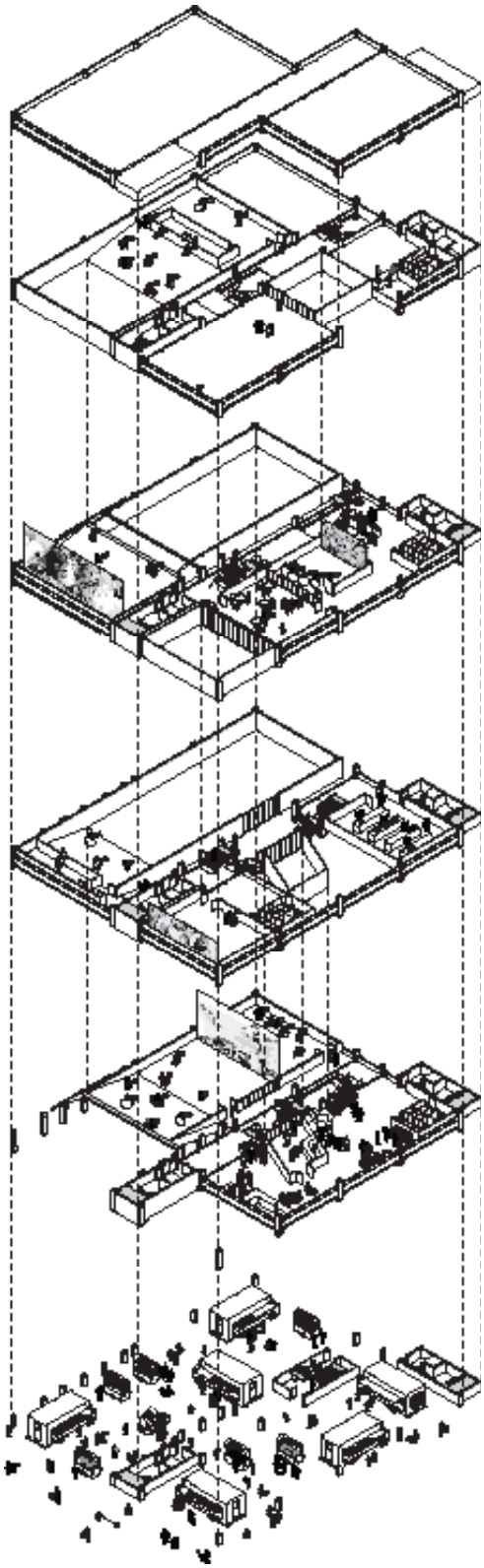
The building utilizes structural design techniques from parking garage construction. The parking garage has three benefits embedded within its construction logic that make it a cheap and efficient system: it allows for unobstructed spans of up to 60 feet; it handles program densification through vertical means; and it contains ramped surfaces which maximizes program occupancy while maintaining circulation.

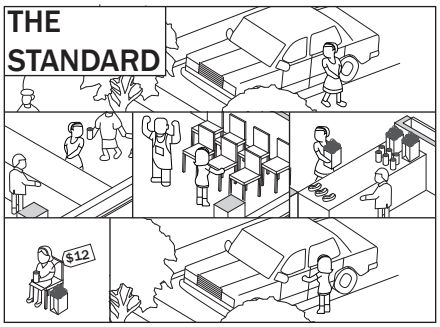
The ground level of the building is completely open for local food trucks and push carts selling food. This creates an active public area that benefits patrons, who can choose from a larger variety of food, and vendors, who can sell food to moviegoers and the larger public. Using the second level licensed food prep area, vendors can also serve food from the bar on the second level and café on the third level. The locations of both the bar and café provide the patron with a dual experience by allowing for glimpses into the private movie theaters.

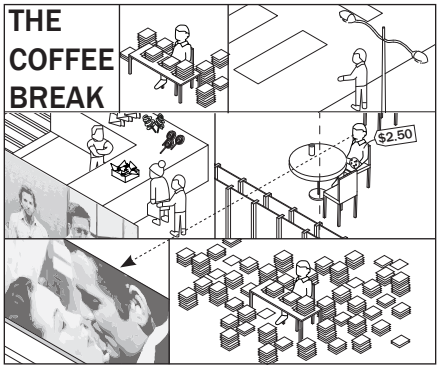
To increase spatial efficiency, ramped surfaces act as both the ceiling of one main theater and the seating zones of another. Allowing for quick access to all floors, the center bay is used for circulation and acts a buffer between the main theaters, smaller theaters, and auxiliary spaces.

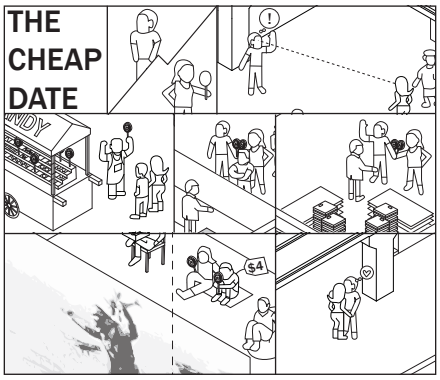


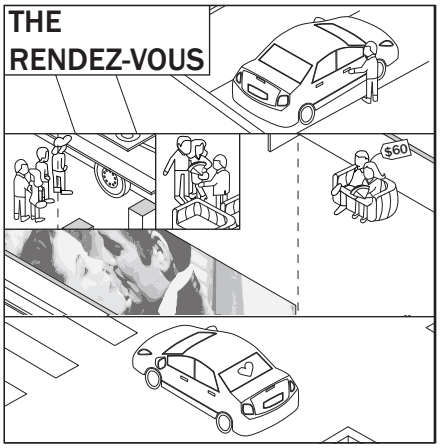












Left:
Exploded plans showing the basic layout of the building, the experience of the foodcart public ground level, how one purchases upgrades for seating on the second level, and how the building provides for a variety of viewing options into the theaters.

Right:
Comics showing how the building and changes in program allow for an infinite number of customizable experiences. While the building has "no frills," occupants still have the opportunity to upgrade from a standard movie-going experience.

Fall 2011 "Representation" Lecture Series

John McMorrough

Andrew Zago

Leon Krier

Sam Jacob

Edward Soja

Elizabeth Diller

Alexander D'Hooghe

Robert Somol

Preston Scott Cohen

Jason Salavon

Theaster Gates

Manuel Lima

Francis D. K. Ching

George Baird

POWER Conference

Symposium: "Framing a Cultural Ideal"

Symposium: "Curating Race Curating Space"

Winter 2012 "Construction" Lecture Series

Richard Norton

Peter Galison

Research Through Making Presentations

Dan Wood

Alexandros Washburn

Paul Lewis

Antoine Picon

Will Bruder

Stan Allen

Jonathan Barnett

Kenny Cupers

Neil Denari

Guy Nordenson

Liza Fior

Laura Wolf-Powers

Barbara Bestor

Brian Leary

Alejandro Zaera-Polo

Benedetta Tagliabue

José Oubrerie

Whither Installation Symposium

MLK Symposium: "After Eight Mile: Race, Class, and Regional Transformation in Metro Detroit"

Symposium: "The Geologic Turn"

RISK Conference

Interviews

4 November 2011 — *Robert Somol*

10 November 2011 — *Preston Scott Cohen*

2 December 2011 — *Francis D. K. Ching*

25 October 2011 — *Alexander D'Hooghe*


D&G

Robert Somol

D25: *Dimensions* was started in 1987—this is its twenty-fifth birthday. From your perspective, what is the most significant development in architecture in the last quarter-century, since the journal began?

RS: I don't think it's coincidental that the journal starts in '87, a year after the beginning of *Assemblage*. I would say that's the second generation of the institutionalization of theory in the academy, in which specialists known as theorists would enter the domain. A year later, you have the Deconstructivist show. 1987 is at the tail end of post-modernism and the beginning of the full-fledged introduction of critical theory into the academy. So if that's what is significant in the late eighties moment twenty-five years ago, then the question is: what's been the legacy of that intervention?

Some of us intellectually grew up at that moment, became frustrated with it, and tried to move out of it *(laughs)*.

There are two trajectories that have emerged from that intervention that I want to address. One is the early nineties' birth of the paperless studio. One couldn't imagine how the technologies introduced would restructure architecture, education, and studio culture when this journal was born. Yet within five years, there were monumental changes. There were also monumental changes at the other end, which is to say the codification and institutionalization of critical theoretical work with the rise of the Ph.D. programs. Those two trends, the pervasive computational project and the institutionalization of theory as doctoral work, characterize the last twenty-five years (and, I would add, not always in the most productive ways).

I am interested in carving out a role that is consistent with what I call the "architect-critics" that emerged in the sixties and seventies: a hybrid role in which you could be at the same time a designer, a writer, a thinker, and a critic. That role has been broken down into technological specialization, on one hand, and scholarly specialization on the other. We have lost the opportunities of mixture—the ability to reach different kinds of audiences and to wear more than one hat.

D25: So what is the role of the architect today?

RS: I think there always will be multiple roles. In the late sixties' moment that I mentioned, the architect-critic was not the dominant mode, but it was certainly a possible role to occupy. The territory for the architect-critic has shrunk drastically, but I think it's still possible to take

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Somol is the editor of *Autonomy and Ideology* (Monacelli Press, 1997) and has served on the editorial boards of Any and Log. His writings have appeared in publications ranging from Assemblage to Wired. Somol is the co-designer of "off-use," an award-winning studio and residence in Los Angeles. His collection of essays, *Nothing to Declare*, is forthcoming from ANY Books and the MIT Press. He is a member of the Research Board of the Berlage Institute in Rotterdam.

Somol was invited to Taubman College to give a lecture titled "Four and a Half Earths Are Not Enough."

on that role. The question is: how do you find territory to do it?

Certainly we now have the architect as "expert consultant" or "team member." One of my least favorite buzzwords is "integrated practice." BIM, Revit. . . . I hate Revit. I hate every aspect of the idea that architecture has become commoditized, that it has become a product. When you say that architects make products, which is really what integrated practice and BIM lead to, you have basically abandoned the idea of architecture as a professional service. While "professional service" may not be glamorous, at least services can fail. Products can't fail. And when you insulate yourself against failure, I think you no longer occupy a cultural field.

There is also a new avant-garde that is buying into the collapse of representation and construction into the same thing. That's a professional, corporate efficiency model, and it's also seemingly an installation architecture model. I think they're dead ends. But there have certainly been a lot of people who have emerged in that role.

D25: How do you think the proliferation of digital tools has affected the way we design and communicate? There has been a push in the school for digital installation work in which you produce the same thing you model, to the point that the thing and its representation are very similar.

RS: Right. We have seemingly moved away from the paperless studio, but now we're actually in one-to-one scale things. It's a weird legacy. We thought we were going lighter, but we're going heavier. The one-to-one installations are really just "big prints," as Brett Steele calls them.

I think the positive legacy of digital tools would be, as Michael Speaks has theorized, that rapid prototyping gives you an ability to scenario-plan in real time and to show variation very quickly. The potential downside is the corporate BIM model, in which we condition design by virtue of its fabrication in the lowest common denominator sense: off-the-shelf parts that are already specified in terms of their performance, materiality, etcetera.

In a sense what used to be design, and the idea of architecture as a paper or representational practice, have disappeared in favor of design as a product. By shrinking the role of conceptualization and ideas—which used to be in the paper part of the project—and prioritizing instant realization, I think you leave behind some of design's ideological charge.

D25: So how do you address a firm like SHoP, who sees this as a way to take back terrain for architects?

RS: That's the argument. I guess if Greg Pasquerelli and company think that that's useful to their practice as a business model, who's to argue with them? Somebody like Michael Speaks, who is a friend, would clearly endorse that way for architecture to enter the market. But I'm skeptical of the idea that we should shift the discipline toward practice and/or business models. It becomes too quickly a form of accommodation to existing needs, and I think

architecture is really good at imagining, as Steve Jobs did, needs that we don't yet know we have. It's a Faustian bargain. If SHoP can remember where its heart is despite its techniques and methods, good for them. But I think in other hands that recognition would be too easily lost to the politics of accommodation. As the Clash would say, "he who fucks nuns will later join the church."

In a way the desire seems to be to go back to the pre-Renaissance model of the master builder, but I still think the distance between representation and fabrication is important.

The distance is what makes an architect make drawings. Unbuilt projects can still be effective. They're the center of the discipline. We do visualize lots of possible futures, and traditionally ninety percent of what architects do doesn't get built. We need to celebrate that as a positive, not as failure or accident. When you turn everything into a design-build practice you leave the ideological, cultural field. If your model is an efficiency model where ninety percent of your designs are going to get built, then design-build is probably a good way to go. But I think the discipline loses with that business model.

D25: Our next question has more to do with your prior education: Has the work that you've done as a student affected your work today? And also, through teaching, have you developed a better understanding of your work?

RS: To the last: for sure. Teaching really helps develop your project. When you have to say the same thing twenty different times in twenty different ways, you become really good at figuring out what your

position is. You'll try a different set of words to see if that sets off a light bulb, so you become a human thesaurus of your own ideas. It also helps that there's a lot of feedback and a lot of people testing things out.

I did a studio here four years ago when I was interested in the idea of cartoon urbanism, the comic and the graphic. Just having a group of students here work on that problem was incredibly productive. It allows you to start to discriminate what you're really after.

Teaching helps develop the ideas. To me it's a three-part relationship: there's design, there's teaching, and there's writing. Although they're different media, you always have to be pushing the same project through them. Teaching might highlight one aspect of your project, writing another, and design a third. But they have to push each other; something you design causes you to start writing about something else, or something you teach causes you to design something differently. It helps to wear the different hats.

"While 'professional service' may not be glamorous, at least services can fail. Products can't fail. And when you insulate yourself against failure, I think you no longer occupy a cultural field."

My prior education has been quite checkered, as you know. I benefit from having early on very few mentors or institutional support. So—

D25: We're tainted.

RS: In a way. Having come from outside of architecture into architecture, I was always a kind of voyeur in the field. I entered as a theorist at that moment in the late eighties, and then got mainlined by certain friends and colleagues and people who would become mentors. When I entered the Ph.D. program at the University of Chicago in 1986, there was no one to work with. I had friends in my generation to talk to, but there were no faculty who could advise the work and no other students who were interested in the work. It was lonely and exciting. You had to make your own community.

My problem with institutionalization today is that *(snaps fingers)* the degrees are ready-made products. If you go to Princeton for your Ph.D., you know what you're going to be working on, what your sensibility and orientation is going to be, and probably where you're going to get a job.

I prefer a chance serendipity, for which my background is probably evidence. Before my Ph.D. was law school. At first I rejected that earlier work as a way of inhabiting what I thought to be the center of the discipline of architecture, but now I realize that to save the discipline a lot of that work must come back. The legal education was important. I went to study with Roberto Unger at Harvard because I was interested in his version of an institutional, projective modernist project

through political, economic, and institutional forms. By the late nineties, when I was trying to move away from the institutionalized project of criticality, it became useful to go back to Roberto Unger as a model for where architecture could go.

In that way it was good to have a shady past (or short attention span) because it allowed me to tap into sources that could shift the center of gravity from where the train was going to somewhere else. I don't mean leaving the field. I think it is central to always go back to the discipline. All of those other people who were driving the train the wrong way also had a set of external references that they brought to architecture.

D25: In that regard, what advice would you give to today's graduates as they embark on their careers?

RS: Basically, hang out with people you like, do things you like, and the rewards will come your way *(laughs)*. Don't model yourself after a current market niche because it will be gone in three years. You don't need to train yourself in Revit because that seems to be how you get a job. There is having a skill and getting a job, and and there is taking a position and developing a project.

It's good to make money and to have a job, but understand that the forces of the marketplace don't care about you. You're expendable. You need to resist some of that stuff. They're just going to buy you as the plug-in for one model and three years later they'll buy the newest graduate to replace you—you're like their software update.

You need to have a project that has legs beyond that skill set, and I think that school is the perfect place to develop the beginnings of it. It doesn't need to be fully-fledged, but I think that you need to understand architecture as a cultural project, and that you'll be in it for presumably fifty more years. What you learn here can't possibly sustain that period of time, unless what you're really learning is how to be curious, develop a project, and act as a cultural agent through the medium of architecture.

D25: That seems better than being plugged in. So do you see your students doing this?

RS: Yeah, it's just much more difficult than—I mean I understand the difficulties. I don't want to make it a generational thing. I understand that education is much more expensive, the market is much tighter. . . . There are a lot of reasons, but frankly when I started school I never knew what I was going to do.

I'm not sure I wanted a job. I actually thought that I got an education not to have a job. So when people come to me, particularly parents, and ask, "Well, what job are they going to get?" I say, "Beats me." If you're interested in this field, you will live. But I can't tell you where you're going to work and guarantee your employment.

I don't think it's a generation of students *per se*, but I think it's a shift in our era that performance is metrically based, as in *No Child Left Behind*. The kinds of standardization that have affected education and professional

education in particular are just part of that same metric culture where everything has a measurable bottom line: environmental metrics, efficiency metrics, education metrics. What are our learning outcomes? I don't know. I teach. I don't know about learning outcomes. That's bureaucracy-speak. I think that our job is getting so bureaucratized that we're losing why we are here in the first place.

It's very hard now to follow your interests and curiosities wherever they may lead. That's why I say I was fortunate not to know what I was doing and not to have any guidance in it. My advice is to form a support group in school and keep that project going, no matter what your day job is.

D25: The rumblings are that next semester BIM is in the curriculum.

RS: That was a spit take.

D25: It seems like we're a test piece next semester to see if we can make BIM work. And it's terrifying, I think, for a lot of us.

RS: When I arrived at UIC there were pockets of it, and I just couldn't bear to see it anymore on the wall. We outlawed Revit and Sketchup, the two really ugly extremes. That's the model of practice or the market colonizing education. Ideally education colonizes practice, not the other way around.

It's not to say I don't like offices. I think some of the best parts of the discipline of architecture are in offices. SHoP would be one example, OMA would be another; in other words, research offices. Even though they practice, they've learned from the model of the academy. And equally I think there are schools that are total crap. Being at school doesn't mean you're good because you may

have sold your soul to certain kinds of practical demands. The push back of integrated practice is great for practice. But you're in school and you're not in practice. The need to have this kind of efficient delivery system seems premature in education because you're not even going to know what to fight for.

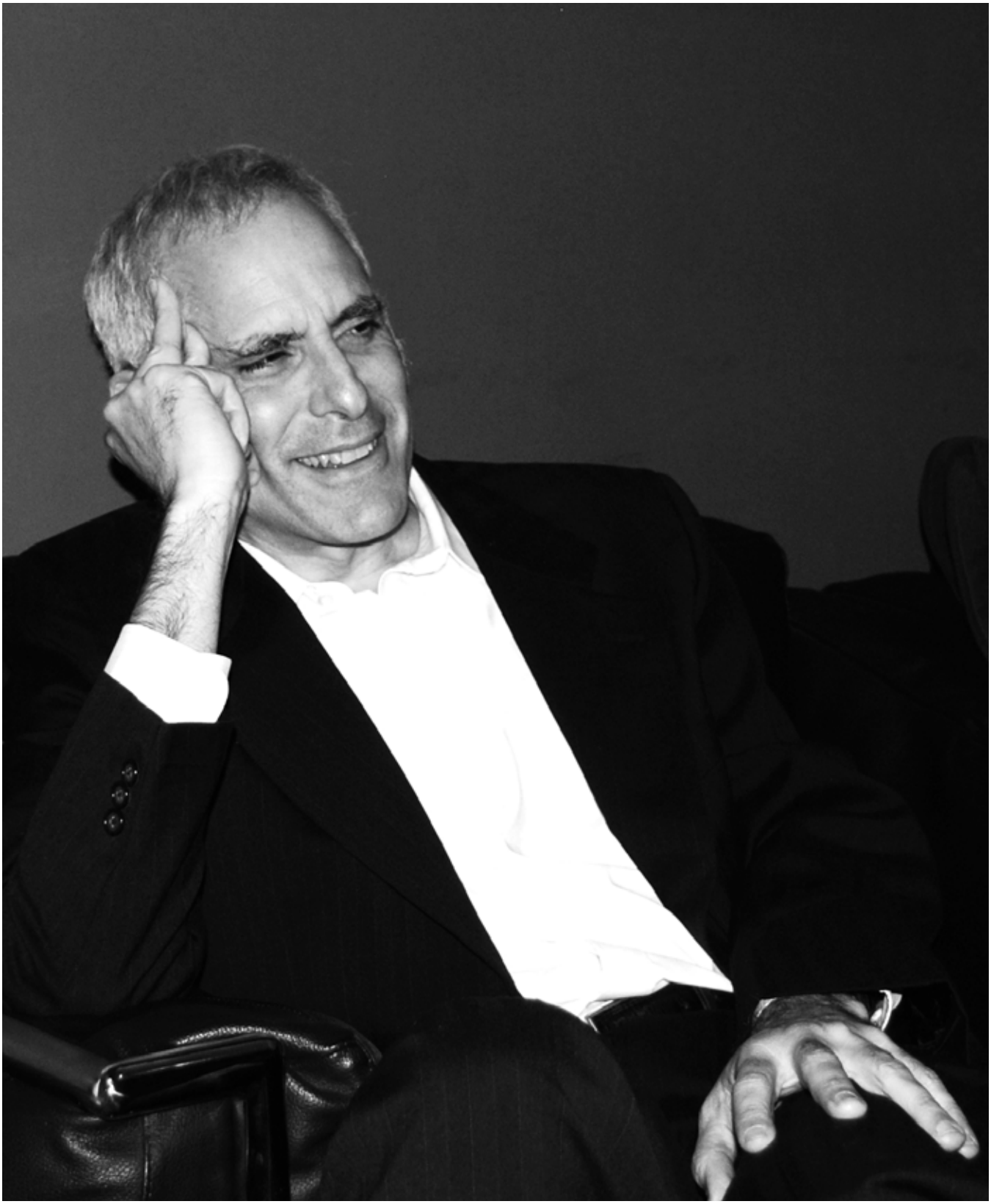
D25: Is this a cyclical thing, where the academy pushes and then the discipline pushes, or is this a newer phenomenon?

RS: On one hand, I think it's always that way. There is always a push-pull between the academy and practice and that's why I don't want to characterize it that way. Again, there are offices and schools I admire and there are offices and schools I don't admire. But it seems to me that the heart of the academy should be about the discipline of architecture, in the same way that the heart of offices is about the profession of architecture.

I prefer offices that imagine that their disciplinary agenda is going to motivate their professional obligations over schools that will sell out their disciplinary obligations for professional recognition and reward. The integrated practice model might be a great model for practice, but it's a bad model for teaching.

D25: I'm wondering if they're asking us to test the boundaries. Because I haven't heard it sold as, "integrated practice," more as, "how can you take this technology and get something that's not a punched window in a box?"

RS: I think it's great to try to use different technologies and materials against their nature. You should be provocateurs in that sense and try to pervert the predispositions of any technology or material. I am curious to see what happens.



Preston Scott Cohen

D25: *Dimensions* is a publication that was started at the University of Michigan in 1987 to encourage architectural discourse at the school. This year is the twenty-fifth edition of *Dimensions*. The first question is, from your perspective, what's the most significant development in architecture in the last quarter-century?

PSC: Oh, my goodness. That's big. God, what is it? That's a good question. Okay, last quarter century. If only you were to ask me, "What was the most significant development since the middle of the nineteenth century?" then it would be much easier to answer the question. Because there really were some significant developments back then. I wonder if there have been any significant developments in the last twenty-five years. I mean probably the biggest one for me would be—what would that be? What year are we talking about?

D25: '87.

PSC: That's a little late. Okay, the biggest development would be that after that time, we no longer could recognize a particular connection to a specific historical idea or framework of architecture. The postmodern period which preceded that was close enough to the modern to be a polemical departure from it. And people could recognize where they were going vis-à-vis this collective project and this ambition of modernism, which had been thought to have failed.

And there was a new adventure to rediscover other dimensions of architecture in this post-modernism. It was both optimistic and pessimistic because for many it was the end of the ambition of architecture to achieve certain goals that were—had been found to be unattainable—by the modernists but that were nonetheless very exciting and extraordinary and utopian. So this was the end of any of that, but it was a rediscovery of something else, maybe the aesthetic dimension of architecture—let's call it that—or historical dimension. But after the postmodern, the biggest development is that we can't—what I'm saying is that we can't quite understand where we are historically. I would say the most significant thing that has happened in the last twenty-five years is that we have entered a period in which we cannot understand very well what it is that stands as the point of departure for where we wish to be. There isn't a larger project of architecture to refer to and understand that we have broken from. That's the big development of the last twenty-five years.

D25: So sort of like post-criticality, or not that entirely?

PSC: Yeah, I don't use that term but okay. That's an

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Cohen is the founder and principal of Preston Scott Cohen, Inc. of Cambridge, MA. Recent projects include: *Datong City Library* (2008–2012), *The Tel Aviv Museum of Art Amir Building,* Tel Aviv, Israel (2003–2011), *Taiyuan Museum of Art,* Taiyuan, China (2007–2012), and *Nanjing Performing Arts Center,* Nanjing, China (2007–2009).

Cohen was invited to Taubman College to give a lecture titled "The Hidden Core of Architecture."

interesting idea to put it that way. That's okay. I don't think it's so bad actually. Let's say that's right.

Notice that I did not say that the most significant thing that has occurred is the incredible and the overwhelming deployment of the technological and computational revolution. I did not say that that was the main development of the last twenty-five years. I might be the only one who didn't say that or would not first say that. But I have to admit that it may be that that is a profound thing. We don't know yet. That's what I would say about it. We're not at a great enough distance from it to know whether it really is such a profound rupture or a truly significant architectural development. It is in and of itself a development that's significant. It has gained dominance in the production of things in all trades and practices and modes of living. It has transformed many of our communicative protocols in life but I don't know whether it's a significant development for architecture *per se*. That's the question.

D25: Similarly, how do you think that the role of the architect has transformed at the same time and what do you think the role of the architect is today?

PSC: The role of the architect? That's tough. Well, there are too many architects and too many practices to give you a single answer.

But I would say that the division between the architect who is singularly pursuing an investigation, who operates in the realm of something we used to call a boutique practice and the architect who works in the larger practices has dissolved. That this distinction is less clear today owing to the fact that the large firms have adopted the trends of boutique practices and the boutique practices have adopted the corporate through technology. So the different roles of architects—visionary, corporate leading architect, design architect, production architect—these roles are not as clear today. They can be easily swapped out one for the other. And I think this has a great deal to do with the new communication technology. The technology has empowered people to move between platforms or roles.

D25: That leads into our next question, which is how has the proliferation of digital tools changed the way we design and communicate?

PSC: We are getting there. I knew that was coming. Oh, my goodness. Well, I don't know. How has it changed? Well, with regard to my own interests, certainly computation suits me well because I always wished that I didn't have to commit concretely and materially to the representation of architecture, that it could be continually revised and reconceived at any moment in the process. There was a time when you would draw lines and the arrangements of those lines would be something you would have to be committed to just because of the labor of producing them. The complexity of undertaking that process and of going forward was too daunting to imagine changing it. And if you built a model or if you proceeded to actually give any material definition to the form, you were forced to live with it practically permanently. Now what we have is a situation in which these things are, until the very

end and even afterwards, subject to a 1D scaling operation! I mean to the incredible power of continuous transformation which means that the material definition can be constantly reconceived. The fluidity with which you can rethink things, vis-à-vis the tool, is so much greater. You have to be so much more nimble-minded. It invites a nimble mind.

D25: Okay. The next question is something that, as students, we're particularly concerned about. Does the thinking that you had as a student continue in the thinking of your own practice today? Also how do you think teaching has helped clarify your work or insight into your work?

PSC: Absolutely positively yes to answer the first question. I mean as a student you are open to many different ways of thinking and designing and projects and you don't have a fixed—a sense of your own direction really, yet. So it's still in formation. But what was interesting then is that I knew which intellectual projects were the ones that had to be worked on. And they are the ones that dominated at the time. I can't say I was a revolutionary. I was caught up in the most dominant discourses of that time. I am a product of theorizations of Colin Rowe, Venturi, Rossi, Tafuri. There's just no denying the power of these intellectuals during that period. So, when you look at that group and how they recast the modern, it created a euphoric sense of possibility because they had virtually evacuated the meanings of history and introduced a vacuum to be filled, an unknown possible future or an end of architecture as we had known it. I remember actually feeling that I was experiencing the death of architecture.

The radical diagnoses of where we were historically were liberating, terrifying, and exciting. Those things have stuck with me. It created a drive into a future which is so

undetermined, whereas the moderns had a very clear idea of where we were going, a teleological idea, an idea that there was a goal, a destination. Now, there was no goal. It was almost what Peter Eisenman called a futureless future that we were facing. And that, as I said, is liberating and terrifying. It has been difficult to let go of the euphoric feeling that this created.

As far as teaching is concerned, I don't want to give a cliché answer. At the beginning with the students that I had—and this is still happening—there were times when I would see something formal that was a permutation of language, a small step that could not have been foreseen. These moments are intimidating, frightening, leave me behind. Teaching leaves you behind because you see people leaping forward. This is also liberating, by the way *(laughs)*. You have to re-articulate yourself. Teaching is all about developing a discourse and through the argumentation—through explaining why you should or shouldn't—the why you think things should be one way or another, your own values are challenged and justified. You have to find an argument, you have to develop it, and it's very frustrating sometimes because I know what I think is right and to explain it is an agonizing exercise, because I wish people would just accept it. It's so much trouble to go to just to have people come around to your perspective! It's a constant process of learning how to think about what is at stake.

> *"I always wished that I didn't have to commit concretely and materially to the representation of architecture, that it could be continually revised and reconceived at any moment in the process."*

D25: Our last question is the one that we have to ask as a student publication: What advice would you give to today's graduates as they embark on their careers?

PSC: Ah, advice. I would say first of all to launch yourself from your strengths and your interests that are self evident to you. Allow your intuition to drive you toward certain things. Don't step out and imagine there's some big idea of what's right to do. Do what you want to do, actually. I mean right then and there. There's something that moves you to do what you want to do. I know this sounds almost irresponsible, but you should undertake to do what you desire to do first of all, if you can. Meaning, "I really want to do this little project," or, "I really want to be at this firm," or "I really want to work with this tool." "For the moment I am really interested in this one question of thermal mass and I've got to deal with reducing it." Or, "I've got to travel" and you've got to find a way to get a grant. This is the time in your life when you have the freedom to do what you want to do. Too many people are looking only to find the solution that they think will endure for them immediately. I think you've got to be—and this is a kind of a cliché—you've got to be willing to take the risk to do what you want to do and not do only what the economy demands of you.

Is that okay? What did most people or most of the architects you've asked advise you to do? Do you remember any?

D25: Well, sort of a similar thing. For example, I saw the graphic designer James Victore speak once. I'm not sure if you're familiar with his work, but he uses things like markers and paper cutouts and no computers at all. He basically said, "The rent gets paid." Like, "Just do what you want to do."

PSC: Oh. Well, I wouldn't quite put it that way. But I do think going against the odds is always a great thing to be doing, too. I mean doing it despite the rent not getting paid *(laughing)*.

Anyway . . . I feel like the students have so much power today. It's because of the tools that they know—you can almost do anything. I mean, from my perspective, students can do anything. I somehow believe that they have such a diversity of capabilities and skills, that they're not locked in. It seems to me you could almost do whatever you would want to do and that the only obstacle you have to deal with is the pragmatic. But in terms of your own ability in comparison to my generation's, we didn't have any agency—to use that very hot word right now. What we were capable of doing when we graduated was so narrowly academic. Now you have all of these tools and you can step in and be a player and even supersede the people in front of you by new means that they haven't mastered.

I would think you could be so much more devious, savvy, and operational. It seems endless. I see it differently than you guys do, I'm sure. You don't see it as being limitless the way I do because you are facing all of the others who are similarly empowered.

Thinking back to one of my first jobs, I wasn't getting anywhere right away. I sat in a little, arbitrary office, literally a tiny office space, and I was a really bad architect. I mean, not good. But I wanted to be in New York and so that's why I was there. I couldn't focus in that office because all I wanted to do was moonlight. I was doing other projects. I didn't have any commissions. I just did designs of distorted houses. Meanwhile, there was this other person in that office, and she didn't have any commissions either. I think we both felt and were indeed powerless. And do you know who she was? I didn't know who she was, she didn't know who I was, and we had no idea what we were doing there. We weren't from the same school, and we both thought the other was a nothing. It was Lise Anne Couture, the co-founder of Asymptote and the partner of Hani Rashid. I didn't know anything about her. As time went on, I discovered that she was really good. We spent a year there. Who knew what would happen? I think whenever we see each other, it's sort of embarrassing. We both know the secret that there was such a lack. We have to deal with each other's past *(laughs)*.

D25: I guess we never know which of our classmates will become those people in the future.

PSC: That's right. You're completely incapable of understanding who you are surrounded by.

Francis D. K. Ching

D25: This year is the twenty-fifth anniversary of *Dimensions*. The journal was started in 1987 to re-establish architectural discourse at the University of Michigan. From your perspective, what is the most significant development in architecture in the last quarter-century, since the journal began?

FC: I don't know what the most significant development is. Obviously advances in technology have affected both teaching and practice. Globalization and urbanization have had an impact. A third would be an increased awareness of the environmental consequences of what and how we build.

D25: Taking these changes into consideration, what do you think the role of the architect is today? Has it changed?

FC: The profession has changed along with the growing complexity of the environmental problems we face as a society. The architect today has to be a member of a multidisciplinary team, bringing design and problem-solving expertise to the design and construction process. I'm not a practitioner. From an outsider's point of view, I can see that practice has changed, the profession has changed. For example, building codes have changed tremendously in the past decade. As a client on an ongoing construction project, I can say with some authority that the design and construction processes are more difficult to navigate now than in the old days of the BOCA code lying on a drafting table outfitted with a parallel rule and triangles.

D25: Could you elaborate on the way the proliferation of digital tools has affected the way we design and communicate?

FC: Digital tools have definitely impacted the way we teach and students learn. For example, hand drafting is no longer required in many schools as digital media becomes more prevalent. At the same time we must ask, what are we losing and what are we gaining?

Just look at the work we see up in the studio. I don't think there's a single line drawn by hand. None whatsoever. *(Laughing)* So if I walk through this building, are these the only hand drawings I'll see? *(Points to crayon drawings on the wall made by a faculty member's child)*

D25: Maybe.

FC: I'm an aging dinosaur so I accept it. I don't have to teach anymore, but if I were still teaching, I would be thinking seriously about the role of hand drawing. There are a couple of areas where

Francis D. K. Ching is an architect, design and graphic author, and Professor Emeritus at the University of Washington. Professor Ching's publications, which focus on clarifying and communicating architectural elements, principles, and relationships, include: ***A Global History of Architecture*** (with Mark Jarzombek and Vikram Prakash), ***Building Codes Illustrated*** (with Steven Winkel), ***Design Drawing*** (with Steve Juroszek), ***A Visual Dictionary of Architecture, Sketches from Japan, Drawing: A Creative Process, Interior Design Illustrated, Architecture: Form, Space and Order; Building Construction Illustrated, and Architectural Graphics.***

Although he retired from active teaching in 2006, Professor Ching continues to write, draw, and offer workshops.

Ching was invited to Taubman College to give a lecture titled ***"Seeing. Thinking. Drawing."***

I think it's still valuable.

Digital technology has affected the design process—no doubt about it. The computer has opened up a lot of possibilities with respect to design development, production, and so on. Technology can't be blamed for the possible ill effects on design. We must accept it and learn to work with it. I think there are some things that we need to think about, obviously. That's an entirely different discussion; that's a lecture I'm not going to give tonight. But it's the elephant in the room.

I have a foot on both sides of the analog/digital divide. While I come from a background in drawing—hand drawing—I use a computer every day. Not CAD, but I use it for illustration and page layout. I like the technology. I have my iPhone, I have my iPad; I embrace these tools and enjoy using them. So I can see both sides of the issue. But if you're coming into the field now, you'll tend to see one side. And if any of you go on to teach, if you go on understanding only one world, that's all you're going to see. So there won't be people that can see both sides of the issue. That day is gone, I think. The question today is how best to use the tools and understand where they lead you.

"The question today is how best to use the tools and understand where they lead you."

D25: Have the things that you were thinking about as a student played a role in your teaching? How has teaching affected the way that you think about architecture?

FC: Well, my education didn't stop when I finished school. That's the most important thing to understand. I learned a lot in school, but when I began teaching is when I really began to learn. I have continued to learn. The world is much more complex today than it was then. It's a lot harder to get your head around things. The issues are more complex and things are more interrelated than they used to be. It's an interesting time, I think.

My introduction to teaching was an accident, basically. I didn't intend for it to become my career. Things happen for a reason, I guess. So I have been fortunate. But the academic environment is different today. I couldn't get a job today. That's something to think about.

D25: What advice would you give today's graduates as they embark on their careers?

FC: Well, as I said before, it's the beginning of a learning process. See the world. I don't necessarily mean travel the world, but understand that the world is complex. A lot of things don't get publicized. We often see a very small sliver of what's really happening.

D25: Keep drawing?

FC: I'll talk tonight about the value of seeing the world, seeing relationships—which are more important than the things themselves—and developing a sensibility for place. I'm less

interested in form, although obviously that's big today.

Be open-minded. Don't get stuck in a certain way of thinking. Of course, we continue to do what we're most comfortable doing, but be open to other ways of thinking. Developing fluency is crucial, whether it's with digital tools or the hand. And of course, visual thinking. I think perceiving relationships, integrating issues, and thinking about the macro- and micro-scale at the same time are really important. So fluency and flexibility are important. And making places.

These things are developed over time. I'm not sure how they're taught. I'm sure they are taught—that's the great mystery about the studio: how things are taught. I've seen these books, *100 Things To Learn in Studio* and all of that kind of stuff. But everyone avoids the issue of sensibility. I think about it a lot because I've tried to teach it. After teaching for so many years you always worry about what the students are actually learning.

D25: I'm looking forward to the lecture tonight.

FC: Well, I don't know what people expect. Like I say, I don't lecture a lot. I'm basically going to show my drawings, and I'll just talk about those drawings. It's more of a show-and-tell. It's certainly not going to be academic *(laughs)*.

No academics. I'm not an academic. That should be clear. I have always been a misfit in the whole academic situation. I'm an accidental academic. I fell into teaching by accident and I have never left.

D25: A happy accident.

FC: It was a happy accident. But I don't know what people expect (I have the presentation on my iPad and every time I use it, I hope it works). I hope that people see something in the lecture, but it's just a show-and-tell. A show-and-tell.

I will try to make some sense of drawing and what it involves.

Alexander D'Hooghe

D25: We thought we would start off with some questions about your work in general and then move towards a discussion of the workshop itself. The first question is, why the monument? Why has the object nature of the monument, for you, superceded the systems approach? And the second part of the question is, what is the interrelationship between the systems approach and the object, if any?

ADH: One thing is to simply be aware of what it means to be an architect or to engage with the world through architecture, and that's primarily with objects. As an architect you can't design and form a system like you could as a systems engineer working for a large utility company. Engaging with the city as an architect happens through the devices we deliver as objects. They need to be finite because they need to be paid for with a finite amount of money and developed in a finite site. There's always a level of containment which is actually very powerful for us as architects, and so for us to run away from that is not necessary.

In the compact historic city of yesteryear, the scale of the compact architectural object made sense. Now, however, if you placed the conventional architectural object out in the vast systematic landscapes of post-urban American suburbs, those objects basically become ridiculous. They're on such an incommensurate scale with the landscape that they become residual elements, like fossils caught in a vast geological stratum. The city used to be smaller and easier to control. Then we placed our commercial objects outside of the compact, manageable city and into the suburbs where their scale lost power amidst the huge emptiness.

From this one may draw the potentially wrongful conclusion that architecture isn't a successful tool to order the city with anymore; you have to go to, for instance, landscape urbanism or systems theory or large-scale infrastructural systems design, because those are actually on the scale of the suburban territory. This is an intelligent response; it signifies that we are beginning to reach outside of architecture to find other fields that more effectively give a civic presence and regional structure to those large suburban terrains. However, that for me is the fundamental resonation of the monument, and its last desperate gasp: to see that architecture actually does have the monument operating on a different scale and actually does have the capacity to reorder and operate on the regional civic structure and be more commensurate with the scale of those non-dense, non-complex historic city terrains.

Alexander D'Hooghe is an associate professor in Architectural Urbanism at Massachusets Institute of Technology. Professor D'Hooghe obtained his Ph.D. at the Berlage Institute in 2007 in connection with Delft University of Technology, after achieving a Masters in Urban Design at Harvard Graduate School of Design in 2001. He conducts a group called "Organization for a Permanent Modernity" located in Boston and Brussels. The group has won several large-scale buildings and competitions overseas—currently in various stages of permitting—and has published internationally, most recently *The Liberal Monument* (Princeton, Fall 2010).

Alexander D'Hooghe was invited to Taubman College to give a lecture titled "The Objectification of Infrasturcture," and to lead the "Experts in Studio" 4-day charrette with the graduate *Networks* studios.

D25: One discussion circulating through the school is about large landscape urbanism projects and how architecture is having to "concede" to them. Landscape urbanism projects have a tendency of being dropped due to their vast scale, substantial capital required, and various constituencies involved. Particularly now in our post-financial crash environment, how do you carry out the scale of the monumental project?

ADH: Well, first of all I think you're right about landscape urbanism. As we speak, several fields of knowledge adjacent to architecture and relevant to our contemporary city are being developed. It is not about "conceding" to these fields or being against them, as they are extremely useful and relevant. But indeed they lead less easily to building. For instance, to a large degree landscape urbanism is a mapping project. A good part of it is understanding the complexity of the terrain as it is and finding ways to read it not through conventional figure-ground relationships and not simply through maps but with new tools of reading. So it's logical that there is no image project coming out of it. It's systems-based, but you only build a small component of that system. Systematic thinking is wonderful in many ways except if you want to actually realize something.

"In order for us to have a role we have to isolate the field in which we can really make a difference, which I believe is the field of objects: the bridges, the connections, the interchanges, the platforms—all of those things that can be objectified."

D25: When you separate the architectural from the system, is there a risk of this translation project not being about infrastructure at all? Rather than an architectural infrastructure or an infrastructure with architectural character, does the infrastructure become just a platform that allows you to make a certain type of architecture?

ADH: Yes, that's why the objectification of infrastructure is something that still stands. There are still a lot of investments available, to a large extent from the government but also from private developers who are fine with developing infrastructure as well. I mean my plea is a very simple one; it only is for us to say, "Okay, billions of investment dollars are going to go into infrastructure. This time let's really find a way to build infrastructures that are not the same as Eisenhowerian ones and that really have a public architectural and civic quality." As a reference, it's more like the Works Progress Administration rather than Eisenhower; it should not just be the engineers and a technocrat doing this, but it should be designers.

In order for us to have a role we have to isolate the field in which we can really make a difference, which I believe is the field of objects: the bridges, the connections, the interchanges, the platforms—all of those things that can be objectified. I think there is definitely a sincerity to that last question. We have to develop our own nonconventional drawing language and production techniques to

be able to address that kind of design problem. So in a sense that has to come out of a new field or a new terrain of enquiry.

You can also just begin to think about buildings in a more infrastructural way. That's what we're trying to do in some of our own work in the office. We're trying to take buildings and dress them down until they have an infrastructural quality; a sort of skeleton that provides for more flexibility in the long-term future and that serves as an endurable infrastructural basis into which many different things can be placed.

D25: You mentioned that because building scales and budgets are increasing in places like Asia, more and more architecture is executed by private developers in situations where transformative design exploration is discouraged. Do you see American architecture heading that way, and is there a way to break out of this deadlock?

ADH: Absolutely. As far as I can tell, more often architecture in America follows the money than in Asia. So America's not trailing at all in that regard. I think there are two answers to your question. First, there is definitely opportunity in this, and it's not all bad. It's very important that we are starting to realize that architecture is an independent way of thinking that does not dependent on outside developments for the evolution of its own self-consciousness. There should be a clear distinction between disciplinary activity and professional activity, and a productive conflict between the two. And discipline, that's the rigor and eloquence with which we to talk to each other with architectural means.

For instance, as architects we need to have a whole apparatus of drawing production techniques that are not real estate driven, but that are independent for our own discipline and that allow us to speak to each other as peers. That's why I think the invasion of the photorealistic render as an

architectural device is problematic. I mean it's not problematic for the world; renders are necessary for developers. But those drawings are not the level of conversation you and I are supposed to have. We are free to talk in a different way.

My only fear is that in the degree to which we have this evolution towards high investment projects, the architectural profession might begin to think of itself as an aspect of real estate development. It's really important that we give ourselves an independent realm in which we can speak freely; a realm that is not predetermined by means of output or development-oriented ways of speech and drawing production.

Now having said that, the other point to make is that I do believe in a disciplinary separation project where architecture would break free and have its own internal conversation in its own language. Having said that, I don't think it's necessarily all bad like when you work with clients with money. Sometimes it's possible to demonstrate to a client that they can make more money by making a complicated project where a different typologies or templates are mashed together, and something very weird starts to appear. If you are able to convince developers to abandon their own cookie cutter templates, and you have showed them how this is relevant to them, then you are actually doing much more than you could do otherwise; you are rethinking the type of building you are going to be asked to produce at its very foundation. If you're given a type or a cookie cutter, all you can do is provide some decoration, right? You can paint the façade, and that's about it. Rethinking the fundamental type itself requires a lot of intelligence on our part and a capacity to speak many languages, but it's more possible than you may think.

D25: This brings us to something you've talked about

before, about coping with the structure of an endless realm by creating havens. Are there ways that we can shift the structure rather than simply accept it and just create havens?

ADH: Well, it's too early to tell. I think that the production of enclaves or zones that are the proliferation of internal horizons create moments where you really do escape the endless system and enter into another regime. That's really a huge—I mean that's really the project. But I don't know who the agents are that would help us realize that project. The public government is a potential candidate, but certain private developers could be as well. The weird thing is that today the wealth accumulated in the hands of a few is so incredibly vast that it is being used in almost whimsical ways, because people just don't know what to do with that much money. That actually creates a lot of the freedom for abusing the system. And I'm not sure if you should write that down *(laughing)*.

D25: How do you see what we're doing in the workshop play into what we've talked about? How do you see this propelling the students?

ADH: I am extremely enthusiastic about the workshop so far. We will see in a half an hour or in an hour whether it's really working *(laughing)*. But many projects have taken on both a level of objectifying an infrastructure, like dealing with a joint or shifted mode, and also a level of producing enclaves where one literally carves out a space of the system that doesn't belong to the system can't be appropriated into it anymore. I am super happy to see that happen.

One of the reasons that I find objectification in infrastructure so relevant and important is that in a historic city, you're used to having public space, right? Then for thirty years we had social studies scientists lamenting, "Oh, public space is gone." However, while not dense, there are residual

The workshop in progress.

Opposite Page:
Final review of the workshop models in CMYK Gallery

moments of publicness, such as thin strings of people hanging out together, that, if designed well and with a little bit of friction, are enough to be made into public moments. Thus the social project of the objectification of infrastructure is giving a frame and a space in which the few threads of urbanity left become visible to each other, so that we do something with urbanism's last tail end.

I think that's really visible in some of the studio projects; they're trying to take such moments, maybe even intuitively, and articulate them. On the other hand, of course, you have the enclaves. I think the biggest deal for me pedagogically is to get over a few obsessions we've had in the field for all too long, such as the idea that connection is good and connectivity is awesome. And that an open-ended system is a more participatory system. We've had the most progressive people in our field critique gated communities and enclaves for being closed off, but in reality you can turn these systems on their head, and the inverse will be true. Clearly we're all for an open society, but what enclaves are about is offering up a greater plurality of choices and differences within the system we have all inherited.

D25: I guess it's a little different looking at the rate of urbanization in this country relative to, say, China, but what you seem to be proposing is that the greater metropolitan landscape would become pigmented with enclaves placed in a kaleidoscopic manner.

ADH: Absolutely.

D25: Then once the enclaves have achieved a certain critical mass, there is a different set of choices to be made. It seems like this is a project that we'll be working towards for a long time.

ADH: Yes, I think your description of a series of products for the American half-urbanized territory is correct. I think that's very valid to have these kind of enclave speckles. And that's it; that's our country now *(laughing)*. There is no need for a city but we do have zones of intensity, and each has a formal identity of its own, which is what we as architects can begin to define. I think that's perfectly fair, and that is actually a great way of saying it.

China is different, and that's also fine. Somehow it's a little hubristic or almost ridiculous to begin to claim that one kind of criticality should govern all kinds of architectural actions worldwide. For instance, I think that China is in such a different situation right now that to do something critical there might be the very opposite of doing something critical in the U.S. I am convinced about this actually.

In America, for example, we are consumed with a faux bottom-up ideology where we believe monuments to be oppressive. But if we look around at what's being built, this has just become an excuse for big development to go its desired way. So we need to embrace our own capacity for monuments simply as a matter for our architecture and our architectural culture. We need to take back the steering wheel shaping and forming our society.

The University of Michigan, Taubman College of Architecture and Urban Planning offers three fellowships in the areas of architectural research and instruction. Each of the fellowships includes teaching related to the candidate's area of interest, resources for the development of work, possibilities to interface with scholars and researchers in the wider university context, and the opportunity to share the outcome of the fellowship with the College. Fellows spend one year in residence and teach three classes in addition to pursuing their fellowship interests.

Fellows

Nahyun Hwang
2010–2011 William Muschenheim Fellow

Excise City

Jesse LeCavalier
2010–2011 Walter B. Sanders Fellow

Big Plans

Irene Hwang
2010–2011 Willard A. Oberdick Fellow

Constructing Communication

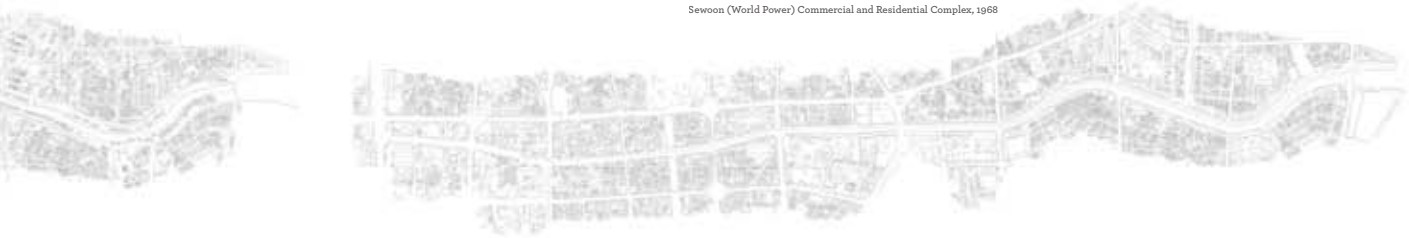
Paradise Valley with Lafayette Park, 1966

Detroit City Hall Area (pre-demolition), 1961

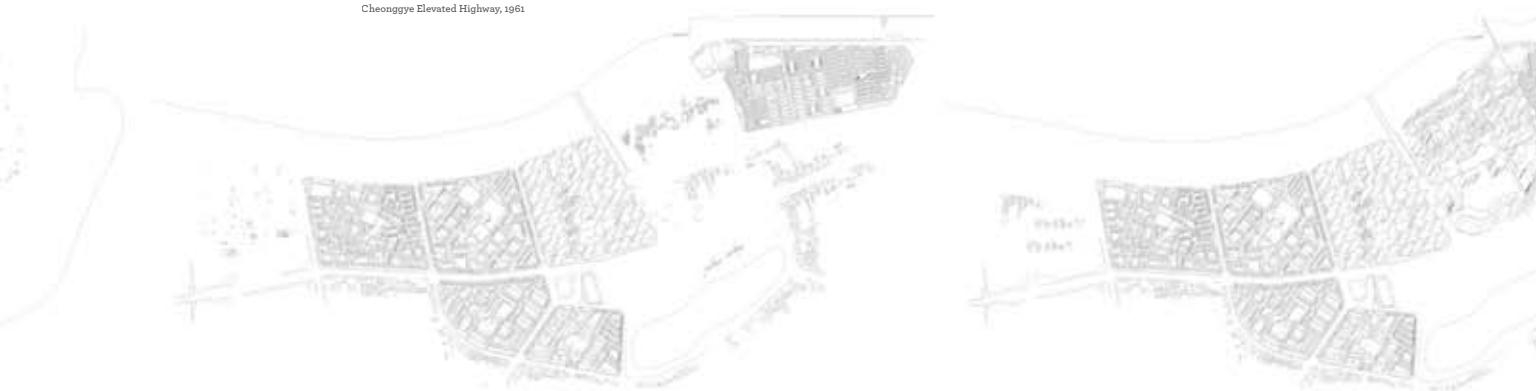
Campus Maritus Area, 1966

Seoul Stadium, 1968

Sewoon (World Power) Commercial and Residential Complex, 1968



Cheonggye Elevated Highway, 1961



Patterns of Progress 1900–2010, part of a wall drawing, 20 x 8 ft.

Saemaeul ("New Village") and Jamsil Public Housing Development Zone ("High Rise" and "City Run" complete), 1971

Jamsil Housing Development District ("Rose," "Pearl," and "Beautiful Star" complete), 1980

1960

1970

Excise City

Nahyun Hwang, 2010–2011 William Muschenheim Fellow

Paradise Valley with New Brewster Homes, 1994

Tiger Stadium closed, 1999

Campus Marti

Excise City is an on-going research project that investigates the agency of destruction in the process of generation and transformation of the city. Rather than dismissing it as an unavoidable byproduct consequential to the goals of creation and progress, *Excise City* examines aspects of removal as the cultural and political processes consistently deployed and appropriated by various ideas and desires, and explores its functions as an architectural mechanism actively shaping both the ideological and physical forms of the city. The project presents selected documentation and analysis from the research conducted on the conditions of two comparably sized cities—Detroit, Michigan and Seoul, Korea—in four sets. While the two cities are usually rendered in seemingly disparate conditions, the material included highlights the urbanism prevailing in both cities that is aggressively driven by the simultaneously destructive and generative processes of selective demolition and reconstruction, namely Excise Urbanism.

The project summary for *Excise City* is replicated from the wall text for the 2011 spring exhibition of the same title held at the Taubman College Gallery, where the research and analysis material thus far was presented in four sets:

Patterns of Progress—a building/block scale investigation and documentation;
Ideologies of Rebuilding—a case study of the relationships between the political use of "rebuilding" narratives and destruction;
Excise and Refresh!—a study on the relevant popular media and commercial propaganda; and
Excise City Forms—urban/regional scaled, three dimensional time-based diagrams based on the demolition statistics of the past 40 years.

Cheonggyecheon Park and Culture Belt, 2002

Jamsil Housing Redevelopment District ("Treejeum", "Else" complete), 2004

Jamsil Housing Redevelopment District ("Park Rio" complete), 2008

1980 1990 2000

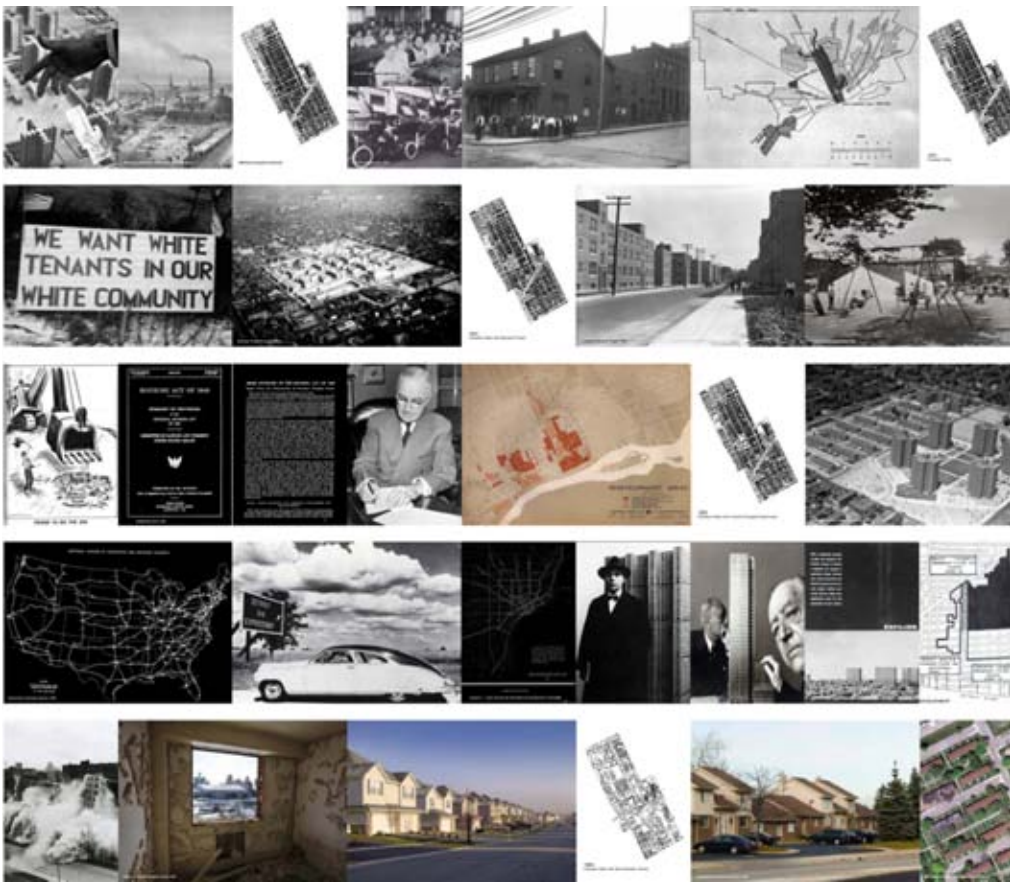
Patterns of Progress

Patterns of Progress describes the progress—and implicit destruction—in nine sites in Detroit and Seoul in a diasynchronic visual framework, analyzing four (Seoul) and three (Detroit) redevelopment areas in the city centers and one typical residential area in each city. Each "progressive" construct executed through destruction is highlighted as points of correlation, while common and distinctive chronological, methodological, and typological patterns of the progressive mechanisms of the respective cities emerge. Whereas the drawings were constructed from the historical maps and photographs of the actual sites, the common program types identified in both cities, such as city halls, stadiums, and expressways, are recognizable as universal components of any city that symbolize civic, popular, and infrastructural progress.

Ideologies of Rebuilding

Using the stories of the selected sites from Patterns of Progress, Ideologies of Rebuilding aims to highlight the various ideological operations in the act of rebuilding and unbuilding. Chronologically arranged but manipulable by the reader, the document utilizes and at the same time challenges the linear, pseudo-historical

Right:
Ideologies of Rebuilding
("Paradise Valley," excerpts from one of the six volume fold-out books)



construct often deployed in rebuilding or renewal campaigns, mixing in the counter narratives of the alternative ideologies that rebuilding activities excise. In most cases, the symbolism or propaganda appealing to the ideology that justifies removal of the existing space precedes the illustration of rebuilt space, which is followed by new behaviors that transform the function of the rebuilt space as intended by the rebuilder. The process repeats; various aspects of the given space—typology, form, builder, style, etcetera—go through a series of abstractions that advocate another round of unbuilding.

Excise and Refresh

Excise and Refresh is a compilation of various formats of moving and still commercials and promotional material, which directly and indirectly engage the general public as consumers in the process of the removal and destruction of space. The promises of improved "lifestyle" further stimulate mid-income families' apt relocation within Seoul's self-perpetuating wealth generation mechanisms, i.e. housing redevelopment and rebuilding. The promotion of ruin, abandonment, and demolition porn in the context of Detroit precludes the consideration of the alternatives.

Left:
Excise and Refresh!
(part, still excerpts from single channel video projection)

Opposite right:
Excise City Forms
(part, still excerpts
from 4 channel video)

Excise City Forms

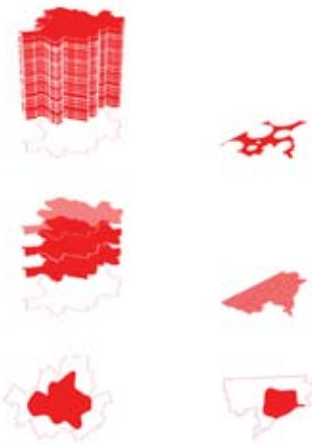
Based on numeric data and related analyses, Excise City Forms investigates the dynamisms and the impact of the renewal technique of destruction and demolition on the development and transformation of the city form. Origins of the City, Restriction and Facility, and Topographies of Progress explore the relationships between the morphological/operational origins of each city, overarching natural and industrial geography, and the general directionality in the city's growth. Crush-n-Grow/Urban Molting investigates the link between the actual and perceived building typologies, and demolition and abandonment as the operational modes of expansion. Zones of Renewal illustrates the ubiquitous dispersal of the renewal or rebuilding "zones" in both cities and the uncertain definition and processes of delineation, as well as dual implications of the zones, i.e. demolition and construction, divestment and investment. Demolition Curves/ Density Desires investigates the relationships between the quantity of demolition and the desired density and examines the instrument of demolition as a mechanism that pursues and at the same time regulates the density desires.

Video 1:
Origins of the City, Restriction and Facility, and Topographies of Progress

Incorporated materials include:

(Seoul)
HanYang Dosung Do (map of wall-surrounded Seoul), 1770
Mountainous area of Seoul and corresponding municipal greenbelt of 1971 to 2010
Approximate locations of nine bridges on Han River built between 1975 and 1990 (currently 28 total)

(Detroit)
Plan of Private Claims in Michigan Territory as Surveyed by Aaron Greely, 1810
Industrial Corridor as shown in Master Plan Studies, Detroit City Plan Commission, 1944
Detroit expressways constructed during 1950s and 1960s

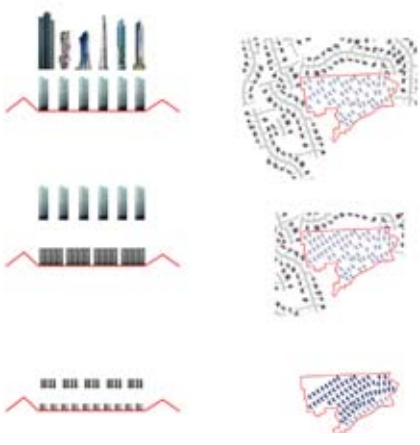


Video 2:
Demolition Curves/Density Desires

Between 1970 and 2010, Seoul demolished its buildable residential area four times. Total number of Residential Demolition Permits during the period is 994,742. Total number of Residential Construction Permits is 2,469,652. Number of total households to be demolished in 2011 as projected by City of Seoul is 66,900, about 1.9 times that of 2010. Between 1970 and 2010, Detroit demolished approximately 15% of its buildable area. Total Number of Residential Demolition Permits during the period is 178,761. Total Number of Residential Construction Permits is 26,067. Number of total households to be demolished in 2011 as targeted by City of Detroit is 3,000, similar to the goals of 2010 and 2012.

The total area of Seoul is 233.688 sq. mi.; Detroit's total area is 138.8 sq. mi. The current population density is 44,776 person per sq. mi. and 5,142 person per sq. mi., respectively. To match Detroit's density, Seoul's entire area including the river and mountains needs a floor-to-area ratio of 9. To match Seoul's density, Detroit needs to reduce its habitable land size to 11% of its current size. To match its own density from 1950 (13,249 person per sq. mi.), Detroit needs to reduce its habitable land size to 38% of its current size.

In a more realistic scenario, Seoul demolishes and builds beyond (and below) desired (low) density, due to symbolic and typological functions of its reproductive mechanism. In an optimistic scenario, Detroit's attempt to achieve the right density is rewarded with an only mildly dense but noble urban form, which has unknown potentials.



Video 3:
Crush-n-Grow/Urban Molting

Housing types shown include:

(Seoul)
Dan Dok Ju Taek ("Private House," one- or two-story single family houses)
Yeon Lib Ju Taek ("Row House," four-story multi-family houses)
O Chung Apartment ("5 Story Apartment Buildings")
Ko Chung Apartment ("High-rise Apartment Buildings")
Cho Ko Chung Ju Sang Bok Hab ("Super Tall Commercial-Residential Complex." Samples include Tower Plaza, S-Trenue Tower, Lotte World Super Tower, etcetera)

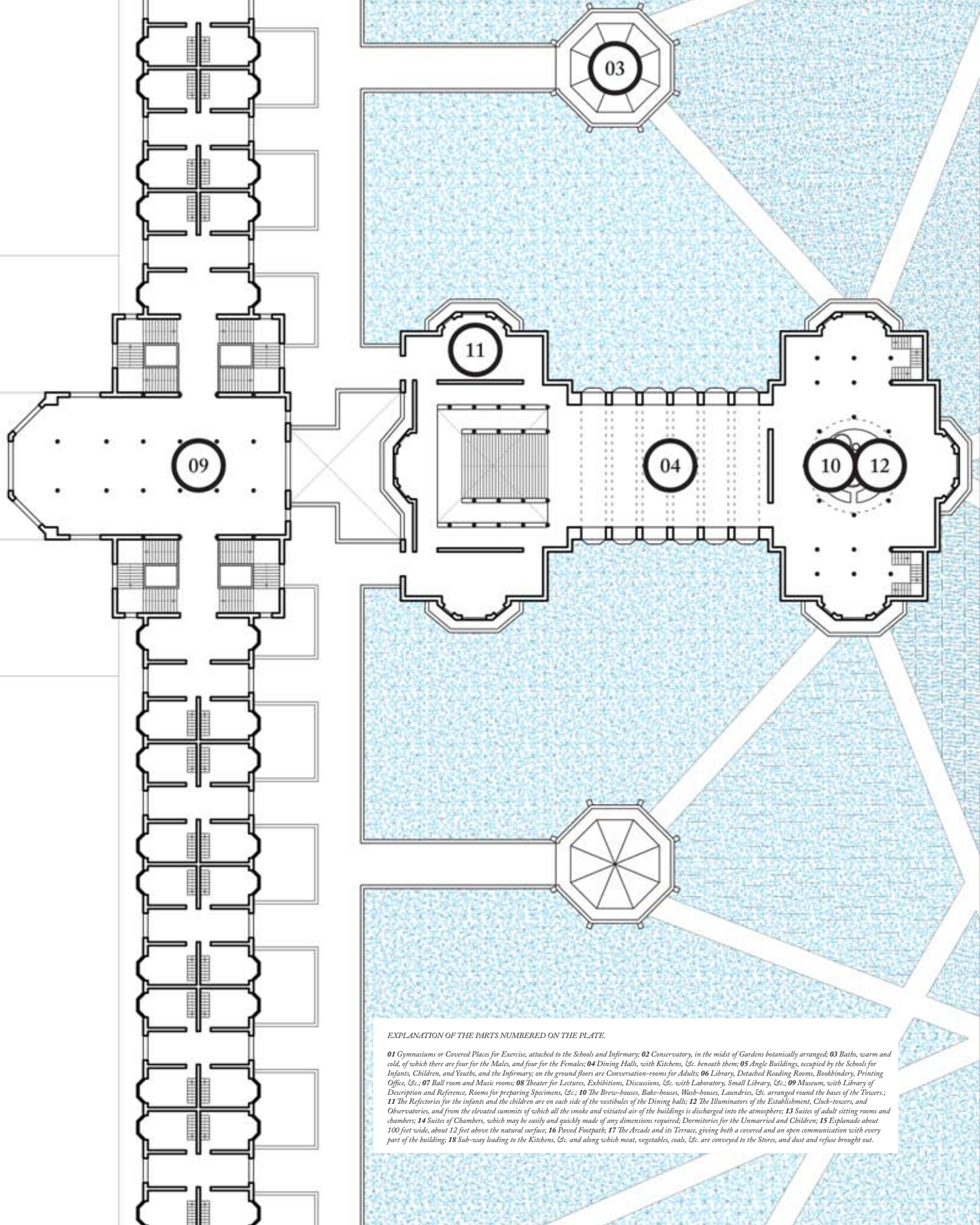
(Detroit)
Two-story single family home (sampled near Leland and McDougall Street in Detroit)
A subdivision (sampled from a section in Troy, MI)

Video 4:
Zones of Renewal

Indicated zones include:

(Seoul)
Balanced Progress Stimulus District 1
Balanced Progress Stimulus District 2
Residential Redevelopment Projects Area
Pending Residential Redevelopment Projects Area
Residential Reconstruction Projects Area
Pending Residential Reconstruction Projects Area
"New Town" Area 1 (test area)
"New Town" Area 2
"New Town" Area 3

(Detroit)
Empowerment Zones
Community Foundation for Southeast Michigan Target Area
Skillman Good Neighborhoods
Next Detroit Neighborhood Initiative
Local Initiatives Support Corporation Strategic Investment Areas
Neighborhood Stabilization Program 2 Target Areas
Neighborhood Stabilization Program 1 Target Areas
Residential Demolition Orders (Emergency and Nonemergency) by City of Detroit
Foreclosed and vacant homes as cataloged by Detroit Residential Parcel Survey

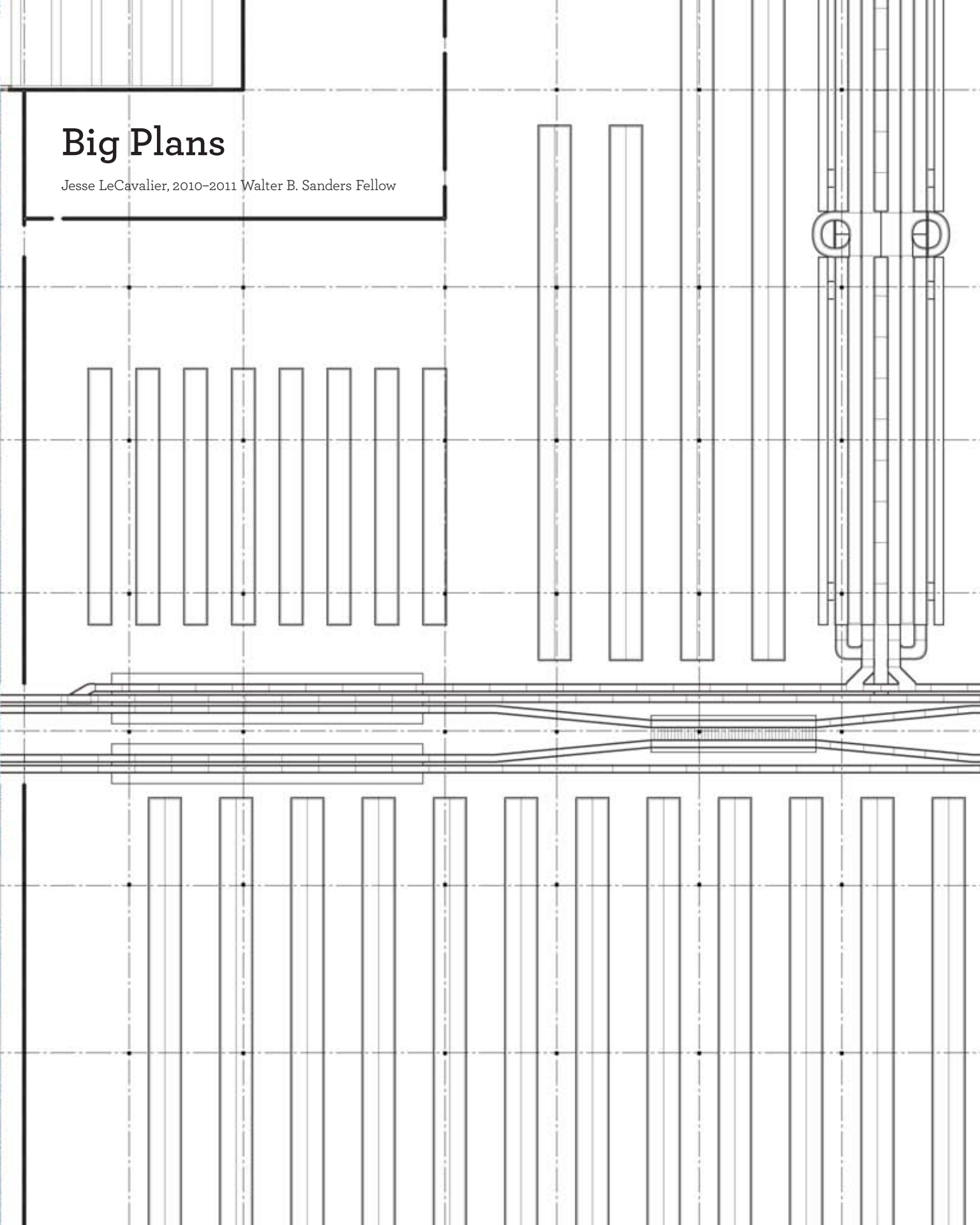


EXPLANATION OF THE PARTS NUMBERED ON THE PLATE.

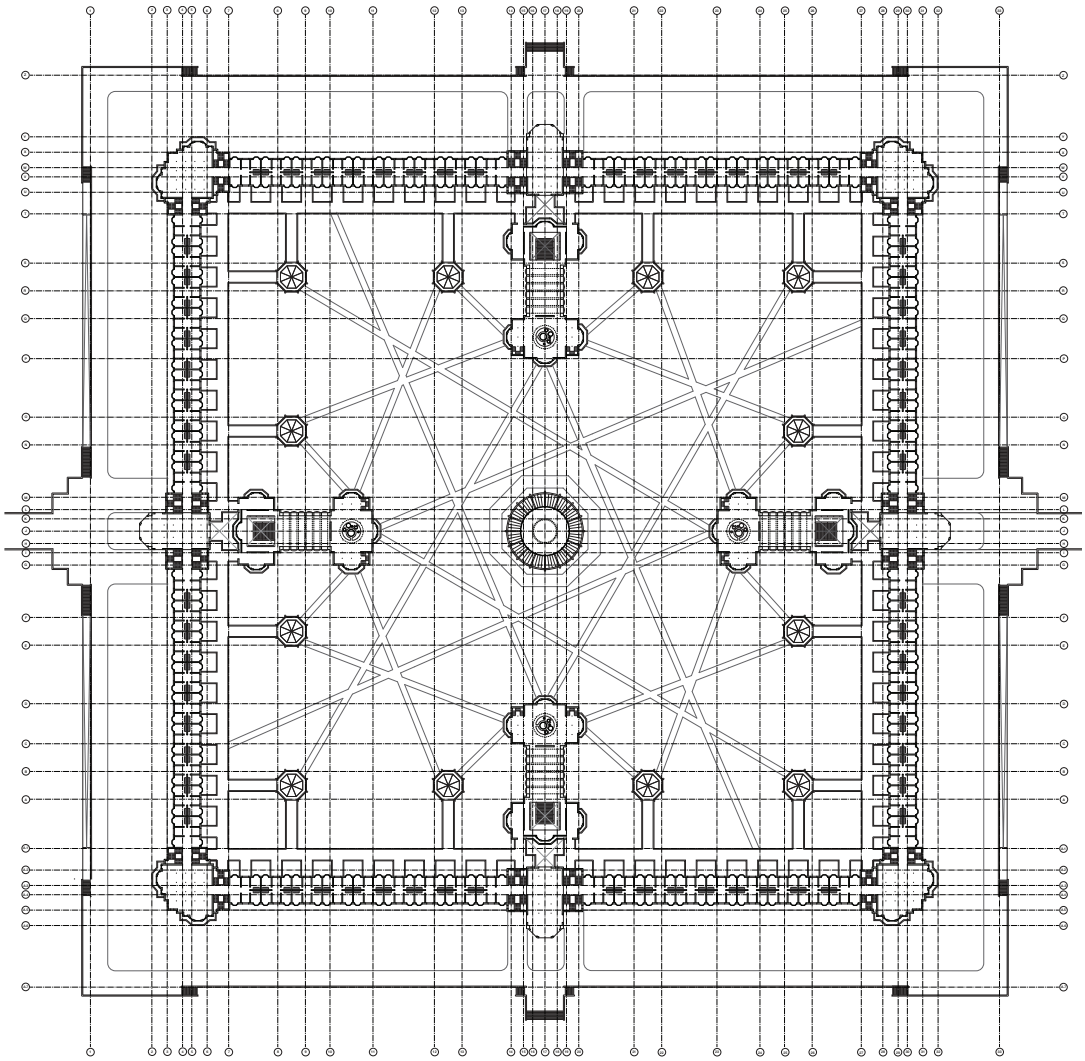
***01** Gymnasiums or Covered Places for Exercise, attached to the Schools and Infirmary; **02** Conservatory, in the midst of Gardens botanically arranged; **03** Baths, warm and cold, of which there are four for the Males, and four for the Females; **04** Dining Halls, with Kitchens, &c. beneath them; **05** Angle Buildings, occupied by the Schools for Infants, Children, and Youths, and the Infirmary; on the ground floors are Conversation-rooms for Adults; **06** Library, Detached Reading Rooms, Bookbindery, Printing Office, &c.; **07** Ball room and Music rooms; **08** Theater for Lectures, Exhibitions, Discussions, &c. with Laboratory, Small Library, &c.; **09** Museum, with Library of Description and Reference, Rooms for preparing Specimens, &c.; **10** The Brew-houses, Bake-houses, Wash-houses, Laundries, &c. arranged round the bases of the Towers.; **11** The Refectories for the infants and the children are on each side of the vestibules of the Dining halls; **12** The Illuminators of the Establishment, Clock-towers, and Observatories, and from the elevated summits of which all the smoke and vitiated air of the buildings is discharged into the atmosphere; **13** Suites of adult sitting rooms and chambers; **14** Suites of Chambers, which may be easily and quickly made of any dimensions required; Dormitories for the Unmarried and Children; **15** Esplanade about 100 feet wide, about 12 feet above the natural surface; **16** Paved Footpath; **17** The Arcade and its Terrace, giving both a covered and an open communication with every part of the building; **18** Sub-way leading to the Kitchens, &c. and along which meat, vegetables, coals, &c. are conveyed to the Stores, and dust and refuse brought out.*

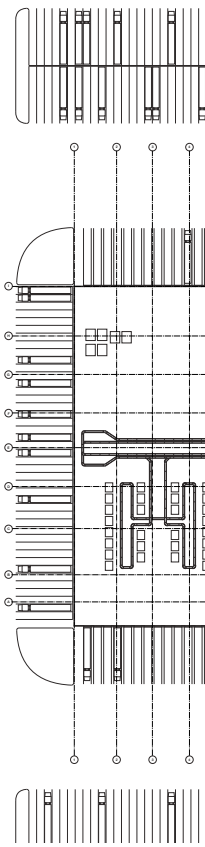
Big Plans

Jesse LeCavalier, 2010–2011 Walter B. Sanders Fellow



The title of this research project reflects both the content of the exhibition (large drawings) and the ambitions of the characters it documents (to transform the world). More specifically, the project is a comparison of the architecture of Robert Owen's New Harmony and Sam Walton's Walmart Stores, Inc. In both cases, architecture is understood as a prototypical condition designed for deployment and connected through sophisticated logistics networks. Owen's proposal for New Harmony was never built and the primary remaining description of it is an aerial view of





the proposal drawn in 1830. With a copy of this drawing and with the detailed descriptions of the project by its architect, Stedman Whitwell, a possible plan of the New Harmony settlement was designed.

Likewise, the distribution center is the lynchpin of Walmart's logistics network but its workings are only accessible through fragments. Developing the plan of the center was a process of design that used available information to produce a large drawing of the building's organization. It happens that both of these buildings are roughly 1 million square feet and the comparison to each other—and to a regular Walmart supercenter—helps to convey both their vastness and their machinic qualities. The third set of big plans is an enlarged fixture plan of a typical Walmart prototype. These drawings give way to designed elements that exist between the realms' building and furniture and suggest ways to inhabit such large undifferentiated spaces as they become increasingly common. In general, the comparison of the two projects helps to get over certain ideas of what utopia is so that we might discover what it could yet be.

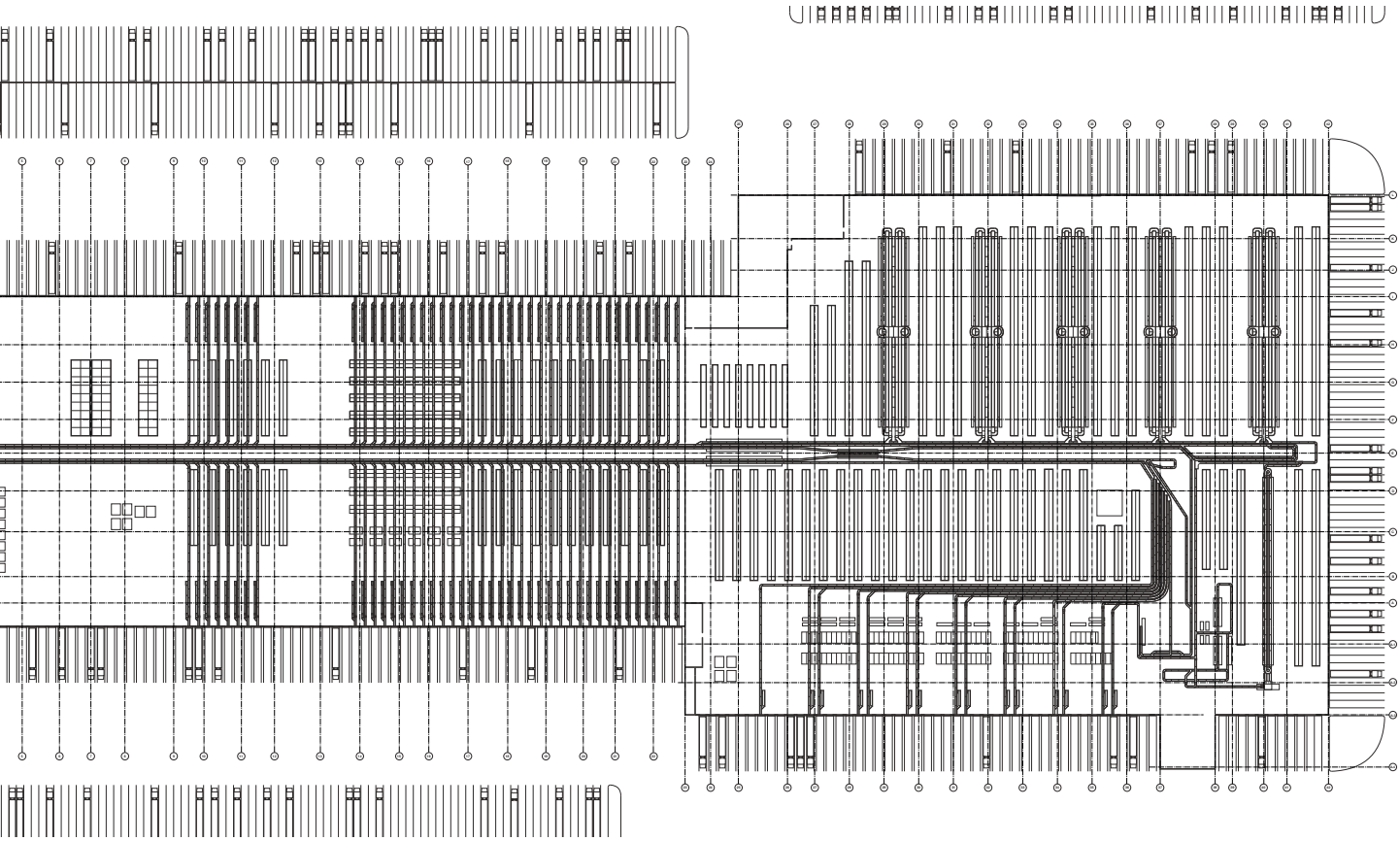
Previous page, left:
New Harmony Prototype, reconstructed plan, detail scale: 1 in. = 40 ft.

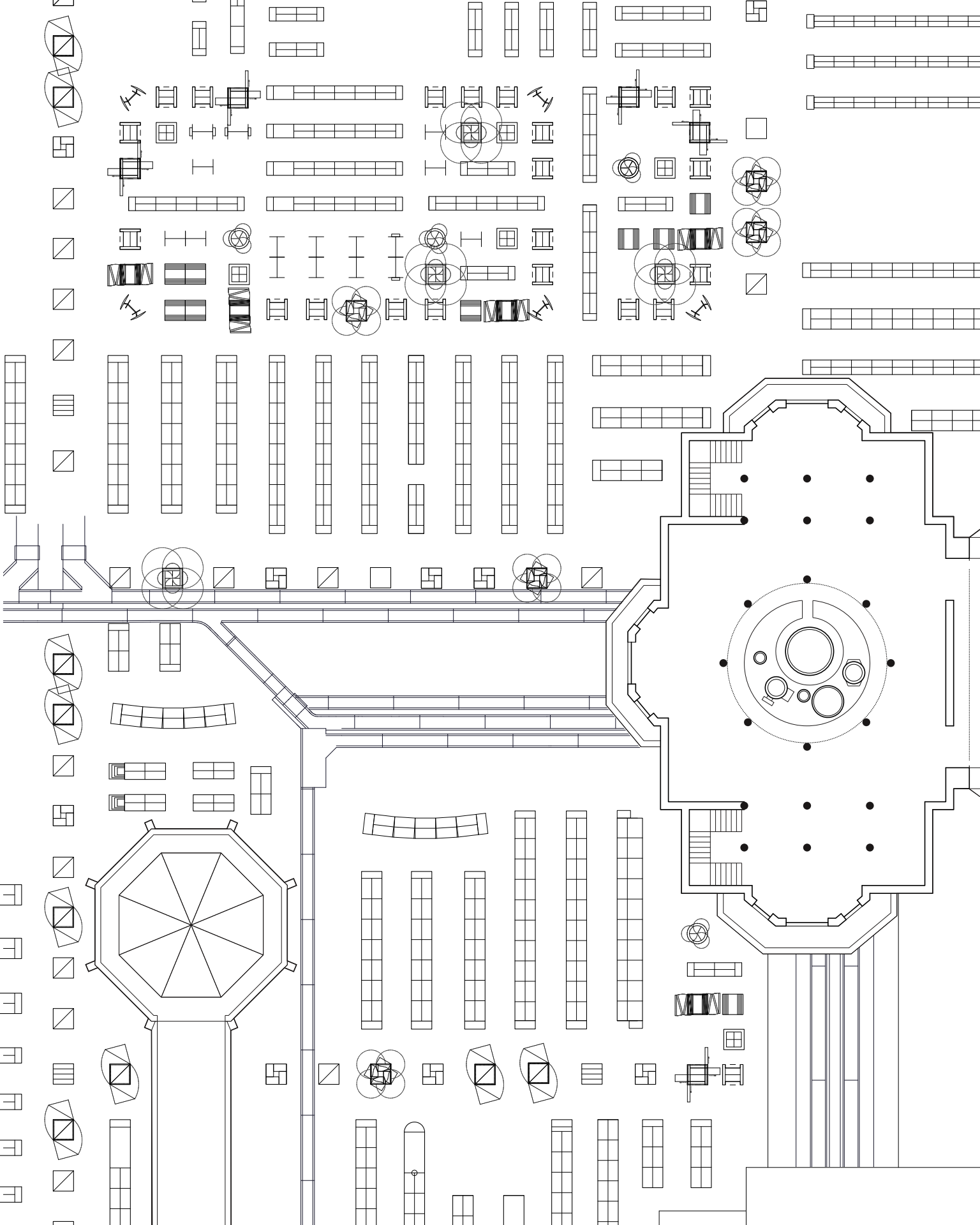
Previous page, right:
Walmart Distribution Center, reconstructed plan, detail scale: 1 in. = 40 ft.

Opposite top:
Walmart Supercenter Prototype 143, plan scale: 1 in. = 250 ft.

Opposite bottom:
New Harmony Prototype, reconstructed plan, scale: 1 in. = 250 ft.

Below:
Walmart Distribution Center, reconstructed plan, scale: 1 in. = 250 ft.



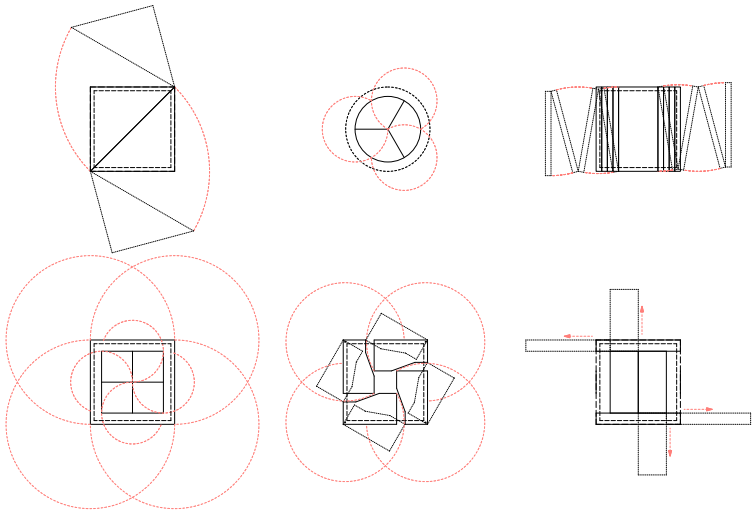


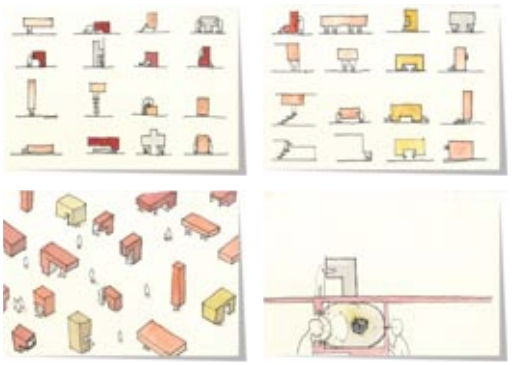
Opposite:
Speculative plan for Prototopia, using elements from New Harmony Prototype, Walamart Distribution Center, and Supercenter Prototype 143. Detail scale: 1 in. = 40 ft.

Photographs from left to right: Prototopia, model detail including spatial elements based on fixture plan of Supercenter 143; installation view of prototopia model and enlarged fixture plans of Supercenter 143; and installation view of comparative plan drawings and supporting graphic material

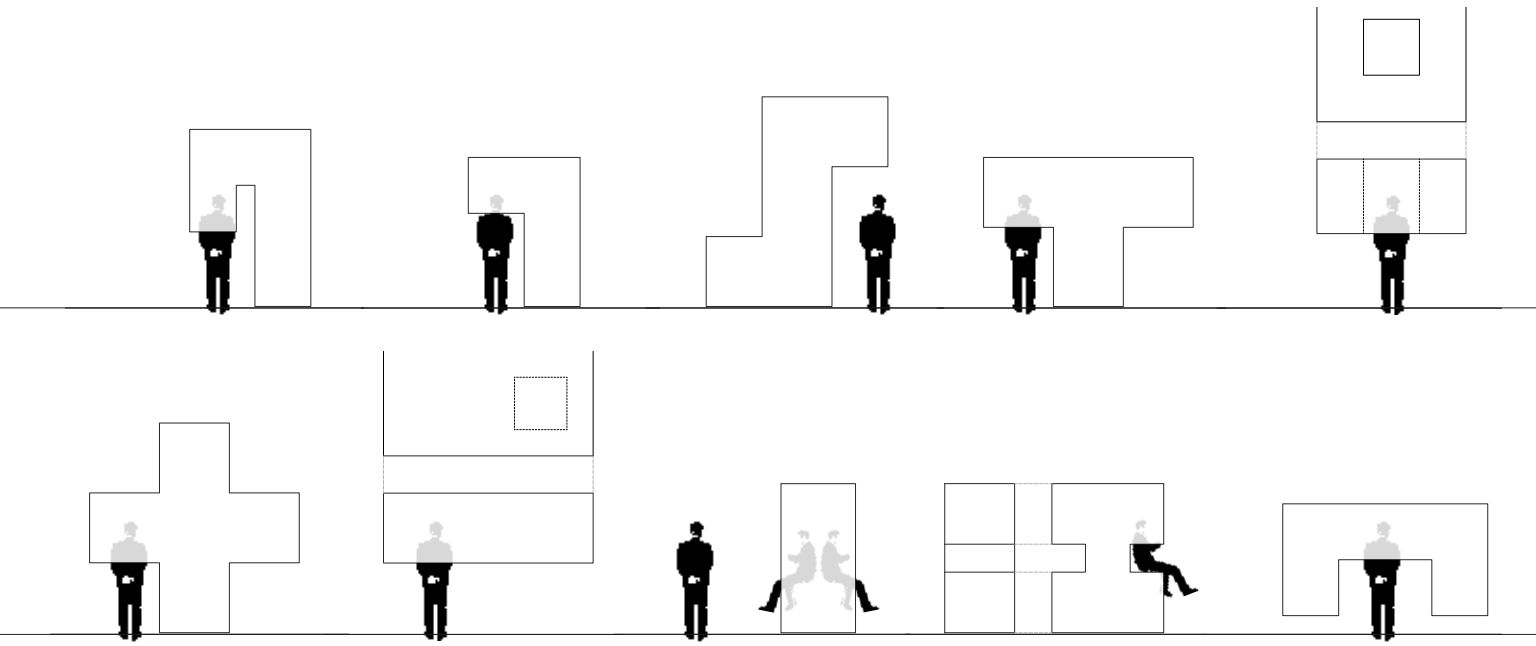
Below left:
Plans of spatial elements indicating possibilities for transformation

Below right:
Studies for inhabitation and deployment of spatial elements





Below:
Preparation drawings for prototopia model



COLLABORATION CONVERSATION CONTENT

—

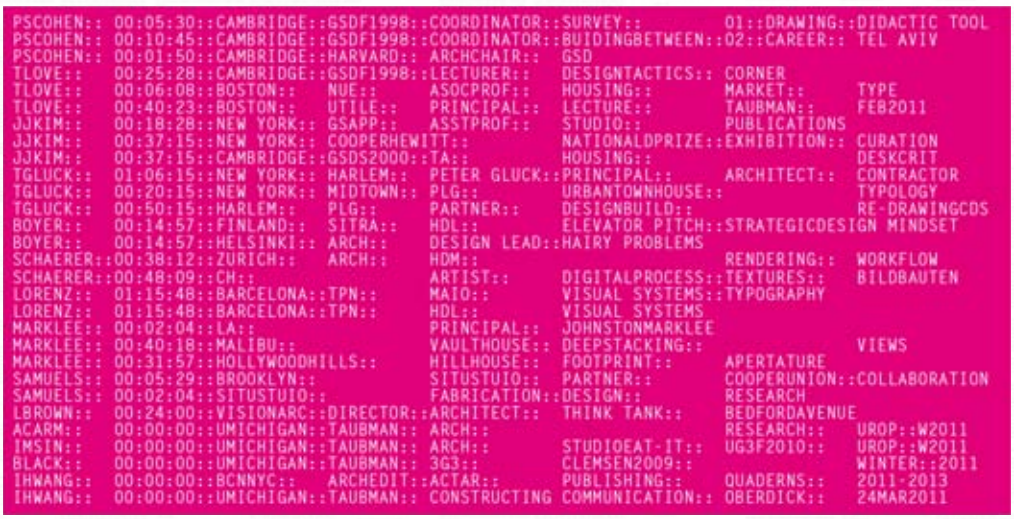
We Are Constructing Communication

—

Constructing Communication

Irene Hwang, 2010–2011 Willard A. Oberdick Fellow

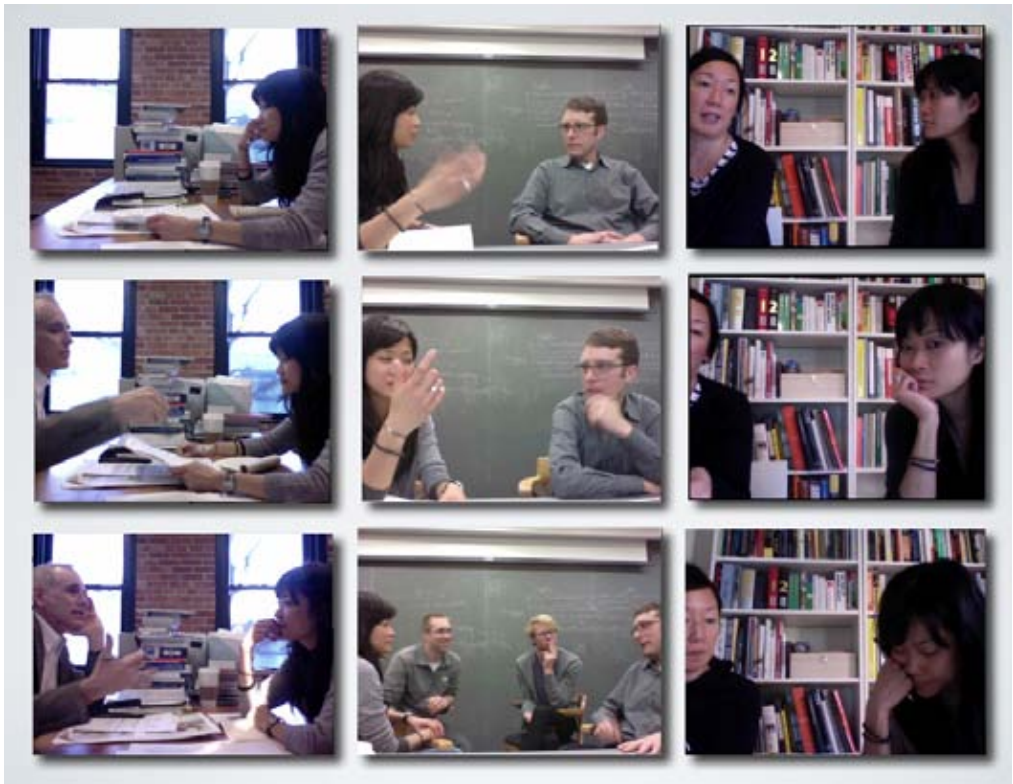
Architects are accustomed to dealing with space and matter. From our first Lego to our most recent built project, we are involved in a longstanding love affair with buildings. Yet, the making of the discipline is not the result of bricks and mortar alone: It is the sum total of both material and non-material elements that are of equal importance. While we intuitively understand that relationships, alliances, and opinions hold a position of tremendous influence in the making of our discipline, little inquiry has been conducted into how architects actually influence the design of these elements within the architectural delivery process. Understanding, tracking, and constructing the economics or landscape of these non-material architectural products, *Constructing Communication* has two concurrent objectives: first, to study how architects communicate with each other and exchange information; and second, to design new processes and products that extract and capture the knowledge generated through the exchange. As architects, we are at once artists and professionals; we are beholden to the dual responsibilities of advancing the critical and intellectual project of discourse, as well as addressing the spatial and material problems of the world at large. Governed by the theme of "Engagement Has Consequences," *Constructing Communication* examines how architects engage the public and each other in the construction of architectural knowledge. While our expertise is often valued for its ability to address recurrent topics, the growth of the discipline rarely benefits from repetition and boilerplate production. Motivated by the possibilities of re-making, re-thinking, and re-imagining, *Constructing Communication* is structured as a recombinant approach toward architectural research.



Initial collaboration matrix

Constructing Communication, Fellows Exhibition, Taubman College Gallery, University of Michigan, March 2011

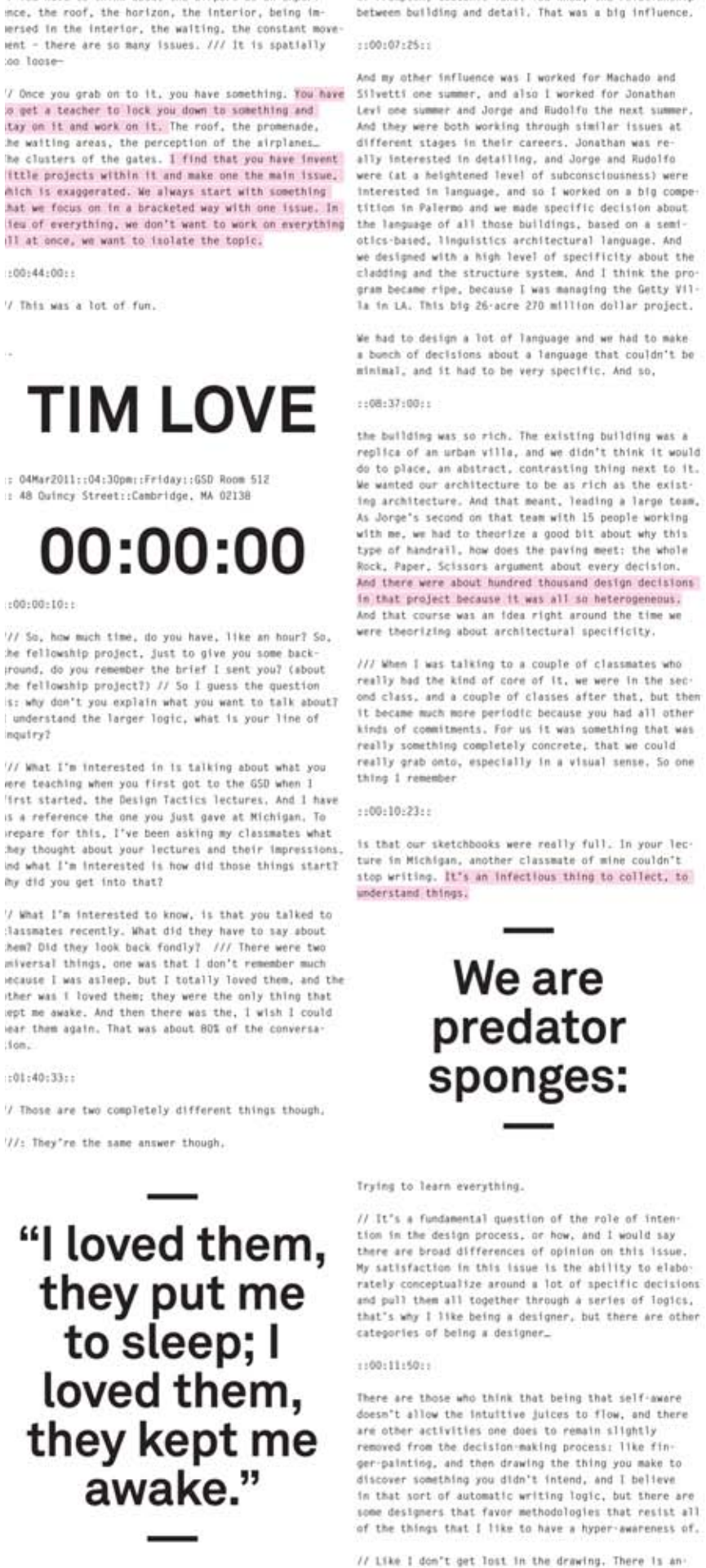
Interviews:
Column 1: Preston Scott Cohen
Column 2: Tim Love
Column 3: Jeannie Kim



So far consisting of five distinct projects (two of which, the Spreadsheet and Lexicon Projects are not featured here), each phase of this long term project demonstrates a dedication to making; it is only through the design and execution of the research that the unrecognized narratives and processes that form the content of the research become evident and accessible.

Engaging Learning: The Autobiography Project

The Autobiography Project tells the story of learning as a means to influence teaching. Instead of writing through first-person recollections, the narrative of the autobiography was constructed through three separate interviews organized around distinct curricular topics from my own early architectural education: the studio brief (Scott Cohen, First Year Core Studio, Fall 1998); the introductory design seminar (Tim Love, Design Tactics Seminar, Fall 1998); and the desk crit (Jeannie Kim, Studio TA, Spring 2000). The resultant "autobiography" delivered insight not only into the formation of pedagogy at the local and institutional level, but also revealed new connections and influences between the parallel concerns of the educator and education.



nce, the roof, the horizon, the interior, being im-
ersed in the interior, the waiting, the constant move-
ent - there are so many issues. /// It is spatially
oo loose—

/ Once you grab on to it, you have something. You have
o get a teacher to lock you down to something and
tay on it and work on it. The roof, the promenade,
he waiting areas, the perception of the airplanes…
he clusters of the gates. I find that you have invent
ittle projects within it and make one the main issue,
hich is exaggerated. We always start with something
hat we focus on in a bracketed way with one issue. In
ieu of everything, we don't want to work on everything
ll at once, we want to isolate the topic.

::00:44:00::

/ This was a lot of fun.

TIM LOVE

: 04Mar2011::04:30pm::Friday::GSD Room 512
: 48 Quincy Street::Cambridge, MA 02138

00:00:00

::00:00:10::

// So, how much time, do you have, like an hour? So,
he fellowship project, just to give you some back-
ground, do you remember the brief I sent you? (about
he fellowship project?) // So I guess the question
s: why don't you explain what you want to talk about?
understand the larger logic, what is your line of
nquiry?

// What I'm interested in is talking about what you
ere teaching when you first got to the GSD when I
irst started, the Design Tactics lectures. And I have
s a reference the one you just gave at Michigan. To
repare for this, I've been asking my classmates what
hey thought about your lectures and their impressions,
nd what I'm interested is how did those things start?
hy did you get into that?

/ What I'm interested to know, is that you talked to
lassmates recently. What did they have to say about
hem? Did they look back fondly? /// There were two
niversal things, one was that I don't remember much
ecause I was asleep, but I totally loved them, and the
ther was I loved them; they were the only thing that
ept me awake. And then there was the, I wish I could
ear them again. That was about 80% of the conversa-
ion.

::01:40:33::

/ Those are two completely different things though.

//: They're the same answer though.

"I loved them, they put me to sleep; I loved them, they kept me awake."

between building and detail. That was a big influence.

::00:07:25::

And my other influence was I worked for Machado and Silvetti one summer, and also I worked for Jonathan Levi one summer and Jorge and Rudolfo the next summer. And they were both working through similar issues at different stages in their careers. Jonathan was really interested in detailing, and Jorge and Rudolfo were (at a heightened level of subconsciousness) were interested in language, and so I worked on a big competition in Palermo and we made specific decision about the language of all those buildings, based on a semiotics-based, linguistics architectural language. And we designed with a high level of specificity about the cladding and the structure system. And I think the program became ripe, because I was managing the Getty Villa in LA. This big 26-acre 270 million dollar project.

We had to design a lot of language and we had to make a bunch of decisions about a language that couldn't be minimal, and it had to be very specific. And so,

::00:37:00::

the building was so rich. The existing building was a replica of an urban villa, and we didn't think it would do to place, an abstract, contrasting thing next to it. We wanted our architecture to be as rich as the existing architecture. And that meant, leading a large team. As Jorge's second on that team with 15 people working with me, we had to theorize a good bit about why this type of handrail, how does the paving meet: the whole Rock, Paper, Scissors argument about every decision. And there were about hundred thousand design decisions in that project because it was all so heterogeneous. And that course was an idea right around the time we were theorizing about architectural specificity.

/// When I was talking to a couple of classmates who really had the kind of core of it, we were in the second class, and a couple of classes after that, but then it became much more periodic because you had all other kinds of commitments. For us it was something that was really something completely concrete, that we could really grab onto, especially in a visual sense. So one thing I remember

::00:10:23::

is that our sketchbooks were really full. In your lecture in Michigan, another classmate of mine couldn't stop writing. It's an infectious thing to collect, to understand things.

We are predator sponges:

Trying to learn everything.

// It's a fundamental question of the role of intention in the design process, or how, and I would say there are broad differences of opinion on this issue. My satisfaction in this issue is the ability to elaborately conceptualize around a lot of specific decisions and pull them all together through a series of logics, that's why I like being a designer, but there are other categories of being a designer…

::00:11:50::

There are those who think that being that self-aware doesn't allow the intuitive juices to flow, and there are other activities one does to remain slightly removed from the decision-making process: like finger-painting, and then drawing the thing you make to discover something you didn't intend, and I believe in that sort of automatic writing logic, but there are some designers that favor methodologies that resist all of the things that I like to have a hyper-awareness of.

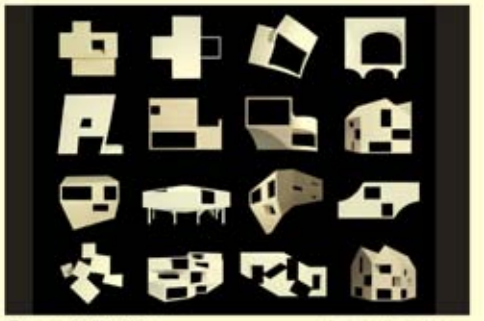
// Like I don't get lost in the drawing. There is an-

Opposite:
Stills. 24 hours and 10 miles of Bedford Avenue, NYC

Below and right:
Flyers. Selected posters from the first Small Talks series (ongoing)

Engaging Knowledge: The Small Talks Series

The Small Talks Series was designed as a "mash-up" between the more formal lecture and the unstructured chat. Because the resultant format combined the rigor of a lecture presentation with the informality of a face-to-face meeting, the Small Talks flattened the customary inequalities and hierarchies that characterize the relationships between the audience and speaker, practice and academia, and the institution and individual.



Small Talk
Friday, March 11
13:30,Saarinen Room,Taubman

Mark Lee, Principal, Johnston Marklee
Los Angeles, California, USA

In Conversation About Apertures, Collaboration, and 100 Architects in One Hotel.

Small Talk Series

Small Talk
Wednesday, February 23
11:30,Saarinen Room,Taubman

Small Talk
Thursday, February 24
11:30,Saarinen Room,Taubman

Small Talk
Thursday, March 10
11:30,Saarinen Room,Taubman

Martin Lorenz, Founding Partner, TwoPoints.Net
Barcelona, Spain

In Conversation About Graphic Design, Illustration, and Typography

Small Talk Series

Small Talk
Wednesday, March 16
11:30,Saarinen Room,Taubman

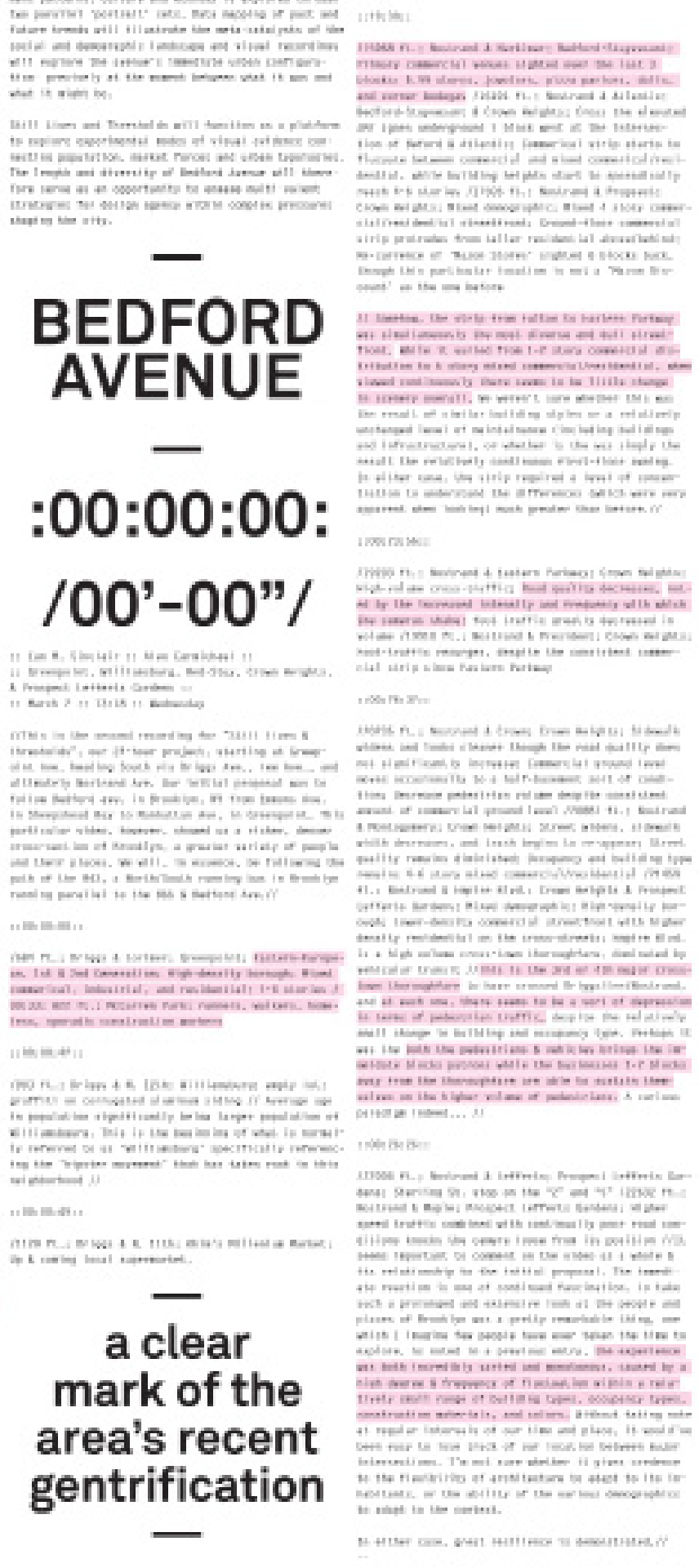
Brad Samuels,Partner, Situ Studio
DUMBO, Brooklyn, New York 11201

In Conversation About Digital Fabrication, Forensics, Archeology, and Brooklyn.

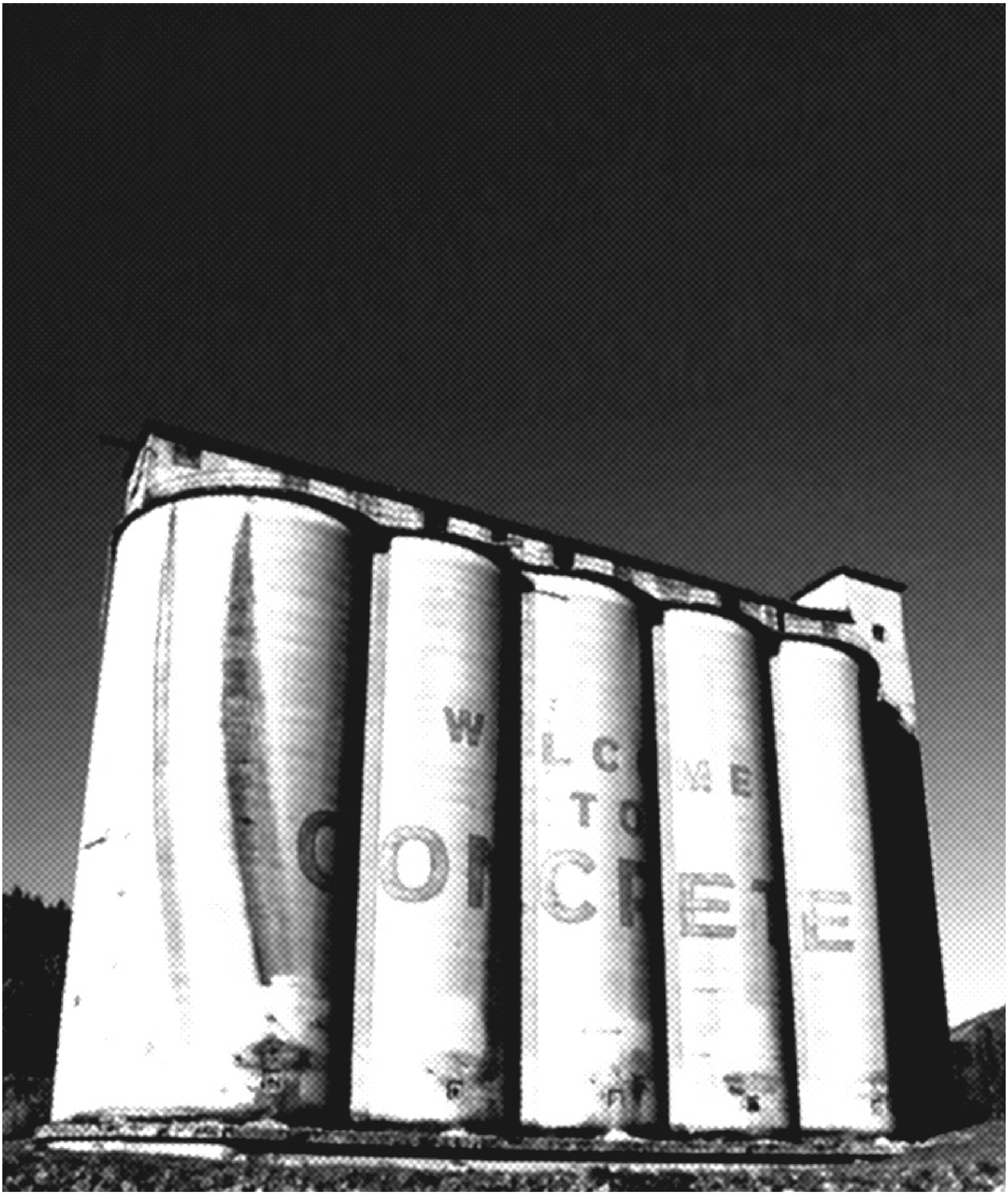
Small Talk Series

Engaging Methodology: The Charrette Project, Bedford Avenue

The Charrette transformed the acute pain of a familiar design practice into an intensive and highly collaborative weekend that generated two new metrics for measuring the space and experience of Bedford Avenue, New York City's longest street. Here, multiple participants and multiple viewpoints make research more "accurate." The project helped to investigate how we develop criteria in complex situations and also explored a question of metric: How do we measure space or experience?



Thesis Part Two


TO

Co-opting the Cloud

An Architectural Hack of Data Infrastructure

Ryan Donaghy | Thesis Advisors: McLain Clutter and Keith Mitnick

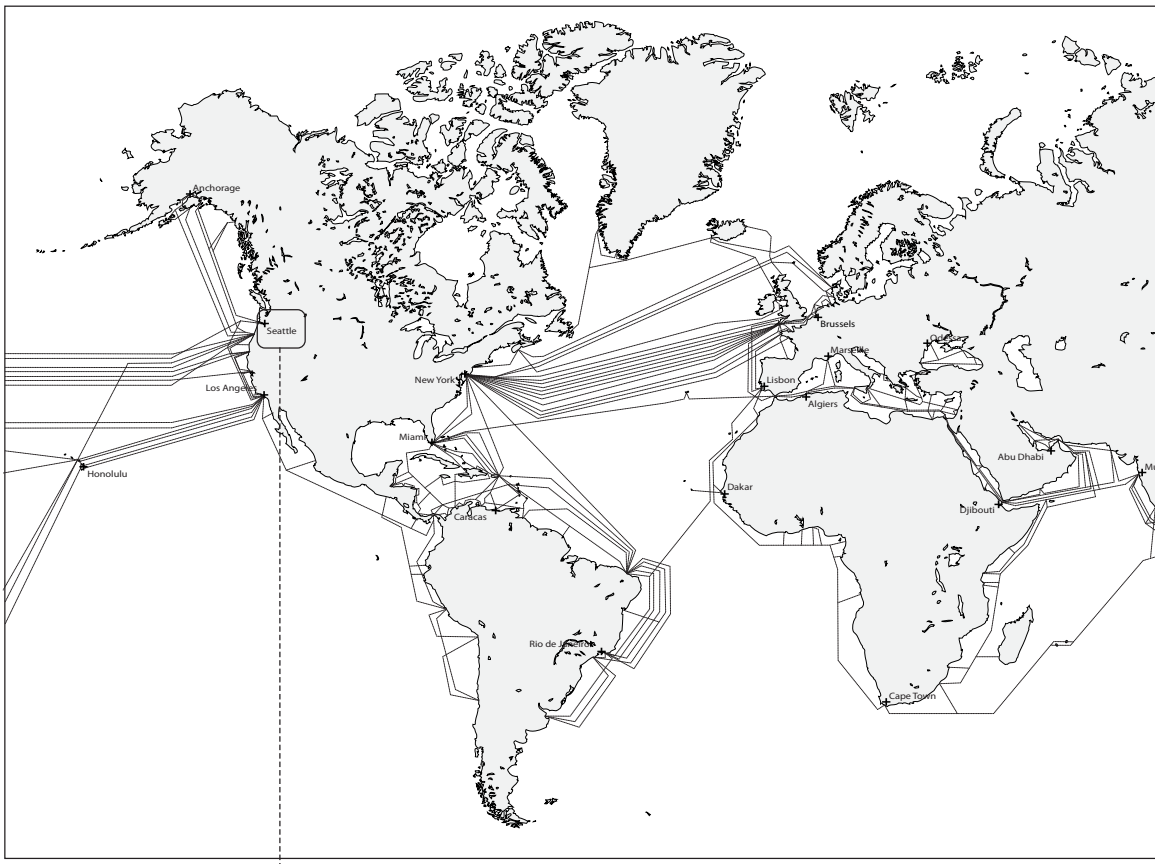
The proliferation of mobile computing platforms and an expanding cloud computing infrastructure has produced a vast, simulated landscape of social media that promises access to everything, anywhere, and subsequently redefines the role of place such that everywhere, in character, becomes nowhere. By challenging this perception of super-modernity's non-place, *Co-opting the Cloud* seeks to make legible the opportunistic spatial and technological overlaps between a physical social space and emerging information infrastructures.

Here the familiar social ground of the thermal bathhouse is deployed as a parasitic architecture within a computer server farm, utilizing the abundance of waste heat energy produced by data processing as a situated and tangible interface to the invisible and placeless quality of data flow. Programmatic adjacencies serve to reify an evolving culture of digital voyeurism while negotiating shifting spatial demands for tourism and data hosting.

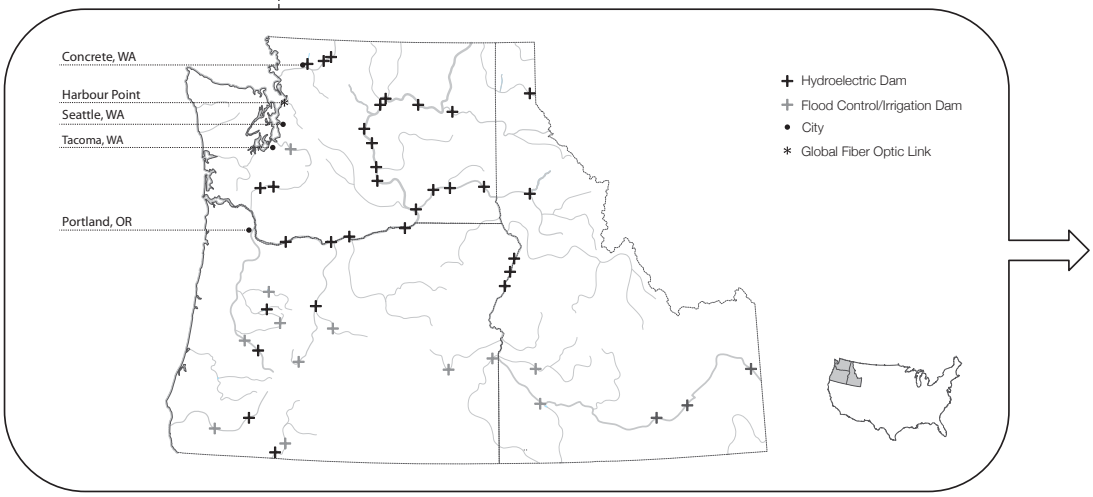
Co-Opting the Cloud proposes a continuous and scalable infrastructure that works to transform the digital, social exchange of data into a tangible resource for the construction of physical, social environments.

Site: Concrete, WA

The town of Concrete in northern Washington is home to about 800 residents and the Lower Baker Dam, one of the many dams in the region that generates electric power for the Seattle metropolitan area. The town takes its name from its previously dominant industry, the Superior Portland Cement Company, which produced much of the cement and concrete used in the construction of the extensive network of dams in the Pacific Northwest. The company has since retired its plant in Concrete, but has left behind massive concrete storage silos that sit on an abandoned site near the center of town. These silos serve as a monument to the town's industrial past, signifying its critical role in the construction of some of the early twentieth century's most crucial infrastructure.



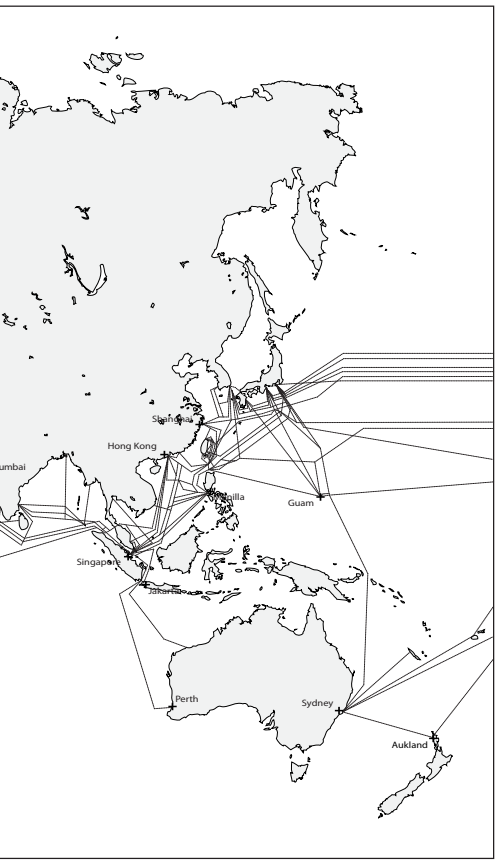
Submarine fiber optic cables



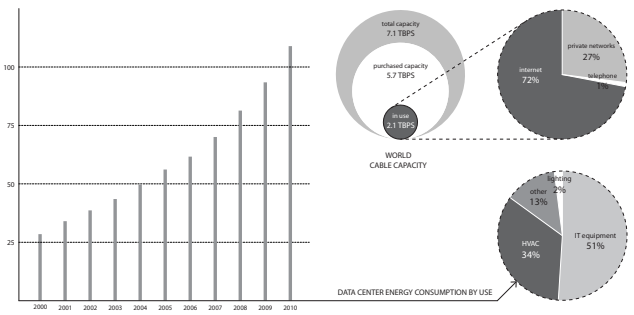
Dams in the Pacific Northwest

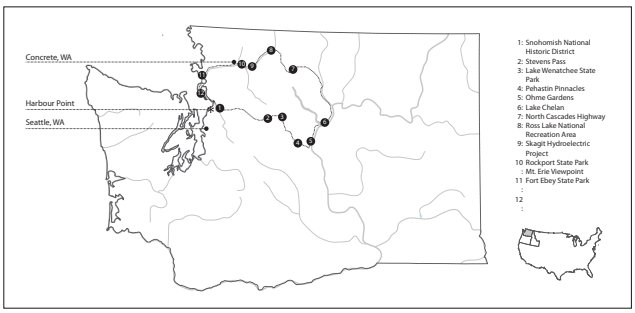
Opposite page, left:
Annual U.S. Data Center electricity usage (billion kwh)

Opposite page, right:
Cascade Loop Scenic Byway

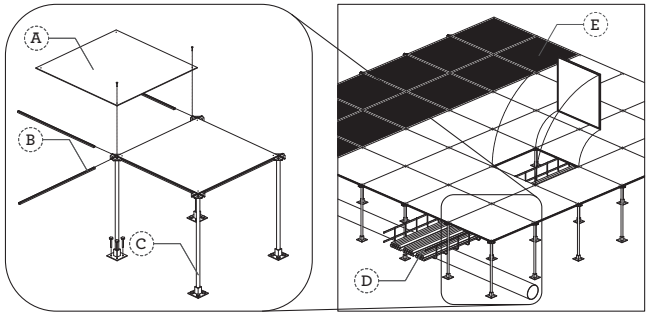


Reestablishing its role as a key infrastructural player, the site of the silos becomes the location for a node in the definitive, postindustrial infrastructure of the twenty-first century. Pragmatically, as the location for a new data center, this site provides access to abundant and cheap hydroelectric power produced by the lower Baker Dam, receives state funded tax incentives for companies providing new jobs to under-served rural communities, and is located within close proximity to the trans-Pacific fiber optic hub in Harbour Point. Further, its remote location along the scenic Cascade Loop Byway helps to position the data center and thermal baths as a destination for travelers. The project fetishizes the decaying infrastructure of the past while addressing the expanding infrastructures of the present—satiating contemporary nostalgia for an era of perceived authenticity, while simultaneously satisfying the immediate and synthetic needs of a media culture.

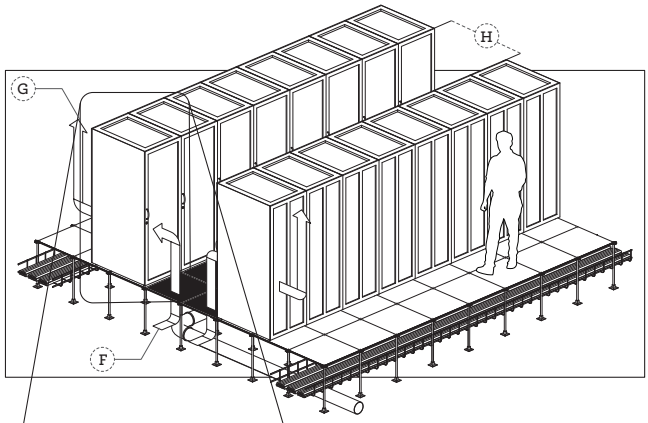




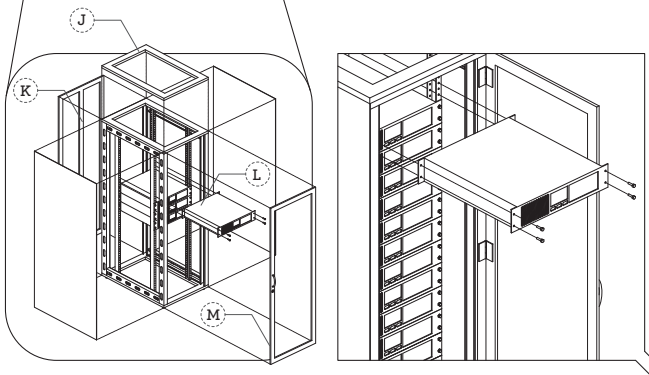
Storage
A: Removable floor tile
B: Lateral floor strut
C: Plenum post
D: Sub-floor data and electrical conduit
E: Perforated floor tile



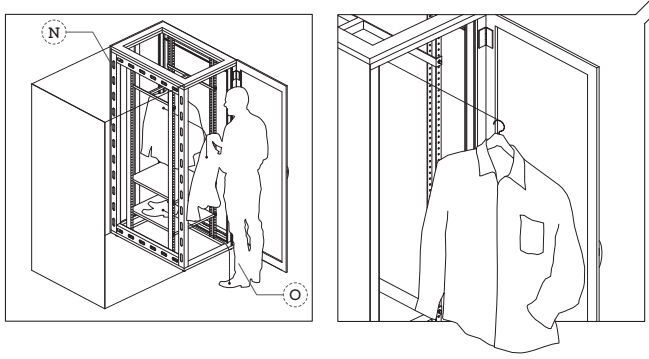
F: Cold air flow through perforated floor tiles
G: Hot air exhaust from server rack
H: "Cold aisle"
I: Data center employee



J: Perforated top panel
K: Perforated rear panel
L: Computer server
M: Perforated door panel



N: Server storage rack
O: Bathhouse guest

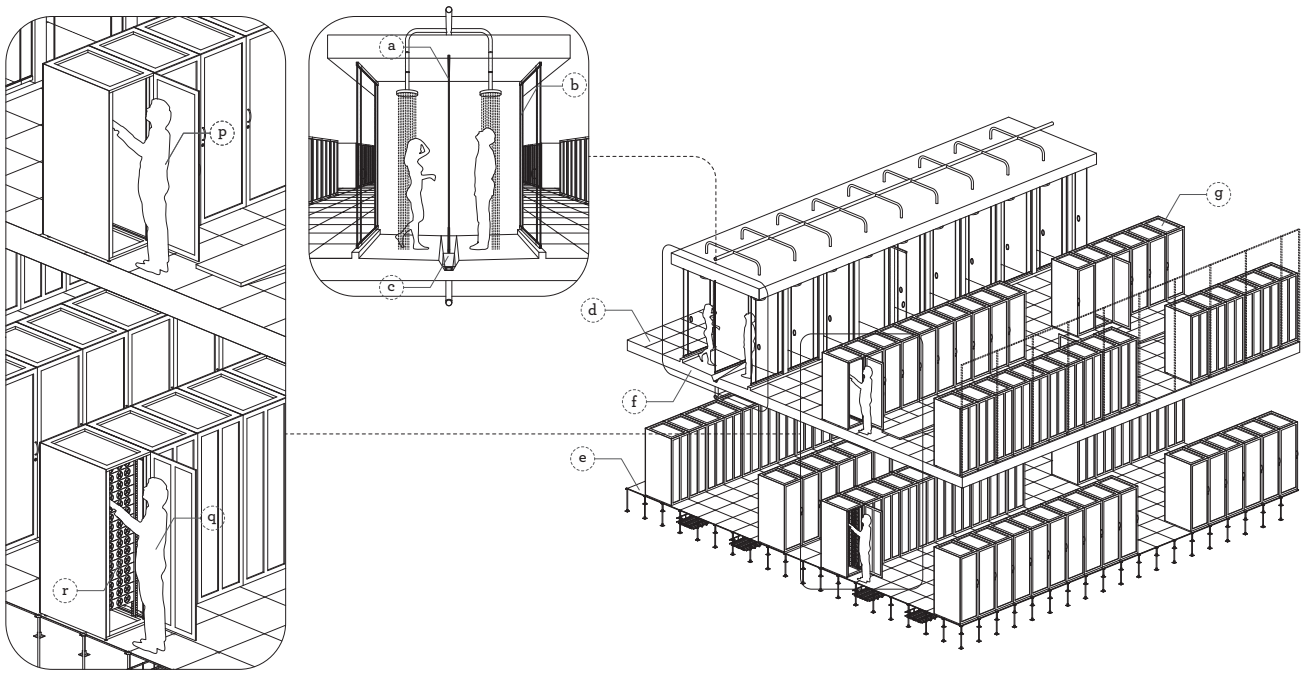


Hack No. 1: Engaging Protocols

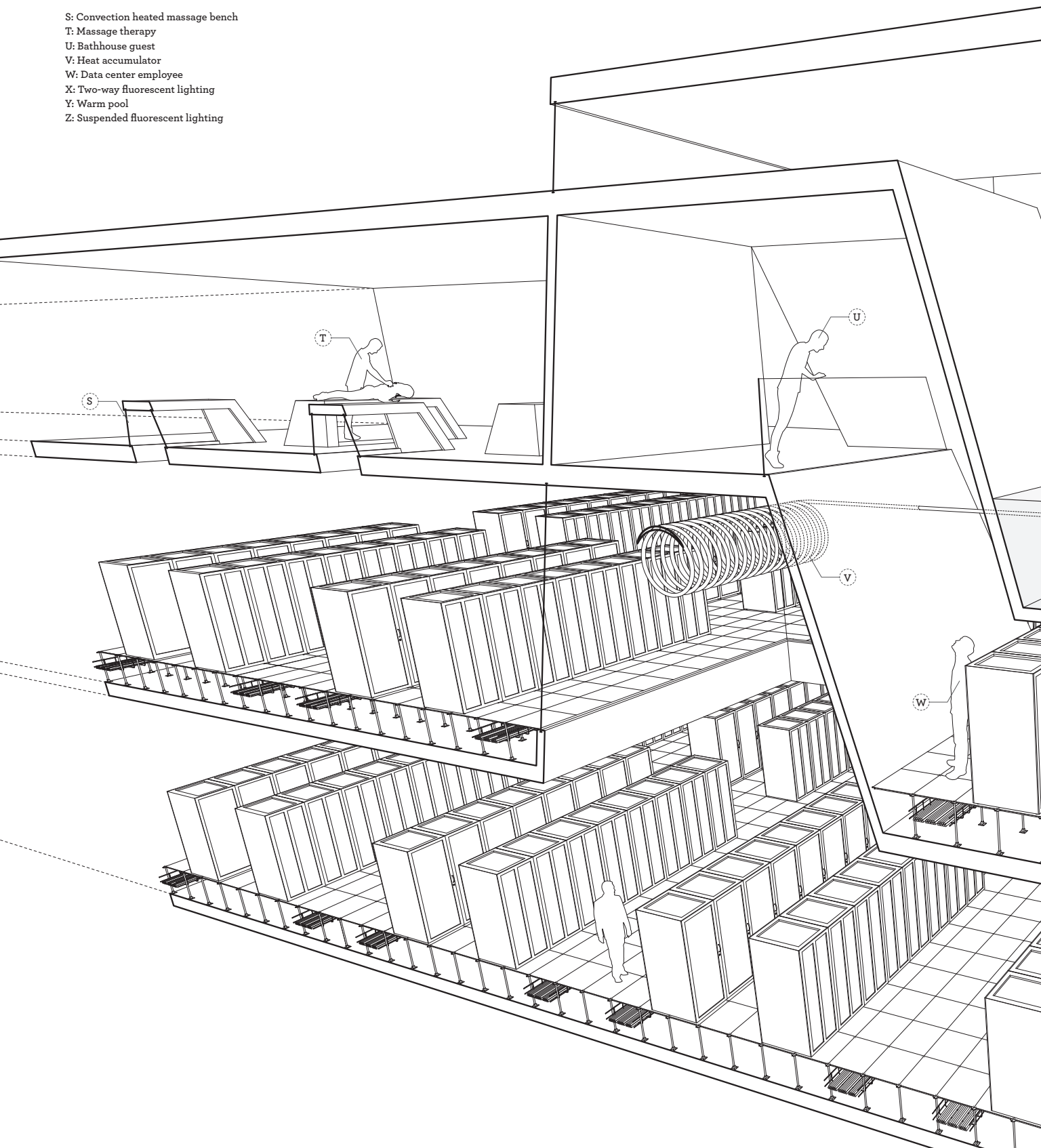
The bathhouse responds to the context of its immediate site: the computer data center. Server farms operate within a specific set of technological and architectural protocols to maximize efficiency and reduce operating costs. The symbiotic hybridization of program proposed here seeks out opportunistic overlaps in existing protocols for data center and aquatic architecture in an effort to amplify visitors' awareness of the physical characteristics of this invisible infrastructure. Elements typical to data centers, like the ubiquitous server storage rack, are co-opted for specific programmatic needs in the bathhouse. Server racks are used to store both personal cloud media and personal belongings in guest rooms and changing spaces. Fluorescent lighting is hung at a height corresponding to the floors of the bathhouse pools so that spatial overlaps allow light to project both downward into the data center and upward into the pools. The layout of the baths is directly informed by the rigid grid of the data floor, with pool and sauna locations responding to the typical hot and cold aisle layout used to cool servers.

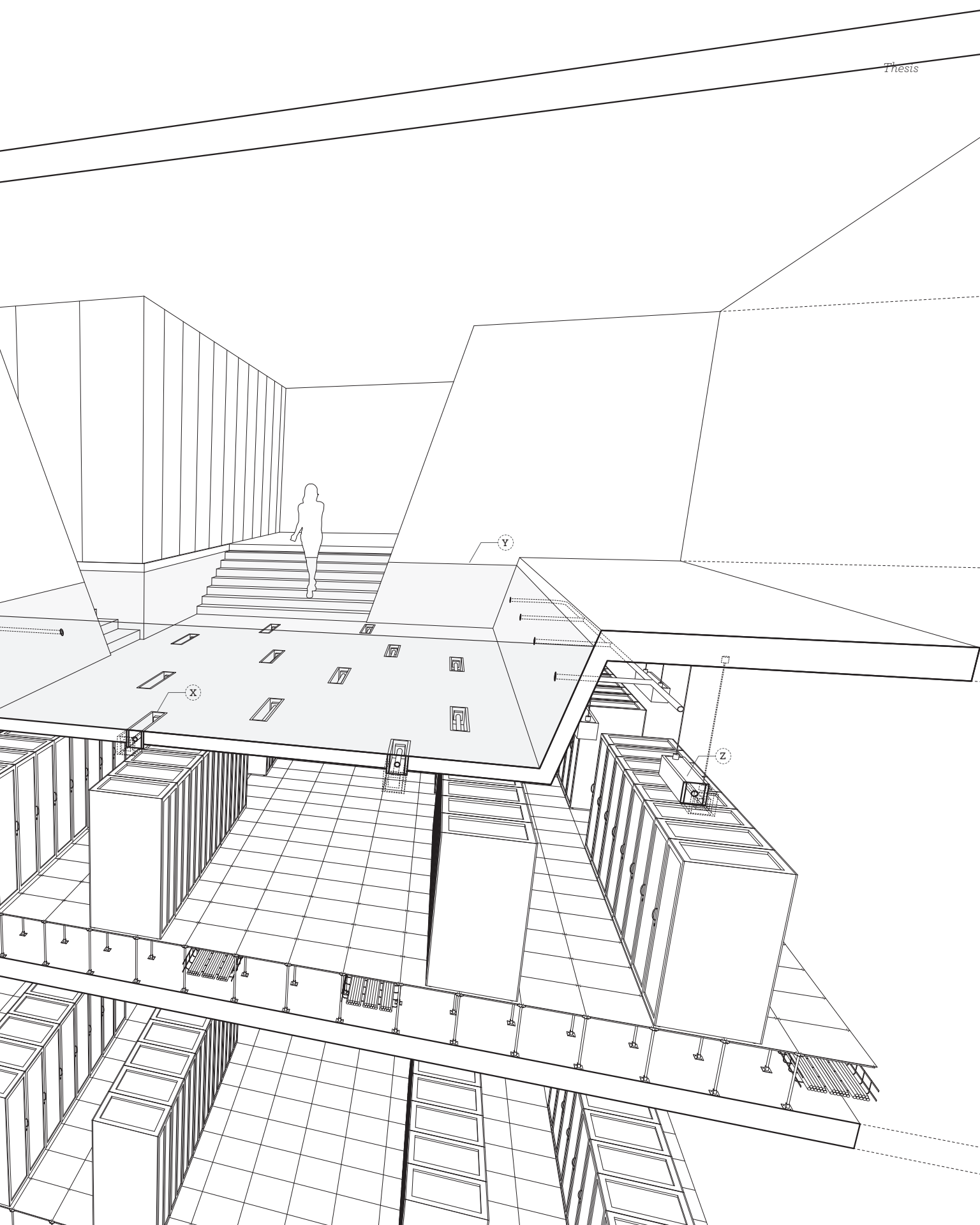
The high security status of most data centers requires extensive means of surveillance. Here, employee offices are located above the baths, surveying guests' activities through a two-way mirror, satisfying the data center's need for real-time surveillance while also serving voyeuristic purposes.

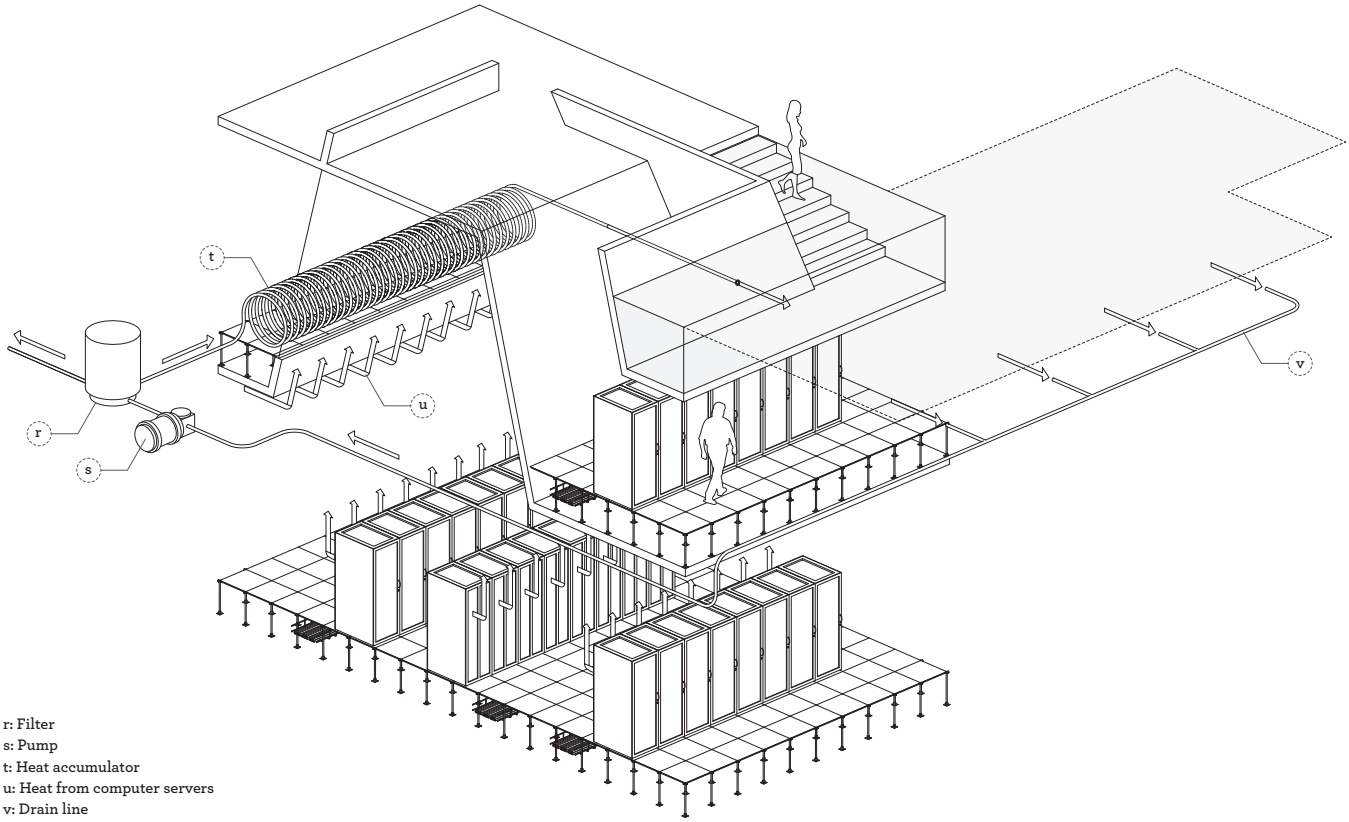
Changing rooms
a: Frosted glass shower divider
b: Frosted glass shower door
c: Shared drain
d: Women's changing room
e: Shower stall
f: Data floor
g: Men's changing room
p: Bathhouse guest
q: Data center employee
r: Computer server storage



S: Convection heated massage bench
T: Massage therapy
U: Bathhouse guest
V: Heat accumulator
W: Data center employee
X: Two-way fluorescent lighting
Y: Warm pool
Z: Suspended fluorescent lighting



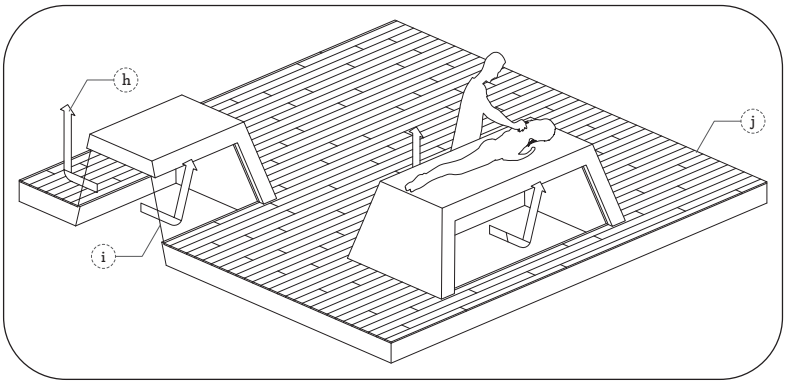

X
Y
Z



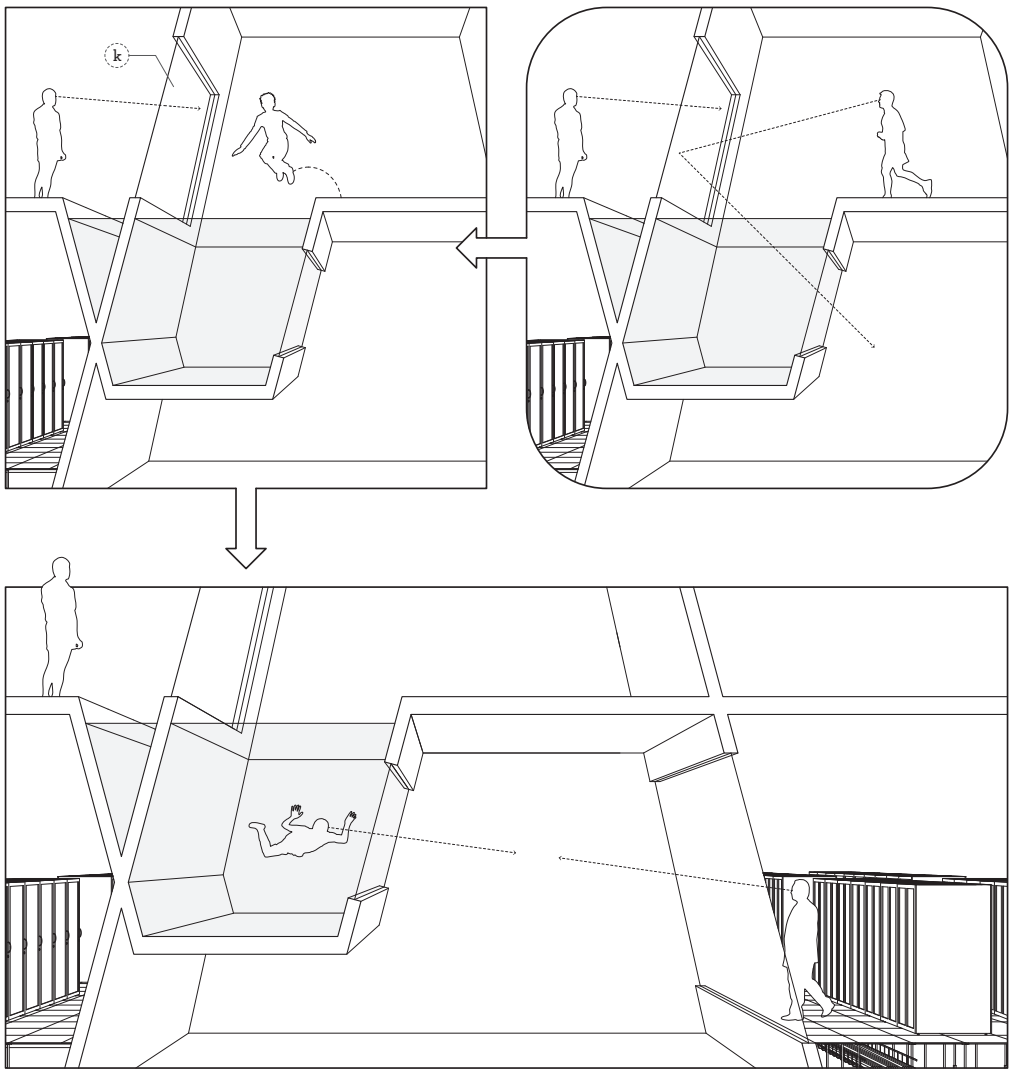
r: Filter
s: Pump
t: Heat accumulator
u: Heat from computer servers
v: Drain line

Hack No. 2: Data Climates

The majority of the energy consumed by data centers is used to cool its servers, which are damaged at high temperatures and produce massive quantities of waste heat. Server cooling systems typically utilize a system of chillers that circulate chilled air beneath a raised floor system. Similarly, Roman bathhouses deployed a raised flooring system called a hypocaust as a means of climate control to produce heated spaces and pools. Here, the data center acts as a hypocaust for the baths, which are located above the rows of heat generating computer servers. Sectional manipulation responds to convection currents. Concrete floor slabs fold to trap rising heat in pockets to be occupied as saunas, or to be used to heat water being pumped into the pools. The heat produced by computing creates a haptic interface to the invisible flow of data, producing ambient microclimates within the bathhouse that correspond to global flows of information. Higher temperatures in these spaces indicate high volumes of data exchange, while periods of low data flow produce less heat and cooler spaces. Thus, the ambient social climate of these thermal zones relies on the large-scale social exchange of information facilitated by placeless digital networks.

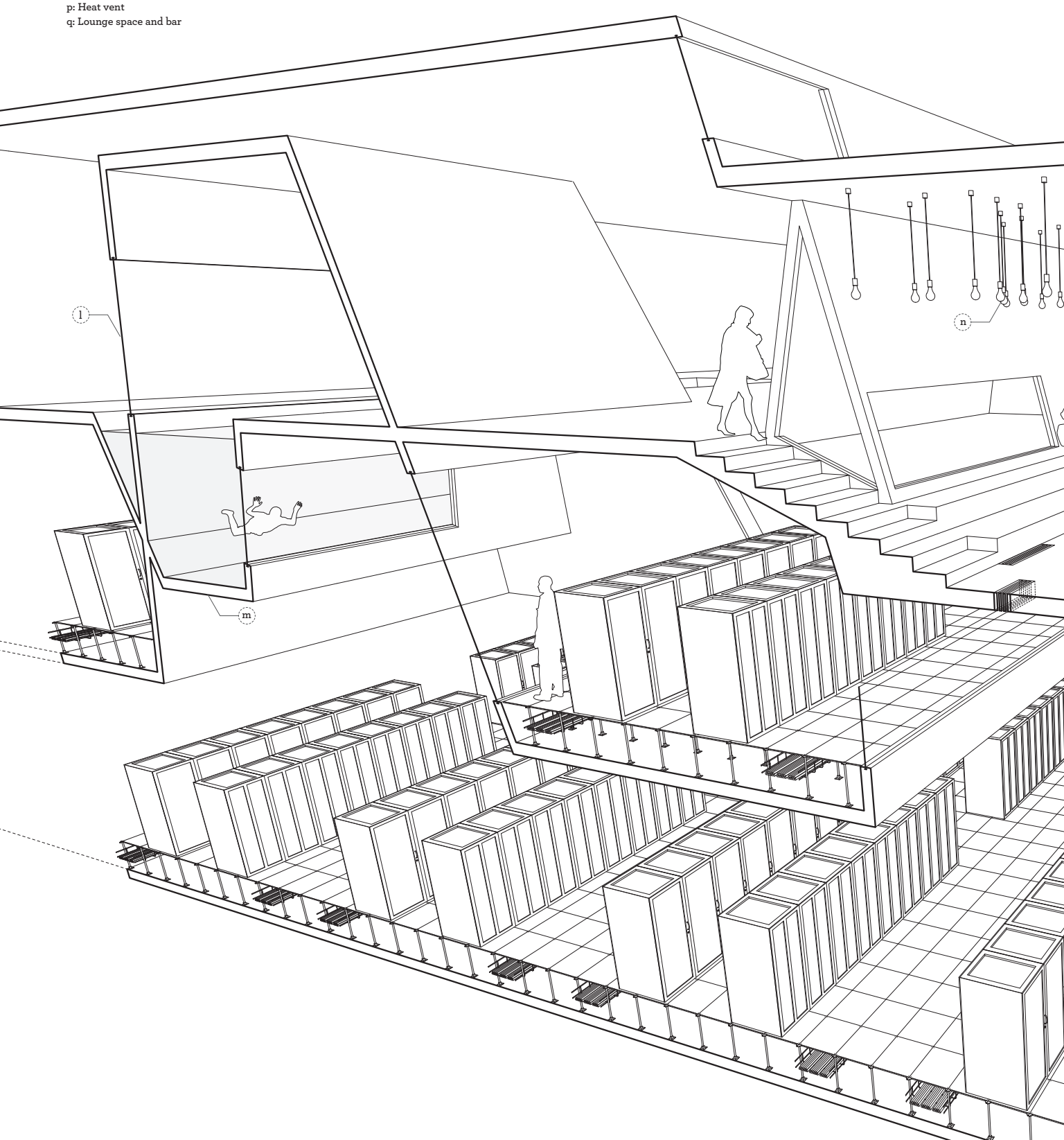


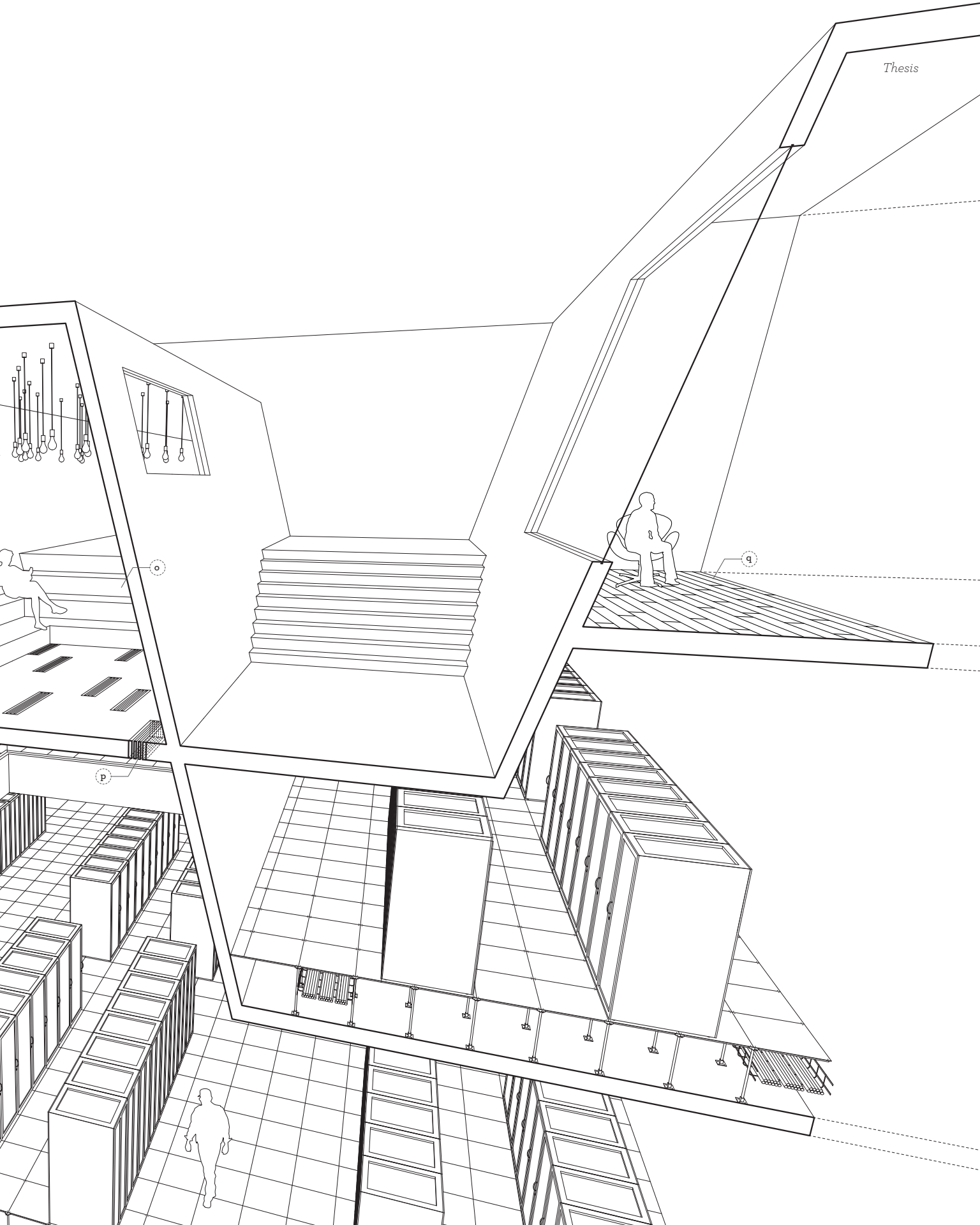
Massage
h: Heated air from servers
i: Perforated plexiglas
j: Hardwood flooring



Plunge pool
k: Two-way mirror

l: Two-way mirror
m: Cold plunge pool
n: Incandescent lighting array
o: Sauna
p: Heat vent
q: Lounge space and bar



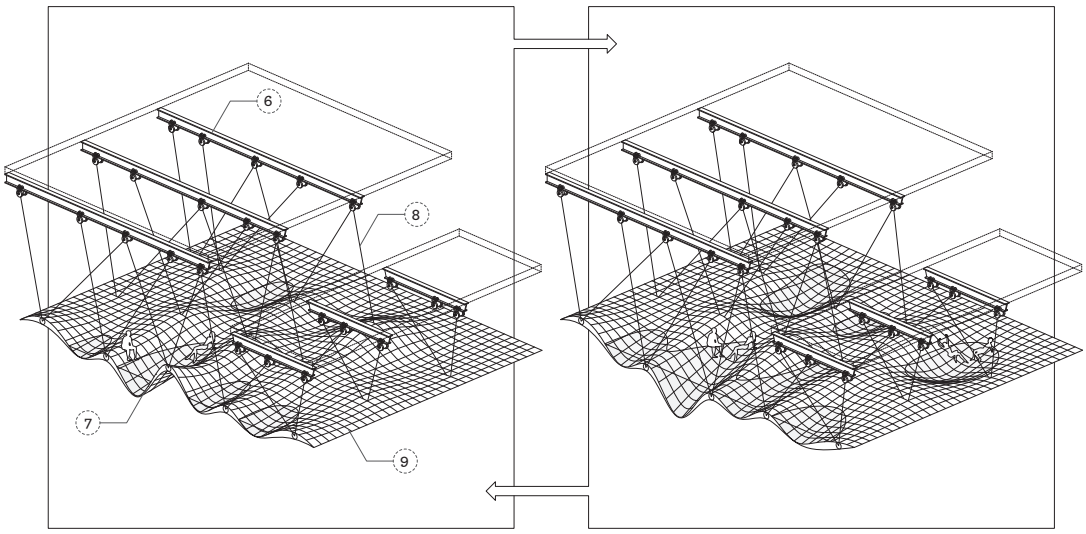

o
p
q

Hack No. 3: Spatial Flux

Short-term fluctuations in data flow, as well as long-term changes in the demand for storage space, manifest spatially within the project. Daily variations in data flow result in topographic manipulation of a thermal landscape of artificial hot springs maintained at a constant temperature. In this case, the water in the pools is to be maintained at a fixed high temperature rather than left to fluctuate with changes in the volume of data exchange. The volume of water held in the pools must then be adjusted to reflect the quantity of heat expelled by the servers, therefore acting as a spatial indicator of volumes of data flow.
A system of cranes suspends a flexible tension membrane that holds heated water in a dynamic, transformable landscape, responding to the availability of heat as a resource produced by flows of information.

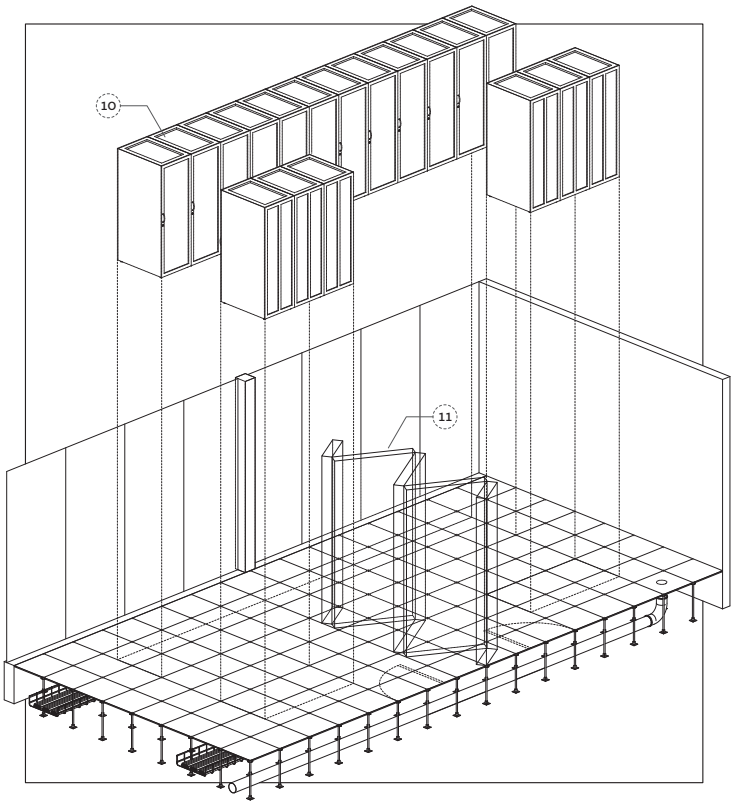
Additionally, unused speculative expansion space in the data center is used to house bathhouse guests, allowing the data hosting facility to financially benefit from an under-utilized space. As demand for more storage space grows, the guest rooms can easily be converted using the typical modular components of the data center. However, the financial benefit of this conversion may not always play in the favor of additional data storage. Thus, this space becomes a zone of constant flux, informed by seasonally shifting market demands for tourism and data hosting.

Kinetic ground
6: Crane system
7: Hot pool
8: Steel cable
9: Tension membrane

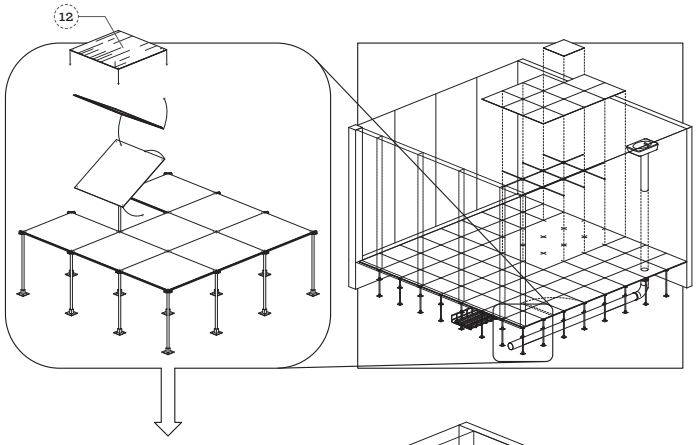


Low tide
Low volume data flow = low heat energy = higher topography = less water to maintain at high temperature

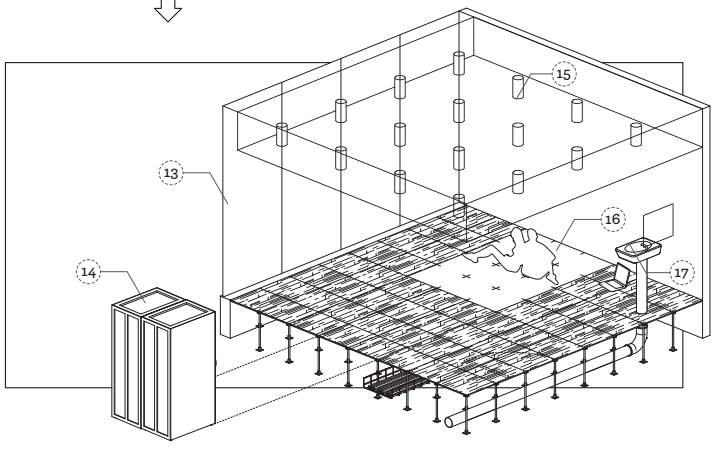
High tide
High volume data flow = high heat energy = lower topography = more water maintained at high temperature



White space
10: Potential server racks to occupy white space
11: Retractable room divider

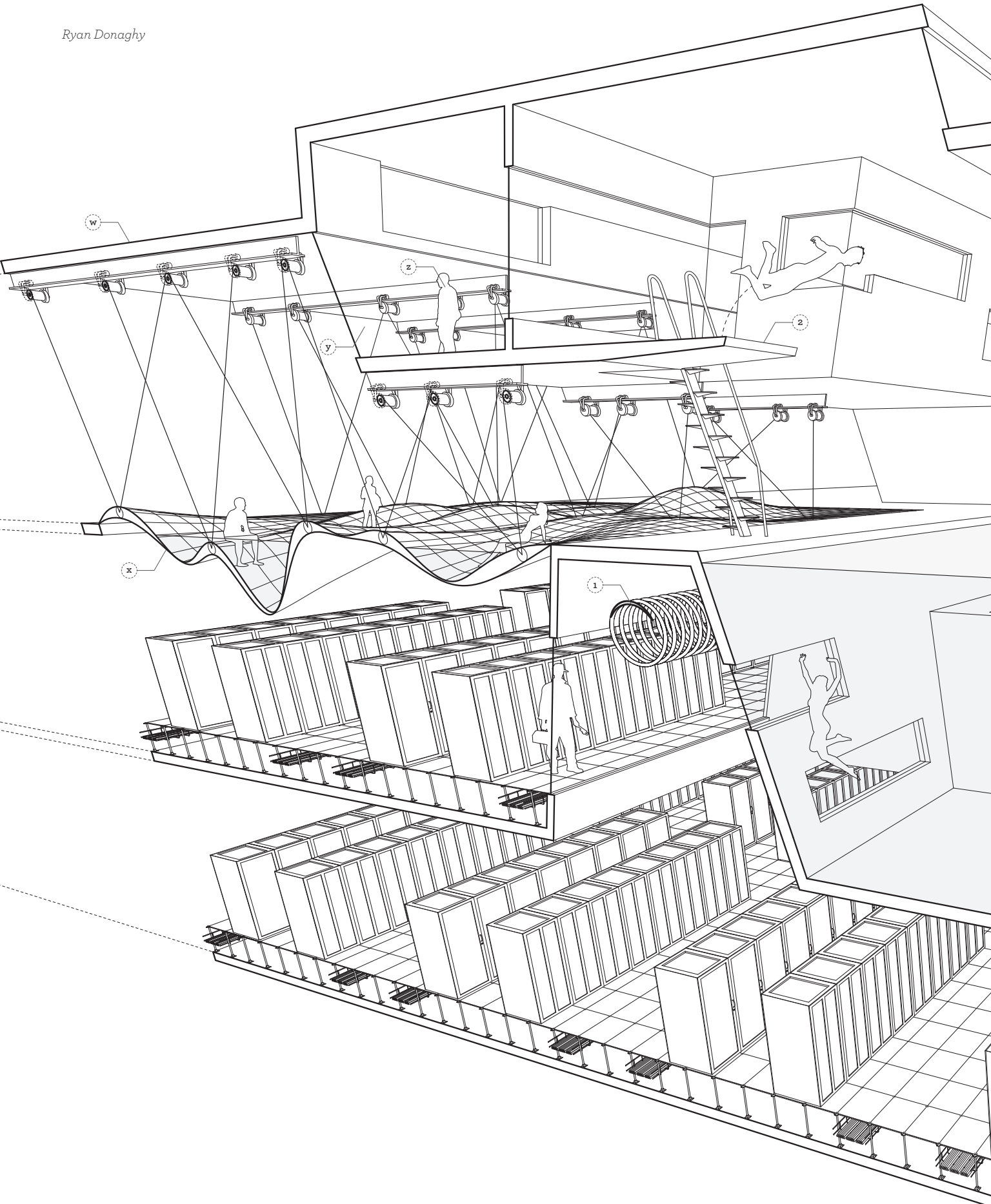


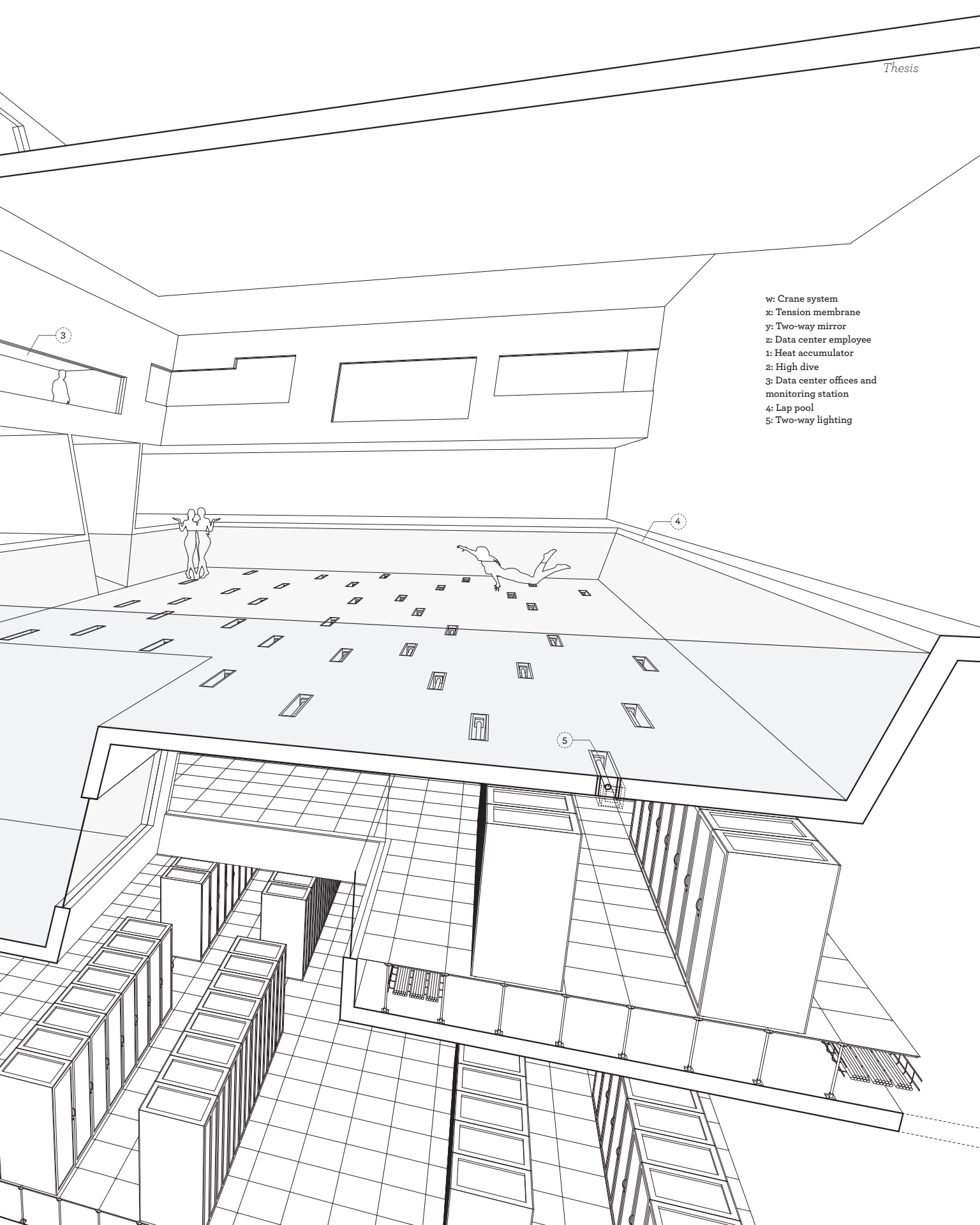
Guest rooms
12: Hard wood veneer on underside of floor panel



13: Mountain views
14: Server racks as for clothing
15: Recessed lighting
16: Bed
17: Sink

Ryan Donaghy



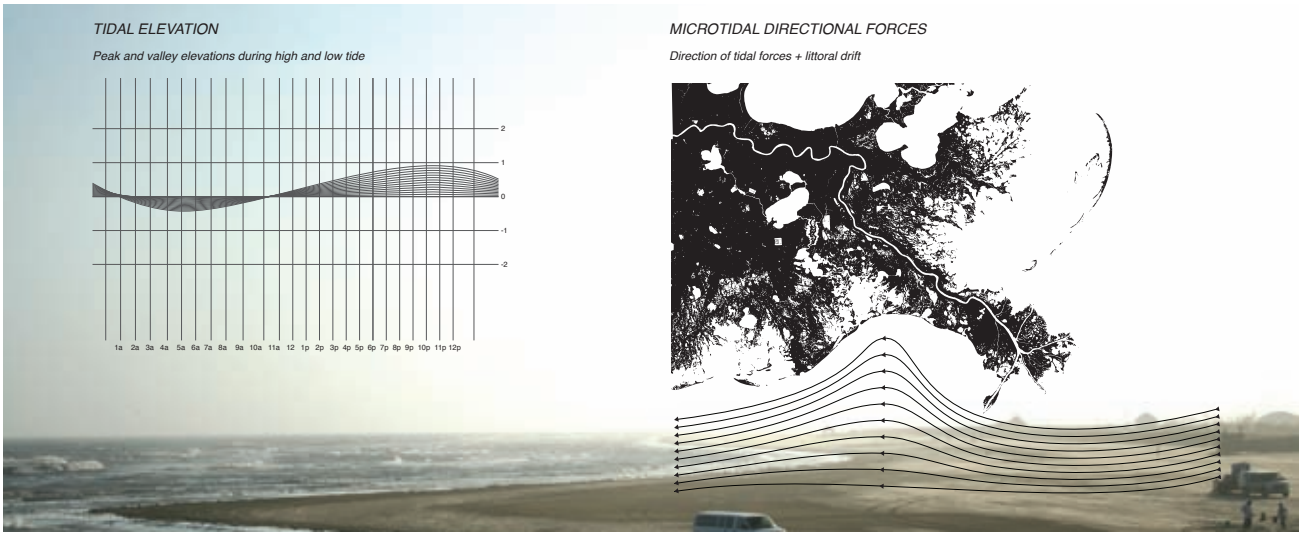

w: Crane system
x: Tension membrane
y: Two-way mirror
z: Data center employee
1: Heat accumulator
2: High dive
3: Data center offices and monitoring station
4: Lap pool
5: Two-way lighting
3
4
5

Ground Swell

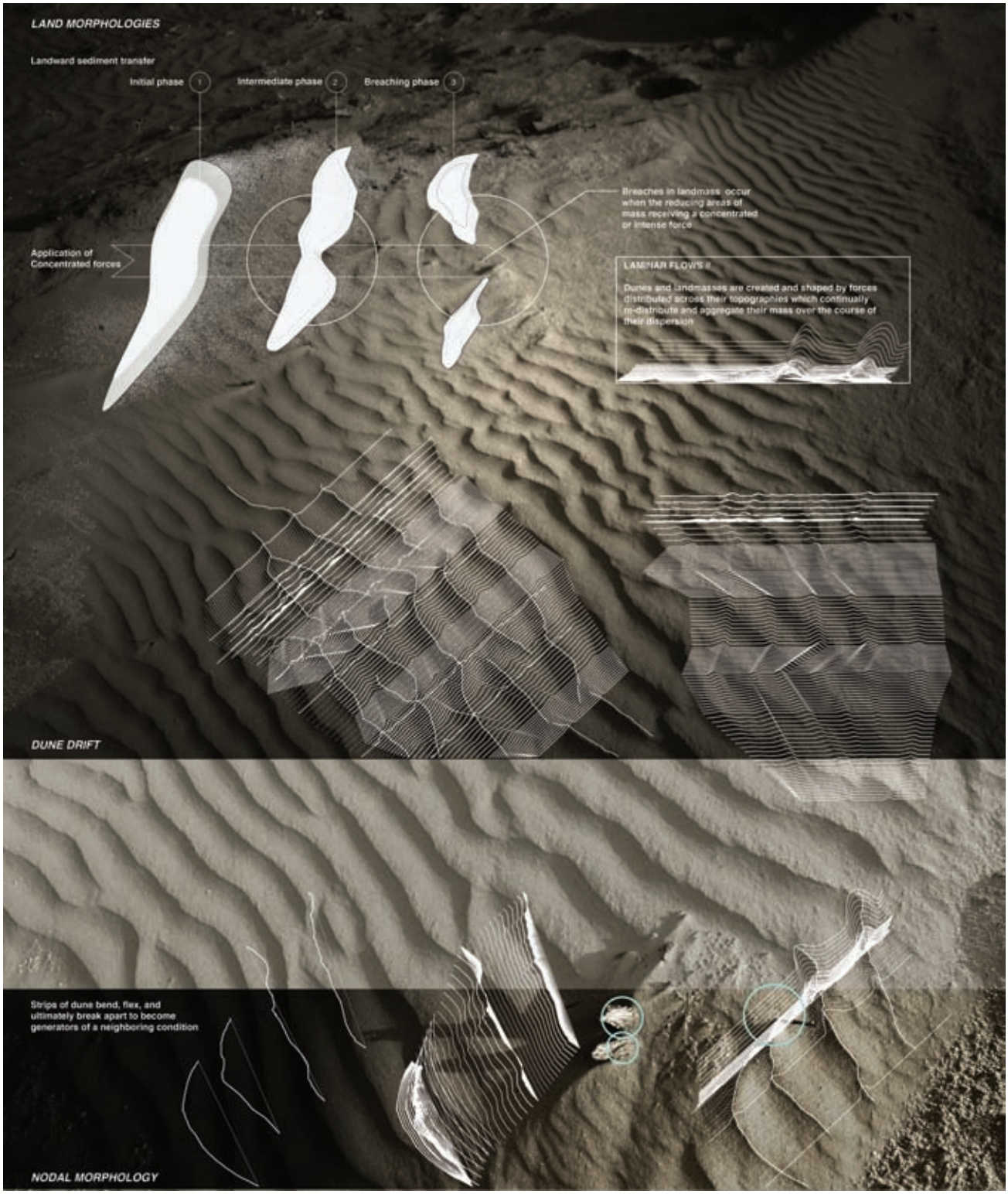
Adaptive Land Morphologies and Soft Infrastructures

Chris Holzwart | Thesis Advisors: Geoffrey Thün and Kathy Velikov

The intention for *Ground Swell* is to further investigate and expand the current boundaries of architecture's relationship with site, infrastructure, and coastal urbanization. The *Ground Swell* project speculates future land development and creation for Louisiana's most prominent and only inhabited barrier island, Grand Isle, over the course of the next 50-plus years. The project negotiates the volatile existence of coastal conditions in the Gulf of Mexico as well as emerging opportunities of occupation and land management in these continually changing ecologies. This environment proves inappropriate for the finite and static qualities of conventional engineering solutions. As a culturally and economically lucrative borderland, it demands a flexible system to control the massive adaptation of its landscape. *Ground Swell* proposes a future where the economic and environmental forces of Grand Isle's industries are integral to the process of the morphological management of its landmass.



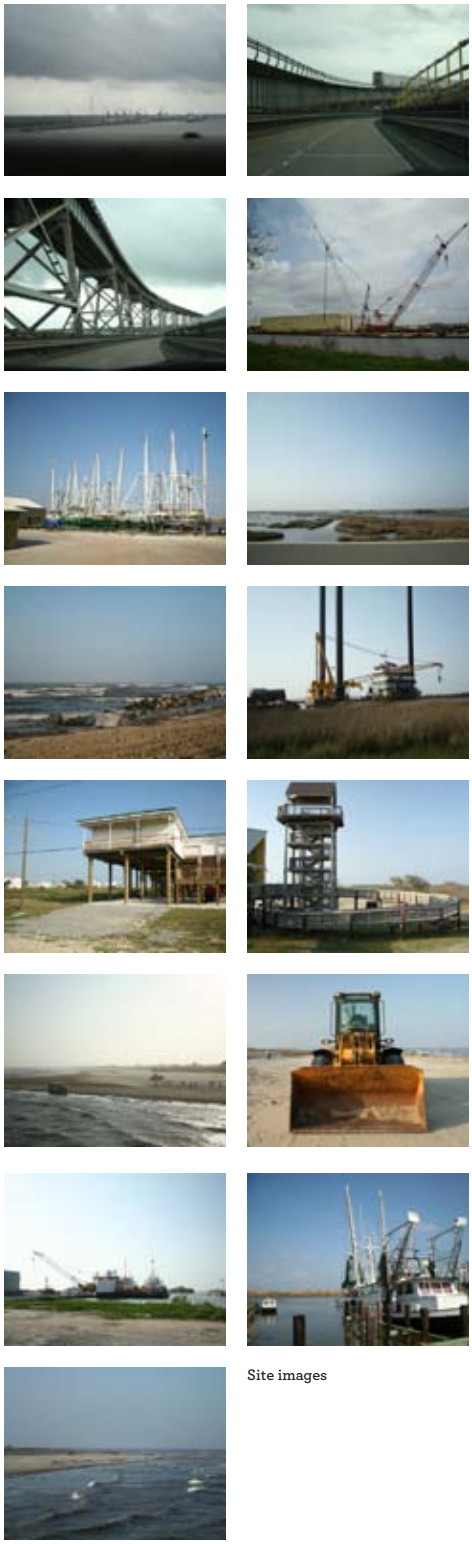
Coastal Louisiana is deteriorating at an alarming rate. Louisiana's seemingly unstoppable land loss requires an immense amount of human and natural resources to even temporarily mitigate its stresses. Coastal degradation is caused by both natural conditions and the anthropogenic impact of economies, industry, and various forms of island infrastructures. Grand Isle is not truly "meant" to be occupied, and yet by virtue of its location it serves as a hub between the Gulf of Mexico, Barataria Bay, and mainland Louisiana. This seemingly advantageous position does not exist without cost. In order for the island to maintain operations, it must continually be adapted to prevent the conditions that contest its existence. Dredging, filling, damming, and other reparative and preventative operations instituted by the U.S. Army Corps of Engineers are necessary means to an unknown end. On average, the coast is hit by what can be qualified as a "massive tropical storm or hurricane" roughly every four years with varying degrees of devastation. Re-building, reconstructing levees, and re-routing waterway channels are facts of coastal life. Barrier islands protect sensitive bay ecologies from tidal forces that are amplified by the changing climate. Barataria Bay is especially sensitive to immense environmental mutation. Data collected by the U.S. Geological Survey for Grand Isle in 2005 shows that sea level in the area is rising at 1.03 cm per year. At the time of the analysis, this was the highest rate in the contiguous United States and further exposed rising sea levels as a cause of the substantial coastal devolution in Louisiana. Rising sea levels greatly affect the vulnerability of the mainland areas to hurricane damage and the inundation of saline waters. A robust and less segmented barrier island chain once existed between Barataria Bay and the Gulf of Mexico, but the recent strengthening of tidal forces and rising sea levels have created major inlets within the islands. These tidal inlets allow waves to travel past the islands at rates faster than the wetlands are able to accept.


LAND MORPHOLOGIES
Landward sediment transfer
Initial phase 1
Intermediate phase 2
Breaching phase 3
Application of Concentrated forces
Breaches in landmass occur when the reducing areas of mass receiving a concentrated or intense force
LAMINAR FLOWS //
Dunes and landmasses are created and shaped by forces distributed across their topographies which continually re-distribute and aggregate their mass over the course of their dispersion
DUNE DRIFT
Strips of dune bend, flex, and ultimately break apart to become generators of a neighboring condition
NODAL MORPHOLOGY

The majority of the Grand Isle's perimeter consists of a stretch of lengthy beaches, Exxon Mobil industrial oil facilities, the town of Grand Isle, marinas, small to medium-scaled portages, and a state park. Erosion-preventing dikes project seaward, preventing the tides from shifting the soft landscape. Along the majority of the eastern border, a region of the island subject to laminar sea flows moving east to west across the island's southern face, are border dikes that act as erosion control structures. These structures virtually close off the connection from the land to the ocean.

Even though the laminar flow of the tide is responsible for eroding the surface of the island, over the last few decades the eastern half has actually grown substantially. The plume of sediment rich waters deposited from the Mississippi River Delta, in partnership with tidal forces that disperse that sediment landward, have begun to accrete on the eastern half of Grand Isle. This phenomenon indicates an opportunity to harness deposited sediment as a currency for means of landmass expansion. The U.S. Gulf Coast may just become America's "New Frontier."

Time is embedded within the engineered systems that control the conditions of Louisiana's coast. Levees are constructed to resist 25-year, 50-year, or 100-year capacity levels. If over-engineered, the levees drastically inhibit the natural eco-aquatic order; if under-engineered, they fail completely. *Ground Swell* is a medium to investigate time as a physical factor in the process of design: the temporal expression of a dynamic landscape.



Site images

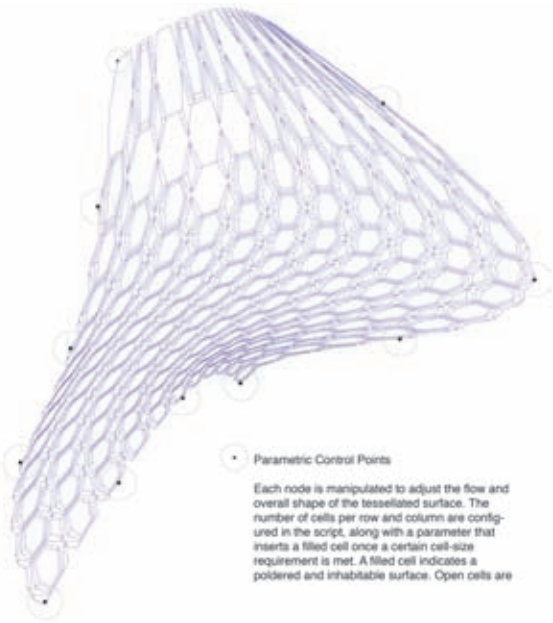
Project Overview

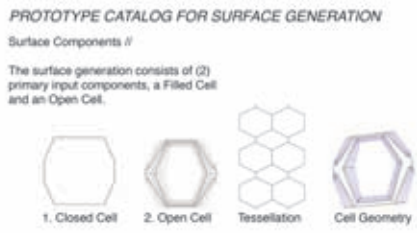
Ground Swell takes place in the near future of Grand Isle's rise to prominence as a major economic player in the Gulf of Mexico. What was once a vacation island for avid beach-goers and fishing buffs has ballooned to become an integral component of the coastal portage and economic market. Industries have grown as the Gulf becomes an increasingly necessary location for oil extraction, resulting in more capital, distribution, occupation, and expansion. The well-being of aquatic ecologies is closely tied to development and is considered integral to the island's transformation. Grand Isle is recognized as necessary for the mitigation of tidal forces. The future of Grand Isle is predicated upon the evolutionary development of its prominent figureheads: the fishing industry, the shipping industry, the oil industry, aquatic ecologies, land development (U.S. Army Corps of Engineers), and island population. These agents of change will fluctuate in prominence and need in the island's future, and the island will adapt in response.

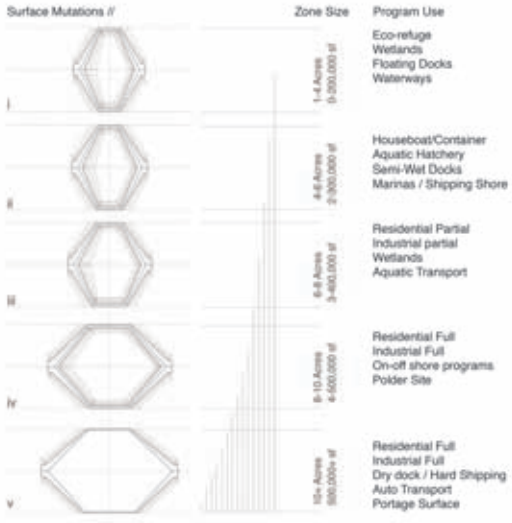
Strategically Engineered System

Ground Swell is a coastal construction system that creates the opportunity for land to be effectively "gained" or "created" through its actuation in the sediment-rich water column of the Louisiana coast. The engineered land-amassing system is an armature consisting of a concrete bed that delivers hydrostatic pressure into geo-synthetic tubing. This system is embedded within the periphery of the island, and specific cell regions are hydrostatically pressurized to initiate the eventual generation of occupiable surface. The most adept response is calculated by analyzing the parameters of the components involved and their effect on the current systems in place, such as developed ecological habitats. Conventional construction machinery assembles the *Ground Swell* system in the desired region of the island.

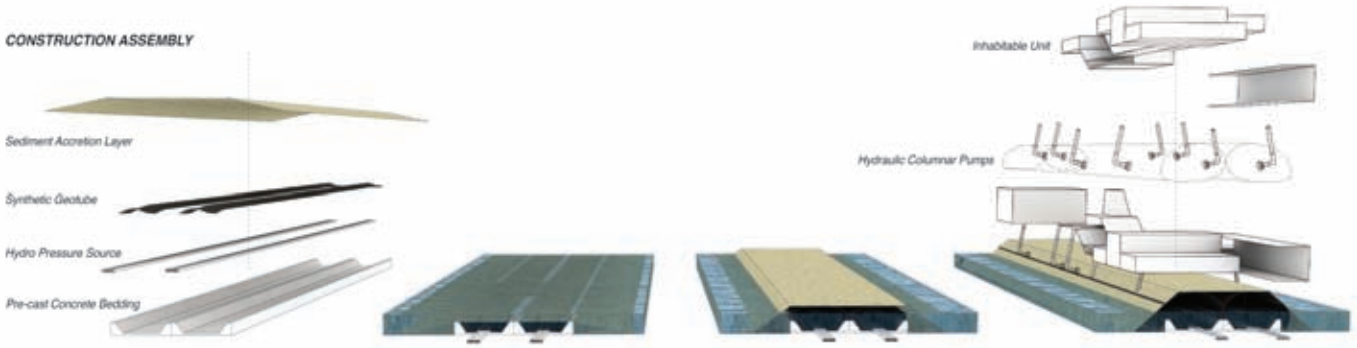
Ground Swell presents itself as a new method of extending landmass, protecting ecologies, and facilitating expansion of coastal industries. The project pertains to an inevitable future in which Grand Isle will experience changes in its tourism, local oil and shipping economies, and ecological responsibilities. The island is able to respond to these changes through expansion or contraction of the island's occupiable surface to contain new growth or alleviate irrelevant development, and allows for adaptation even if these economies lose prominence altogether.







CONSTRUCTION ASSEMBLY



0. System Componentry 1. Deflated Condition 2. Initial Hydro-Inflation and accretion 3. Fully Distended System

SYSTEM SCENARIOS

Residential Condition

Residential Condition - Low Position

Residential Condition - High Position

Industrial / Transportation Condition

Transportation Conduit - Low Position

Transportation Condition - High Position

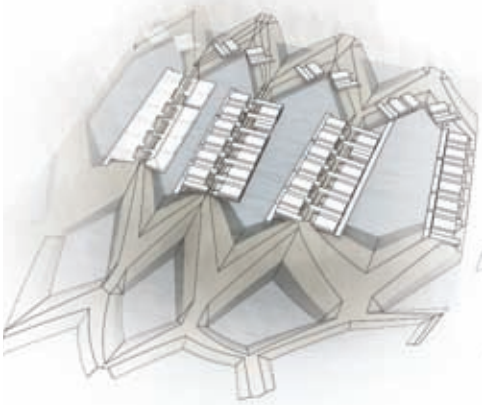
Ecologies / Habitat Restoration

Ecological Layer - Low Position

Ecological Layer - High Position

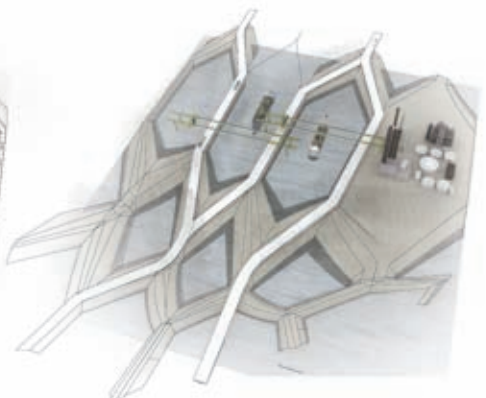
Flexible membrane for fluctuating conditions between land and sea

New community of coastal housing units atop of Ground Swell system



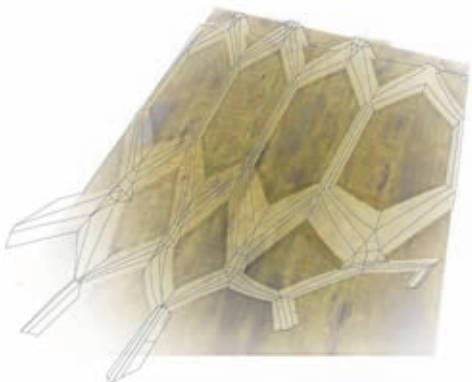
Conduit for infrastructural operations and avenues for expansion

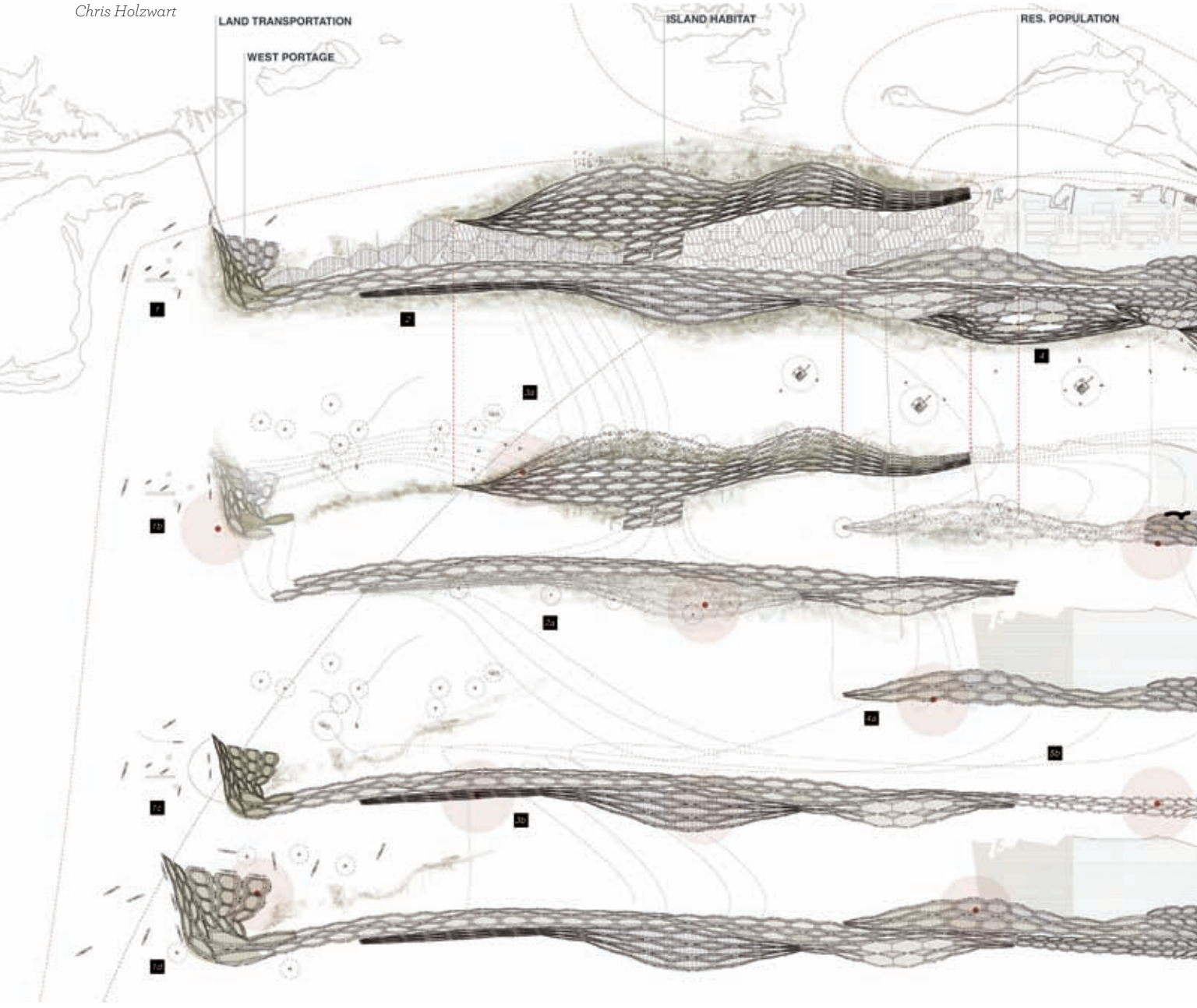
Maritime operations utilize swell system as a layer of transportation for goods and operations



Ecological refuge and habitat restoration device to counter heightened conditions of eco-degradation.

Swell System promotes the retainage of erosion prone and exposed coastline to harbor habitats and furtively regenerate decaying conditions.





1a. West Fisherman's Point
West Fisherman's Point emerges due to the restoration of marshland, which creates a new land-use opportunity.

2a. Aquatic Offshore/Onshore Housing 1
Stabilized offshore housing is implemented to accommodate the off-shore industrial population. The increasing population of West Fisherman's Point boosts the housing market.

3a. Marshland Restoration
Mitigating degradation and habitat restoration of back barrier marshland is integral to the surrounding aquatic ecosystems.

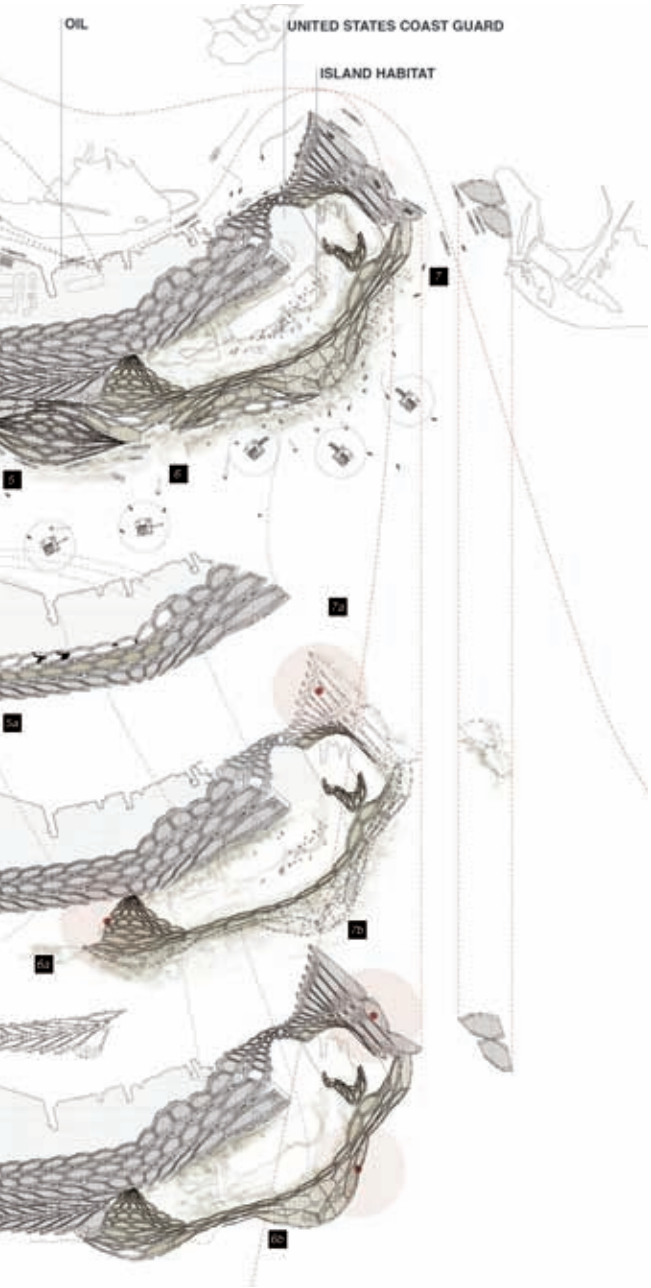
5a. Industrial Expansion, East
Due to a lifting of the drilling moratorium, Exxon-Mobil uses the *Ground Swell* system to expand its industrial campus.

3b. Aquatic Offshore/Onshore Housing 2
Offshore housing is developed to adapt to new edge conditions.

4a. Industrial Expansion, West
Exxon-Mobil expands westward, using the *Ground Swell* system to retain marshland and create new adaptive building surfaces.

5b. Industrial Expansion 2, West
Industrial and maritime business facilities effectively operate on marshland created by the swell system.

6a. Park Coast 1
The *Ground Swell* system is deployed to protect and expand ecologies, offering new conditions for habitats and tourism.



7a. East Port 1
Eastern expansion of Exxon-Mobil facilities offers portage opportunities for oil and maritime industries to supply the island.

1d. West Port
Previously West Fisherman's Point, West Port now serves the western half of the island, due to its proximity to advanced transportation vital to the island's local economies.

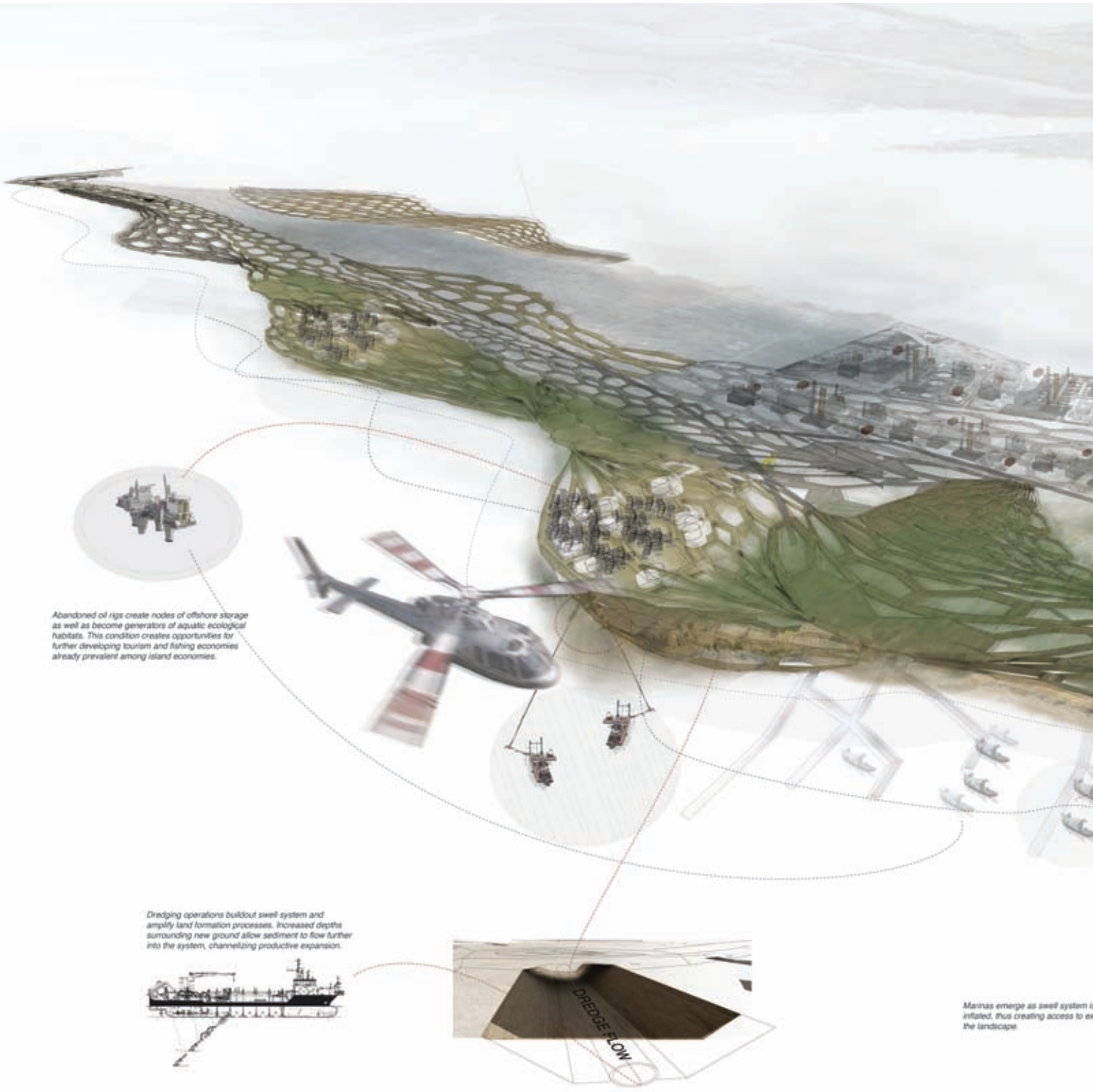
6b. Park Coast 2
The proliferation of natural ecologies produces opportunities for major fishing and shrimping procurement, as well as new coastal inhabitation.

7b. East Port 2
A full-fledged port emerges, servicing the oil industry and entire bay.

Future Site Permutations

Ground Swell allows for adaptation to occur with respect to land mass generation and surface development. Unlike a specific solution or master plan, permutations of future developmental schemes are based on a variety of projective cultural and economic conditions. The physical development and shape of the island change according to current and future demands of the site. If the current economic climate requires that the Exxon oil facilities expand seaward to gain increased connectivity to their pipeline-to-oil rig infrastructure, the adaptive *Ground Swell* system will allow their expansion to be a successive and impermanent process. If Exxon's oil extraction in the Gulf dissipates and the landmass is no longer relevant to the island's ecosystem, the deflation of the *Ground Swell* cells will release the mass, and the land will be carried tidally to be re-distributed in other proliferating parts of the island.

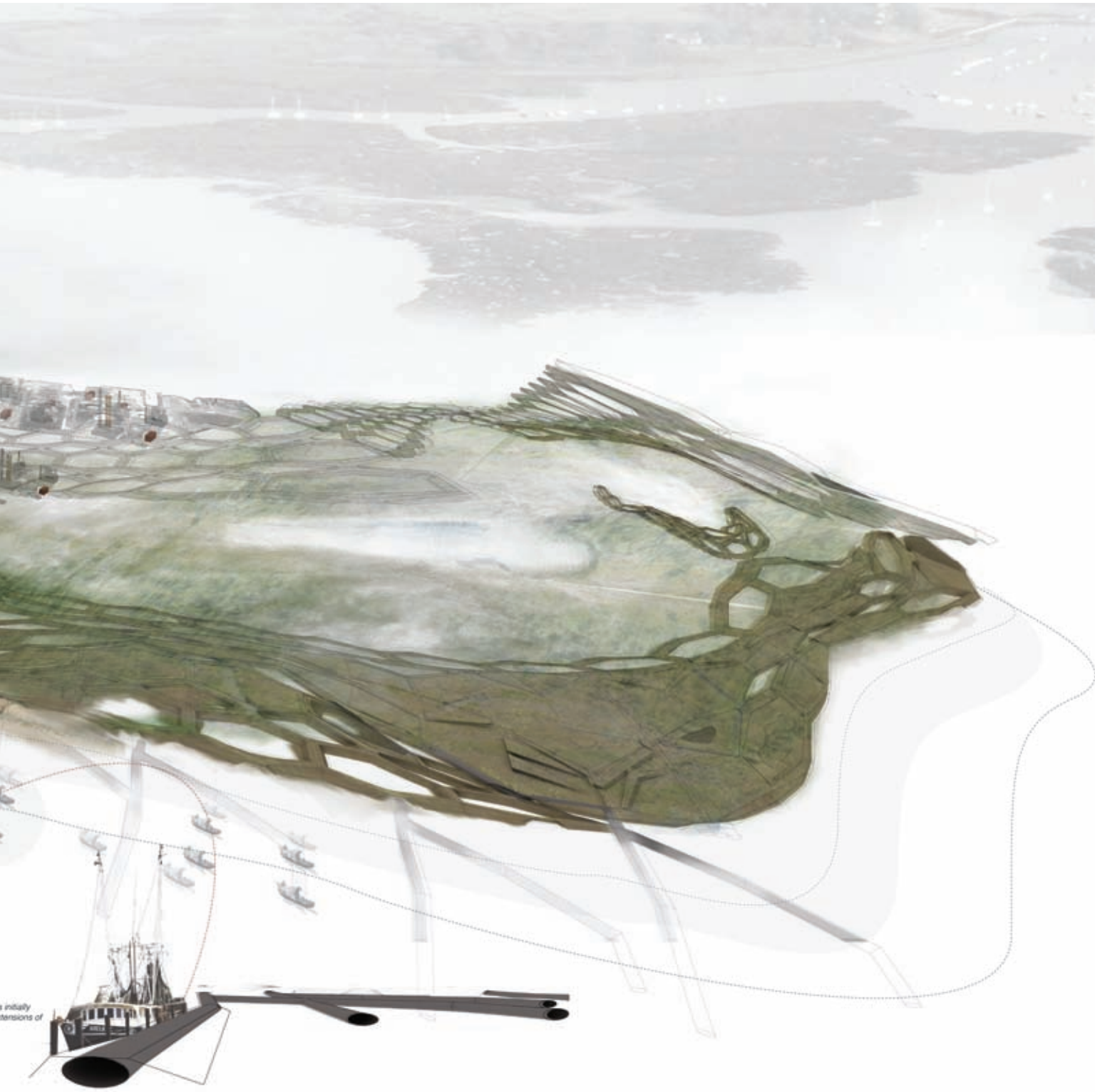
These "options" consider the proclivity for organic growth in a complex system, and recognize that each component of the system is sensitive to the effects created by the sum of the others. The permutations are adaptive solutions to manipulate future patterns of industrialization and urbanization for Grand Isle.

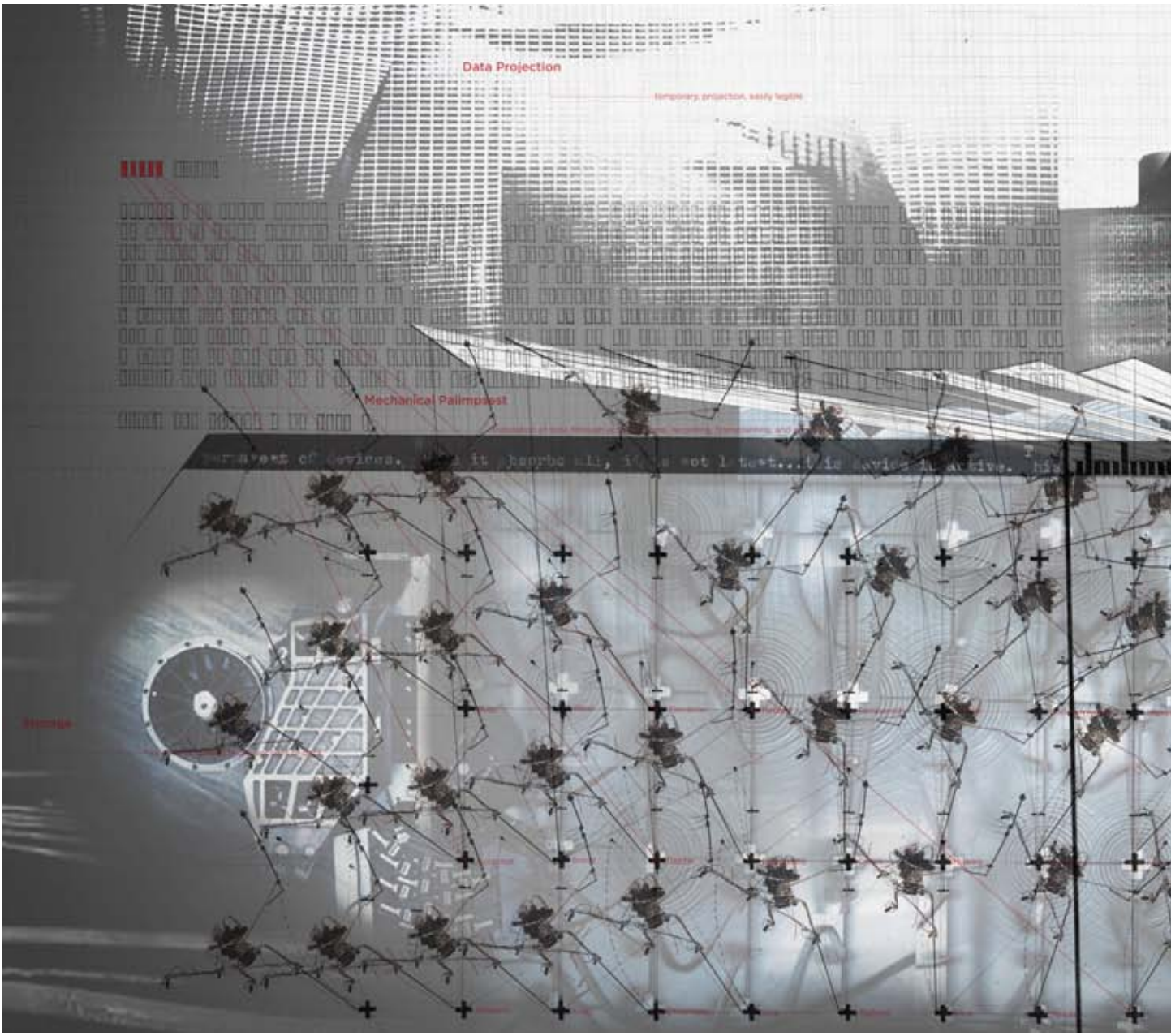


Abandoned oil rigs create nodes of offshore storage as well as become generators of aquatic ecological habitats. This condition creates opportunities for further developing tourism and fishing economies already prevalent among island economies.

Dredging operations buildout swell system and amplify land formation processes. Increased depths surrounding new ground allow sediment to flow further into the system, channelizing productive expansion.

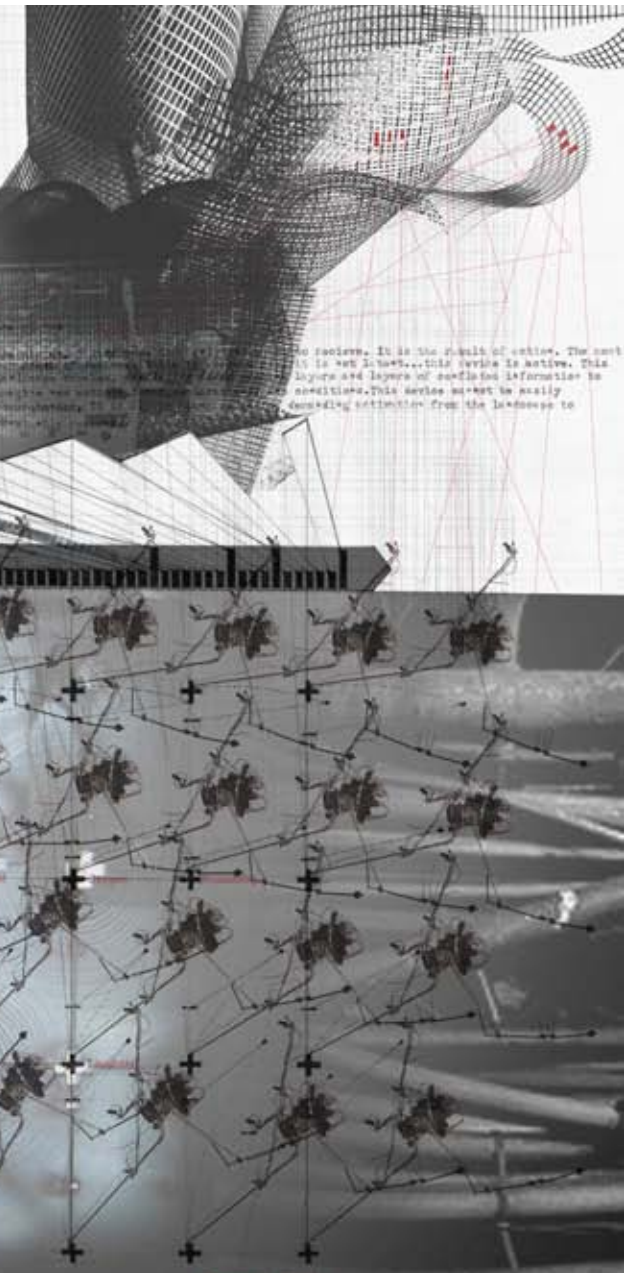
Marinas emerge as swell system i inflated, thus creating access to ex the landscape.




Data Projection
temporary projection, easily legible
Mechanical Palimpsest

Zeitgeist Factory

Matthew Slingerland | Thesis Advisors: Robert Adams and Dawn Gilpin



In our current world of Google, Wikipedia, and Twitter, access to knowledge around the world is becoming less and less of a concern. Unlimited access, however, has given birth to an insatiable crisis regarding the organization of knowledge. Exploring the ways in which designers navigate and understand networks of information, *Zeitgeist Factory* enlists relational thinking as a mechanism for cultivating, registering, and participating within the spirit and knowledge of today's culture.

This imaginative project uses the Pantheon, based upon a classical understanding of knowledge, as an organizational point of departure. This site becomes the hub for translating networked thinking into a new understanding of space, as the Zeitgeist Factory begins to unmake the order of the Pantheon. The typewriter, an analogous mechanism to the Pantheon, is used as a catalyst for the project; the inherent structure of the typewriter, the abecedarium, becomes a means for cultivating and ordering issues of contemporary culture.

Opposite and below:
A drawing that explores the four recording devices inherent in an analogue typewriter with regard to its translational capacities.

1. The keys record through frequency of use. One understands how often a key has been used, with respect to the others, because of the residue left from the touch of a finger.

2. The ink strip is the purest record of what has been written. It moves one space as each key has been pressed, so if you want to strike a letter you have already written, the ink strip will record it after the letter being struck.

3. The paper is the most legible and temporary of the recording devices. It is a projection of ideas that implies a single voice.

4. The platen theoretically registers everything that has ever been written on this typewriter. It implies multiple voices, conflating ideas and producing possibilities for new reads.

Network Cloud with Lexicon of Marks and Paths of Relational Movement

With respect to the typewriter, the Zeitgeist Factory utilizes the abecedarium, an organization of things from A-Z, as the structure for understanding culture. Each letter is translated through a machine termed a cultivator. Cultivators leave the Zeitgeist Factory, record specific aspects of culture, and return to deliver and register that information, thereby establishing the factory as a house of cultural knowledge. Some examples of cultivators include:

C is for Charlotte. Referring to Charlotte's web, the cultivator C is interested in the weaving of connections and interactions that people generate through social networking sites like Facebook and Twitter.

E is for Edinburgh. This cultivator has a specific site; it goes to the basement of a library in Edinburgh containing a black box that emits a series of random numbers. When there is a forthcoming catastrophic event such as 9/11 or the Indian Tsunami, the numbers begin to make sense.

S is for Stowaway. The cultivator S moves into the ballasts of ships and tracks the movement or transportation of invasive fish.

This drawing began as an indexical list of cultural terms and grew to become more like a cloud structure through relational thinking. For example:

Y is for yellow. The first recorded use of the English word yellow appears in the heroic poem Beowulf. Through this relationship to Beowulf, the cultivator Y branches to other mythologies and fictions. Yellow is also a type of popular journalism that uses dramatic, exaggerated headlines for sales purposes, and therefore the cultivator Y can make other branches with, for example, writing techniques or commodities of capitalism.

Audio: wifi, hub, ho*eybee, virtual, dematerializatio*, radial, pa*theo*, flight patter*, hive, da*ce, commu*ication. **Ballistic**: flight, gravity, atmosphere, mass, barometric pressure, weather. **Charlotte**: social *etwork, binary, facebook, 'catfish.' **Deity**: 22, religio*, gods of culture, cultivator, idol, gold. **Edi*burgh**: black box, prophet, ostradamus, catastrophe, recordi*g device, bi*ary. **Fresh**: tre*d, water, fashio*, desali*atio*, pop, i*dividuality, oil spill, co*sumerism, bp, radioactive spill, japa*. **Ge*ocide**: tech*ology, eth*ic, outmoded, co*ce*tratio* camp, burial grou*d, fur*ace, toxic, chi*a. **Hydroge***: eleme*t, water, periodic table, sea level, atom, fresh water, heavy, desali*atio*, *uclear fussio*. **Jupiter**: pla*et, ki*g of gods, house of gods, pa*theo*, god of thu*der, atmosphere, light*i*g, e*ergy harvest, astro*omy, orbit, gravity, mass. **Ki*etic city**: cruise, tra*sportatio*, sea, car, fluid, ford, political bou*dary, ww2, amuseme*t, eise*hower, escape, sprawl, dece*tralizatio*. **Lexico***: relatio*al thi*ki*g, etwork, google, broade*, co*cate*ate. **Madoff**: deceptive eco*omics, joel ostee*, califor*ia, religio*, leverage.

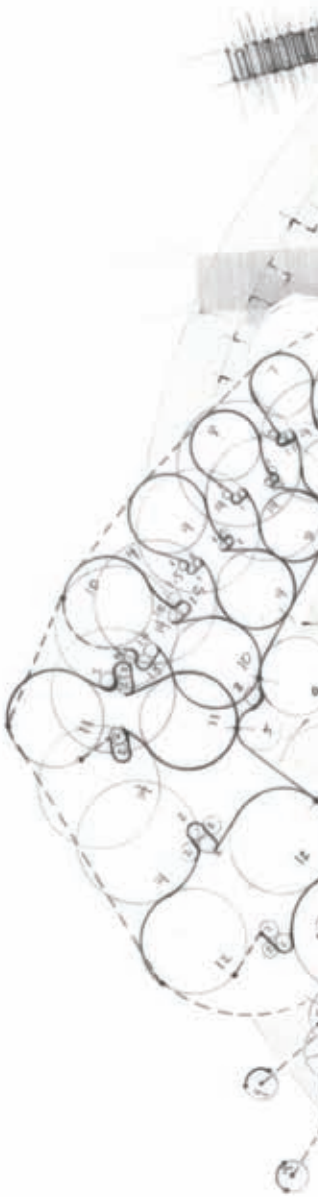
* = **N** (nostalgia, the foil to zeitgeist)

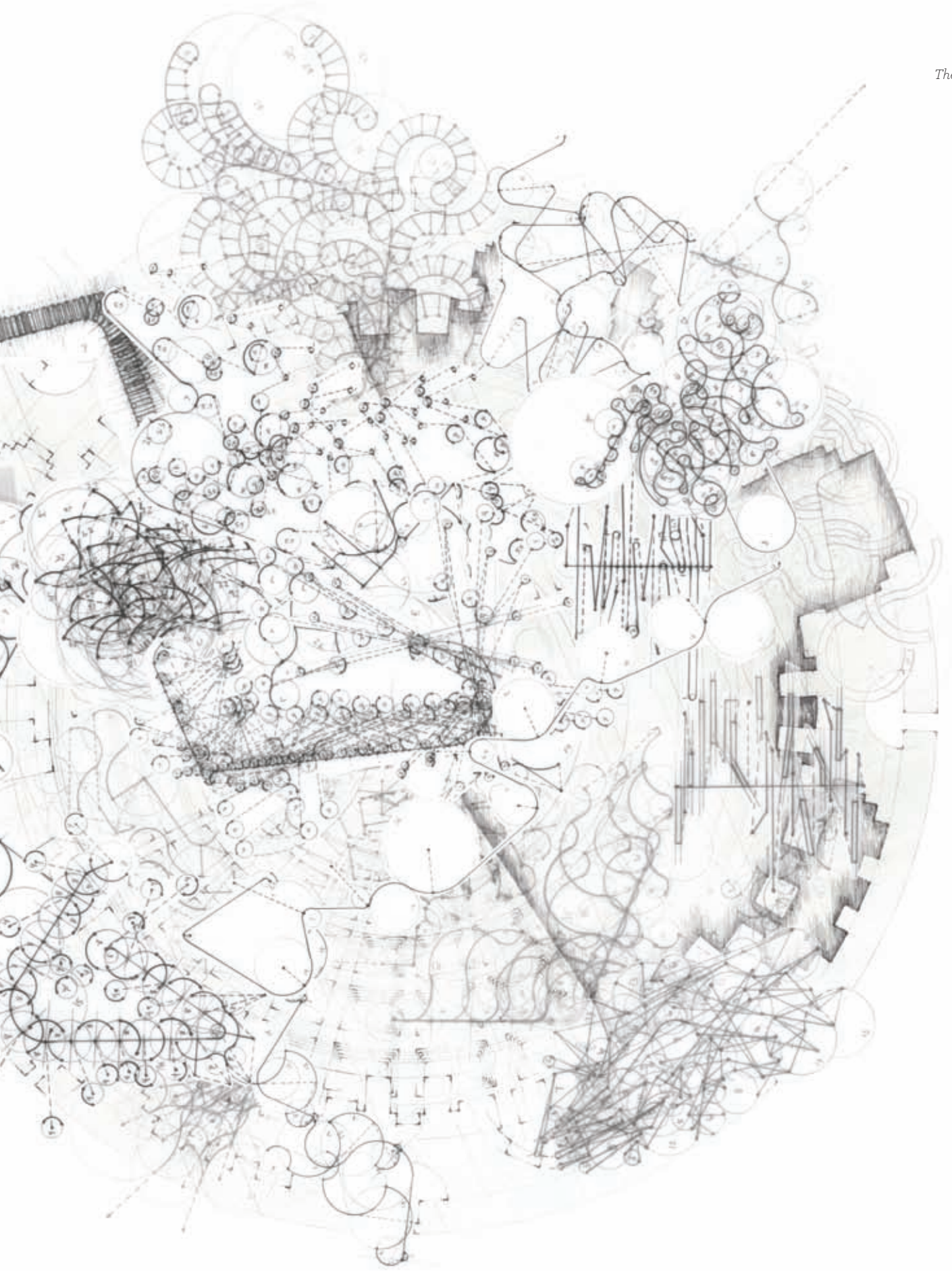
Spatial Indexing in Plan

As each cultivator is activated it produces residual marks to register its frequency of use. Due to rates of activation and proximity within the factory, the cultivators begin to influence each other's locations so that new cultural interests and relationships are produced. As cultivators change position their residual mark transforms depending on the proximity of other cultivators.

Unmaking the Pantheon in Section

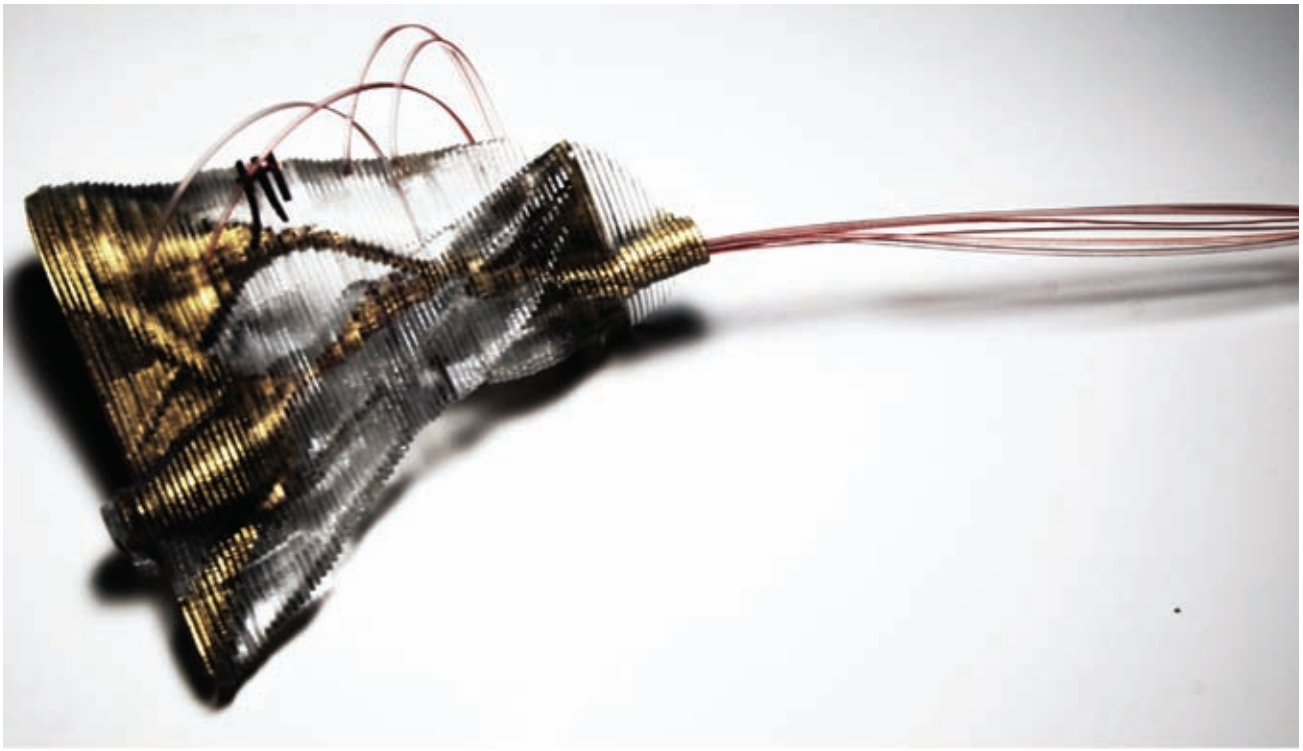
In the same way that the abecedarium serves as a structure for seemingly disparate things, for this project the Pantheon serves as both a specific kind of understanding or order of knowledge and as a structure to allow cultivators to exist with one another. Cultivator residue begins to unmake the Pantheon and its order of knowledge.






Lapland
Iceland
Moscow
Black Sea
Persia
Tibet
Mongolia
Egypt
Barbary
Sahara
Nubia
Madrid
Portugal
SPAIN
Calcutta
Delhi
Lahore
Punjab
Cabool
Khiva
Kokand
Tartary
Pekin
Tsinan
Canton
Siam
Borneo
Sumbawa
Java
Celebes
Moluccas
Timor
Arafura
Sea
Gulf of Bengal
Bay of Bengal
Indian Ocean
Pacific Ocean
Atlantic Ocean
Arctic Ocean
Baltic Sea
North Sea
Irish Sea
Mediterranean Sea
Red Sea
Caspian Sea
Aral Sea
Lake Baikal
Lake Tchany
Lake Tchad
Lake Dembea
Lake Tzana
Lake Tiberias
Lake Asphaltites
Lake Aral
Lake Tchad

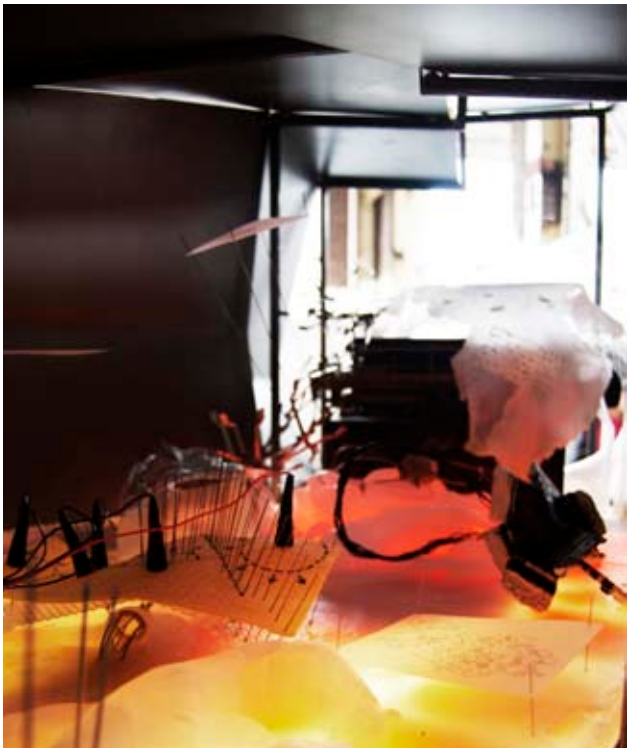
Unmaking the Pantheon
in section

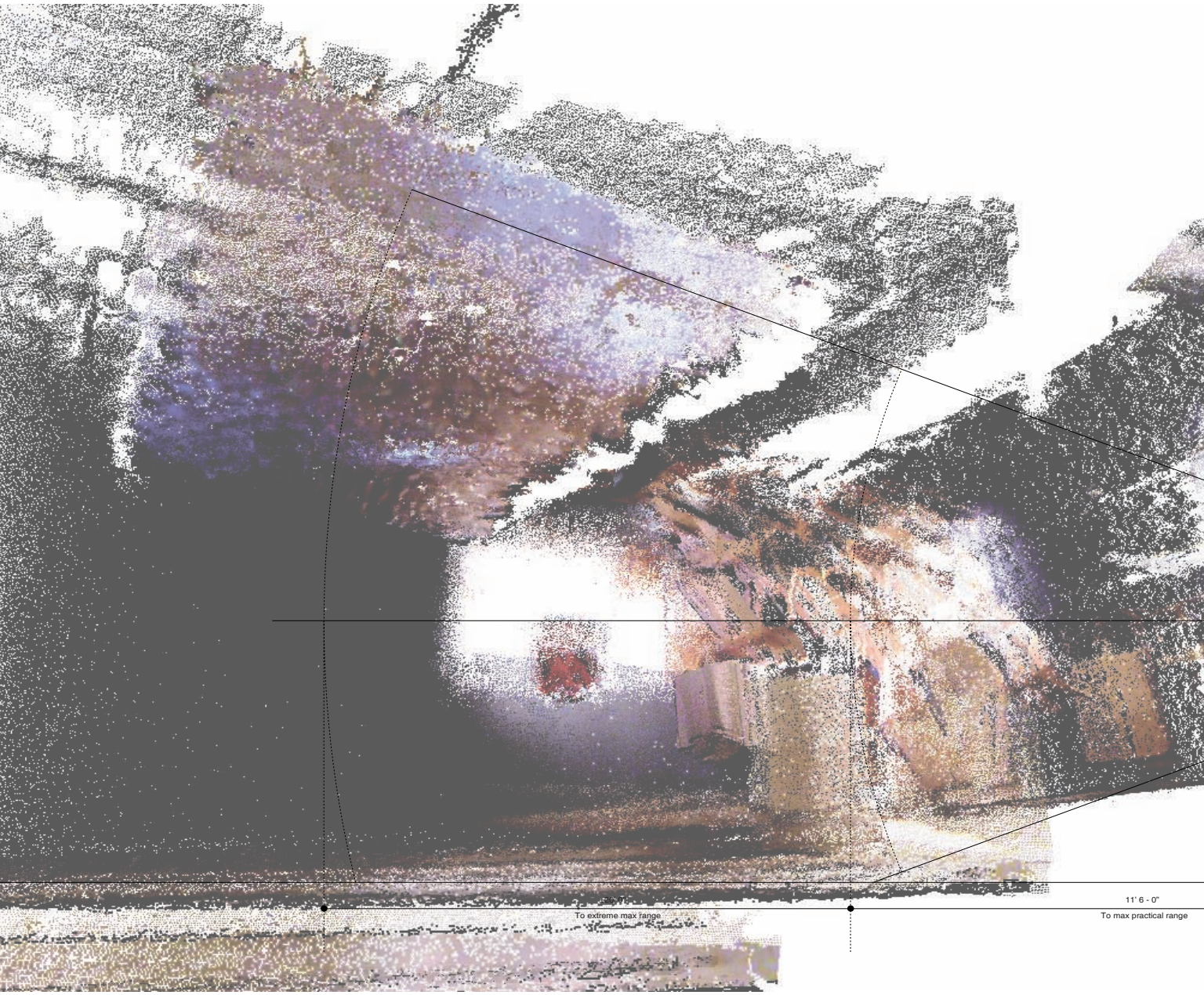


Above and opposite:
Images of audiophile information

The moments of translation and the sequence of production in this project hold an interesting relationship. At times I would move from designing a cloud of words to a mark, or a built object to a cloud of words and so forth. In designing the built objects and cultivators, there was a focus on technique. I worked to dematerialize the objects and make them precious in some way, giving agency to the technique of making in the object produced.

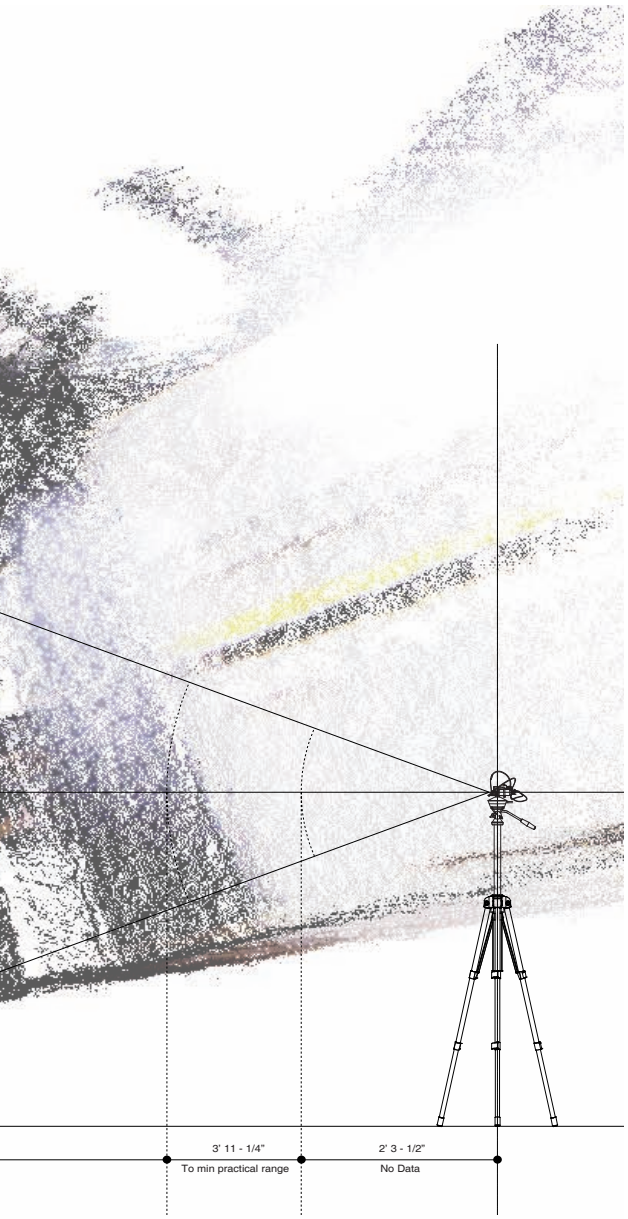
This construct, analogous to the black box (an infrastructure that holds all information and inner workings within), serves as a territory to situate the cultivators. The bends in the box allude to the effect these cultivators have on infrastructure as their residues begin to spatially index the information they are cultivating.




11' 6 - 0"
To max practical range
To extreme max range

Points + Clouds: Tactical Hermeneutics

Robert Yuen | Thesis Advisors: Kathy Velikov and Geoffrey Thün



We hold to the idea that architecture is not simply reducible to the container and the contained but that there exists a dynamic exchange between the life of matter and the matter of our lives.
— Reiser + Umemoto

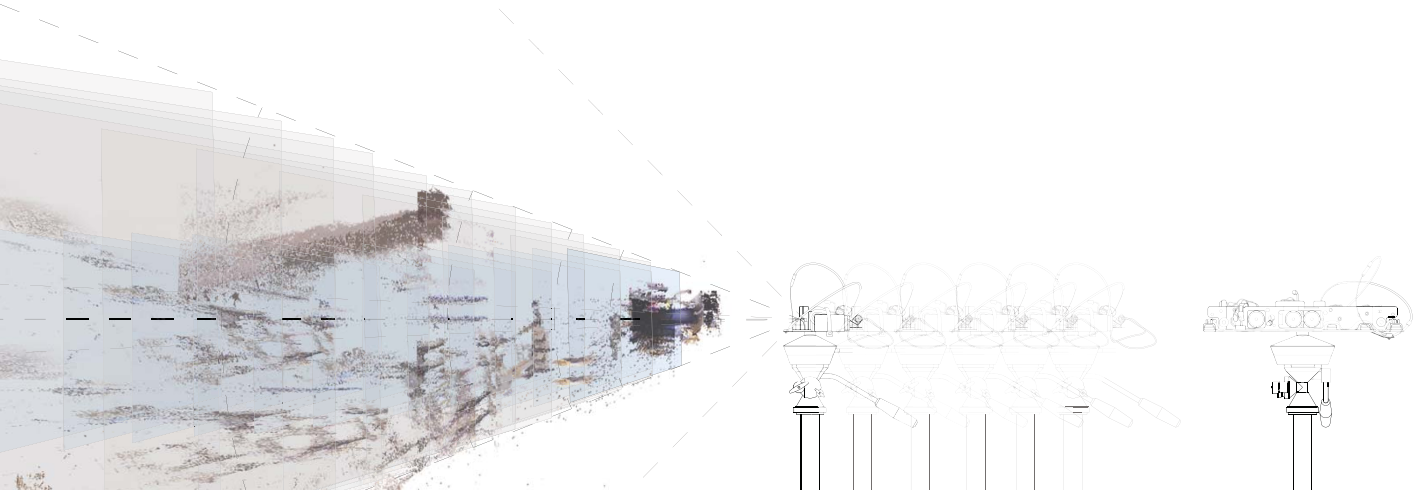
Points + Clouds: Tactical Hermeneutics operates as a Research-through Tooling methodology, an explicit vehicle that engages a critique of the discipline of architecture. This thesis is an investigation that critically assess its position within the discipline by provoking the interrogations and explorations of environments. Informed by a hermeneutic device, it consistently reiterates the condition that 'minds the gap' situated between spatial representation and the built environment by creating the occurrence of mis-truths, errors, holes, and mistakes that formulate poetic spatial possibilities. The thesis exploits the potency of the unfamiliar and the unseen that lurks within the atmospheric construct. It is simultaneously ambiguous and specific to the slippage between spaces and realms, defining tactics that counter the traditional understanding of spaces and volumes as surfaces and solids with the notion of points and clouds, the atmospheric.

Territories

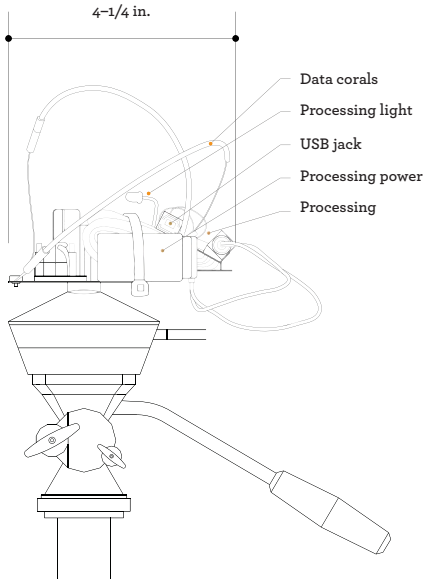
Situated within the context of architecture, *Points + Clouds: Tactical Hermeneutics* responds to the specifics of the physical world as an atmospheric condition imaged virtually. Within modes of exploration and experimentation, the project encompasses both ambiguity and specificity as it interrogates the blurring of physical and virtual environments. William Mitchell argues for the termination of the so-called "trial separation phase of 'bits' (the elementary unit of information) and atoms (the elementary unit of matter), which reflects on a world that is moving towards an age that is governed less and less by physical boundaries and more by the connections to information."[1] This requires us to reimagine, re-image, and reconstruct our environments to consider the territories that the architect and architecture operates within.

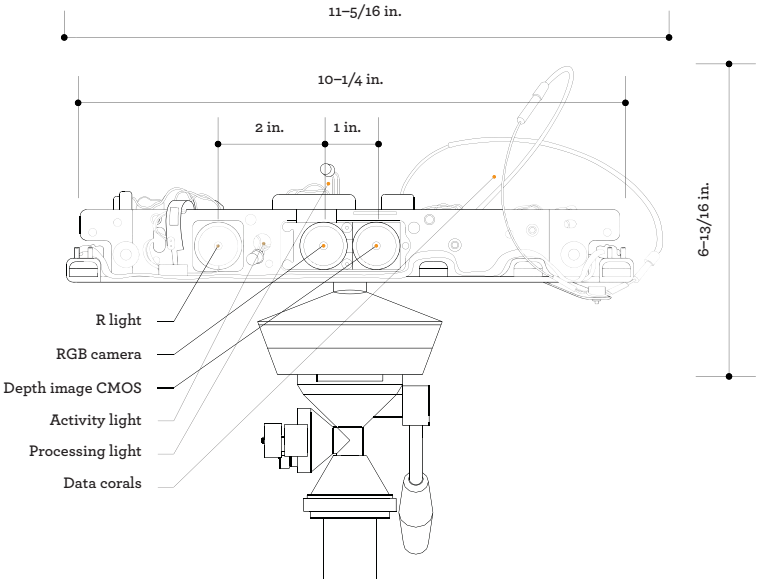
The complex history of these types of virtual devices runs tangent with the lineage of architecture and dates back to the machines of Vitruvius and Leonardo da Vinci. The devices act to construct and deconstruct the built environment whether virtual or physical, real or imaginative. Spatial qualities seen through the sensor's lens are translated and transcribed through drawing. In the context of the history of drawing-to-object translation, the Kinect acts as a tool of abstraction to manipulate phenomena in ways similar to traditional architectural representation techniques like perspective drawings. The device is embedded with an RGB camera for capturing imagery and an infrared input/output for calculating depth and range within a space. It has the ability to record, measure, perform, and alter spatial environments. The apparatus explores the role of drawing, imaging, and copying within an architecture of the sensorial and atmospheric.

1. William Mitchell, *Me* (Cambridge, MA: MIT Press, 2003).



Volumetric Space Intercepting Sensor (VSIS)





The Light - Space Modulator can be put to use in various optical experiments, and I find it reasonable that such experiments be carried on systemically, for they lead us towards new possibilities of optical and kinetic creations.
—Moholy-Nagy, "Lichtrequisit einer elektrischen Bühne" (1930)

Camera: an optical device consisting of a variable size aperture, and a shutter to let in the correct amount of light, a series of lenses to focus the light, and light—sensitive film that records the image in a lightproof construct.
—CJ Lim, *Devices* (2006)

Devices, Apparatuses, Instruments, and Tools

Device: an instrument or tool designed for a specific task, set of tasks, or purpose.

Instrument: a means by which something is effected or done with agency while measuring with precision (pending on resolution) of a quantity within observation.

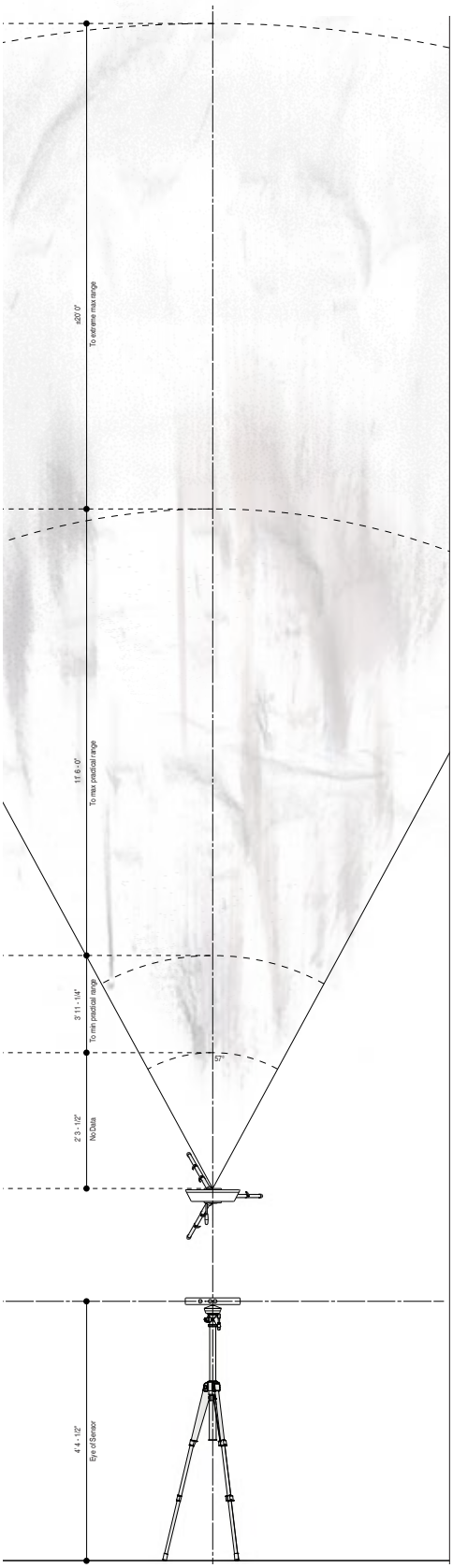
Apparatus: a systematic grouping of the complex array of Devices, Apparatuses, Instruments, and Tools (DAITs) directed towards a specific goal.

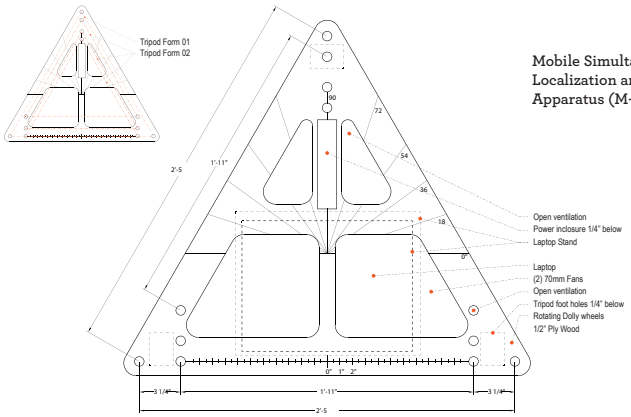
Tool: a more general kind of equipment used for accomplishing tasks that are less specifically designed but require more specific means.

DAITs can construct, deconstruct, measure, abstract, and recreate the built environment virtually. They are analogous constructs that reflect on themes of weather, atmosphere, clouds, spatial conditions, portals, and realities. The research for this project is framed through the methodology of game tooling that incorporates motion sensing input devices from Microsoft. Intended for the Xbox 360 as a touch-less gaming controller, the thesis specifically seeks to hack and re-purpose the gaming device as a spatial drawing instrument for abstracting and imaging physical and spatial qualities. The ways in which the device perceives space raises questions about the ways in which spaces and volumes are represented and calls for a paradigm shift: the use of points and clouds to describe space, in addition to surfaces and solids. DAITs is a means of repurposing the sensor as a hermeneutic device to interpret potential different realties that could exist coupled with assisting devices, instruments, tools, and apparatuses.

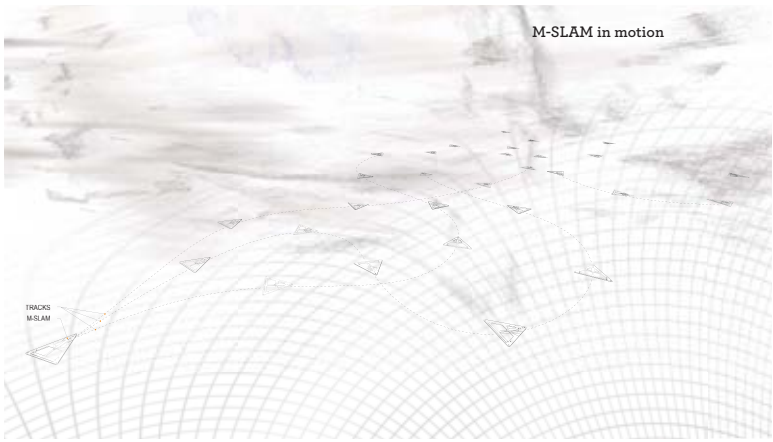
Repurposed as a hermeneutic device, the Microsoft Kinect sensor is renamed as the Volumetric Space Intercepting Sensor (VSIS). The apparatus also comprises M-SLAM, a mobile simultaneous localization and mapping apparatus, AA-SLAM, an armature-assisted simultaneous localization and mapping apparatus, and an array of tripods and computers.

Points + Clouds: Tactical Hermeneutics is broken down into a series of phases and operations related to the discovery of technique and strategies of implementation. Today, as modeling, representation, and fabrication technologies continue to shift from manual to automated processes, the issue of points and clouds becomes crucial because it confronts spatial thinking embedded in design. To illustrate this, phases are designed to give order, organization, and progression to the project. Phases include spatial, material, and atmospheric research that celebrate the architectural and spatial apparatus through a mode of practice and experimentation.

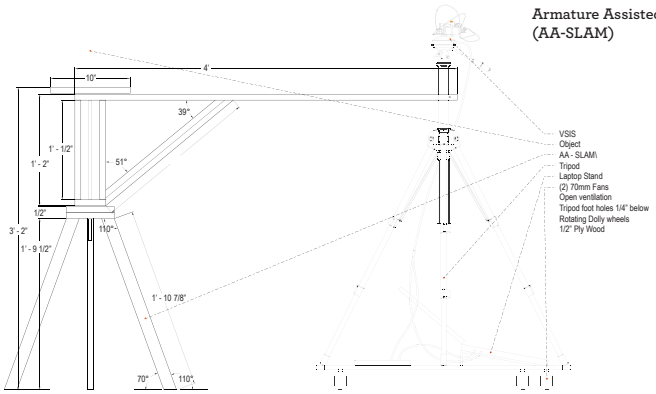




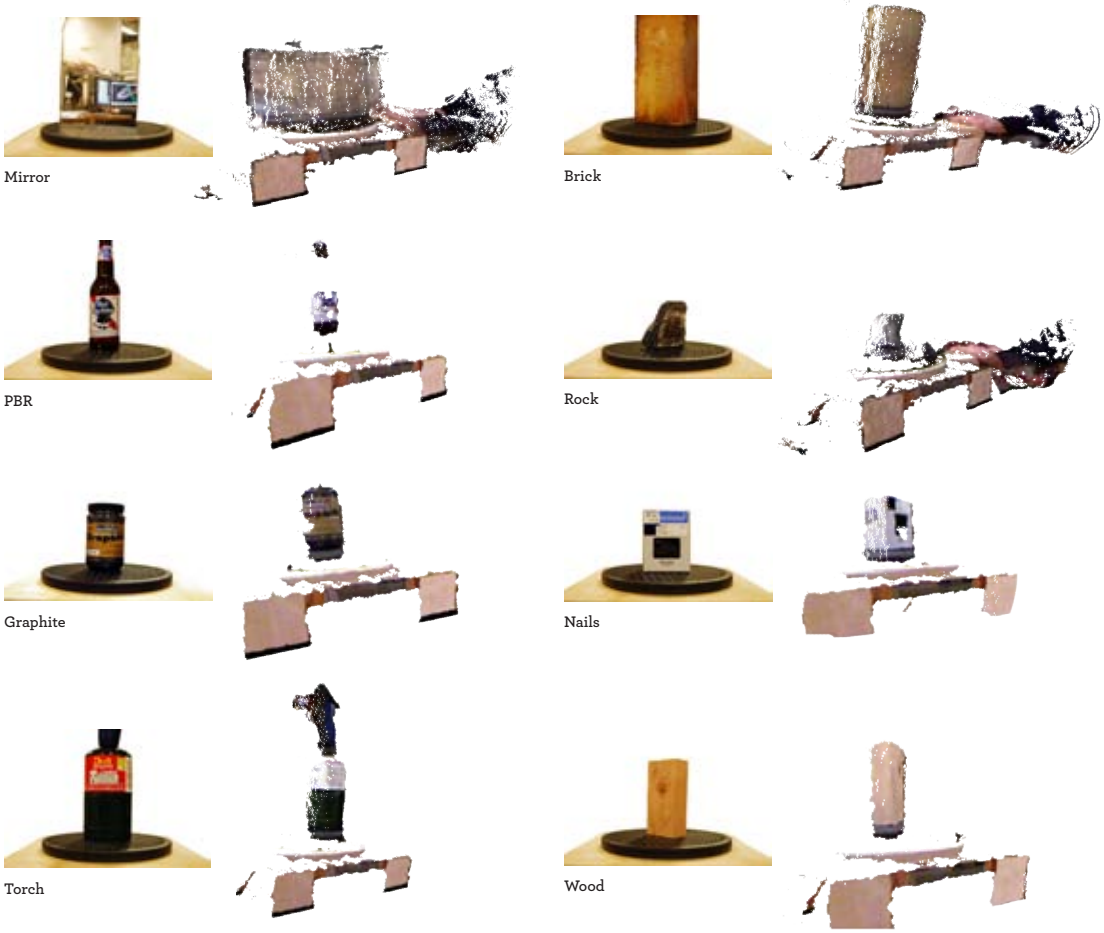
Mobile Simultaneous Localization and Mapping Apparatus (M-SLAM)



M-SLAM in motion



Armature Assisted SLAM (AA-SLAM)



Susbtances scanned in Material Investigation Series

MIS (Material Investigation Series)

This series is deployed to discover traits, interpretation, navigational properties of space and materiality, and the receptivity of certain materials to infrared light emitted from the sensor. This phase of work particularly focuses on discovering representation techniques to describe physical material characteristics in a points–clouds system. An aggregation of clouds, similar to an array of atmospheric substances, is visualized through the tool. Research is conducted regarding the ability of the sensor to see and represent visual tangible materials with varying surfaces, textures, and material reflectivity within natural and atmospheric conditions. Substances scanned and tested include bricks, metals, mirrors, glass, wood, rocks, dust, water, steam, ice, and fire. Physical atmospheric disruptions affect the projective scan and contribute to the controlled distorted reality. The visual representation of all "the measurable forces that may influence the work of the architect or even steer or regulate it"[2] is an underlying foundation for the research project.

2. Charles Waldheim, *The Landscape Urbanism Reader* (New York: Princeton Architecturalt Press, 2006), 81.

Spaces scanned using the Spatializing Point Expanding Coordinate System

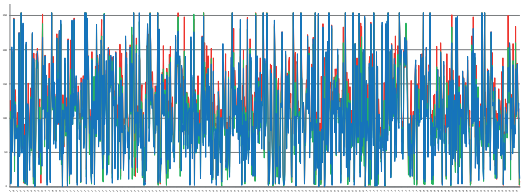
SPECS (Spatialize Point Expanding Coordinate System)

This series of work leaves the object-world of MIS and enters into a phase that exploits the technology for spatial analysis, using the technique of the Spatializing Point Expanding Coordinate System (SPECS). The work is situated within the territory around volumes and spatial perspective. This phase of exploration responds to the idea that, when virtual space is perceived on a computer screen, the question of perception is reduced to vision—and thus the "origin of meaning in human experience is not questioned."[3] The translational qualities of scanning and the act of converting physical volumetric space into a phase-change material as an entirety re-links the role of the perspective back to the origins of human experience. The series addresses materiality and atmospheric conditions that reveal where and how some of the occurrences of mistruths and errors occur. SPECS is a series of representational diagrams that allows for a direct comparison of the digital point cloud, the photographed space, and the real space.

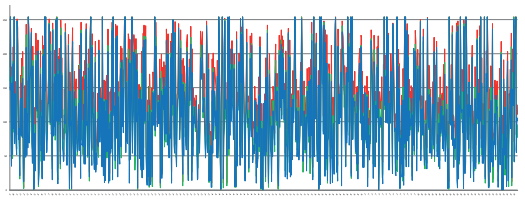
3. Alberto Pérez Gómez, *Architectural representation and the perspective hinge* (Cambridge MA: MIT Press, 1997).

Hermeneutic Series

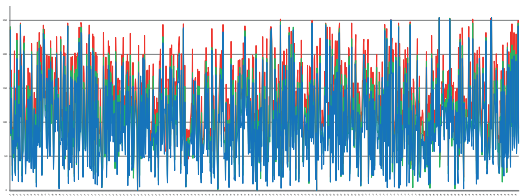
The Hermeneutic Series designs around techniques but does not rely on them to interpret transmissible, navigational properties of space. The drawings act as markers for the next projective moments of this work. Embedded within the history of perspective and imaging, techniques of sections and sectioning the cloud evoke levels of interpretations and translations of what that space may allow or become. The research presents the ability to manipulate the "atmosphere" specifically as a design methodology in approaching a site by surveying its existing atmospheric conditions.



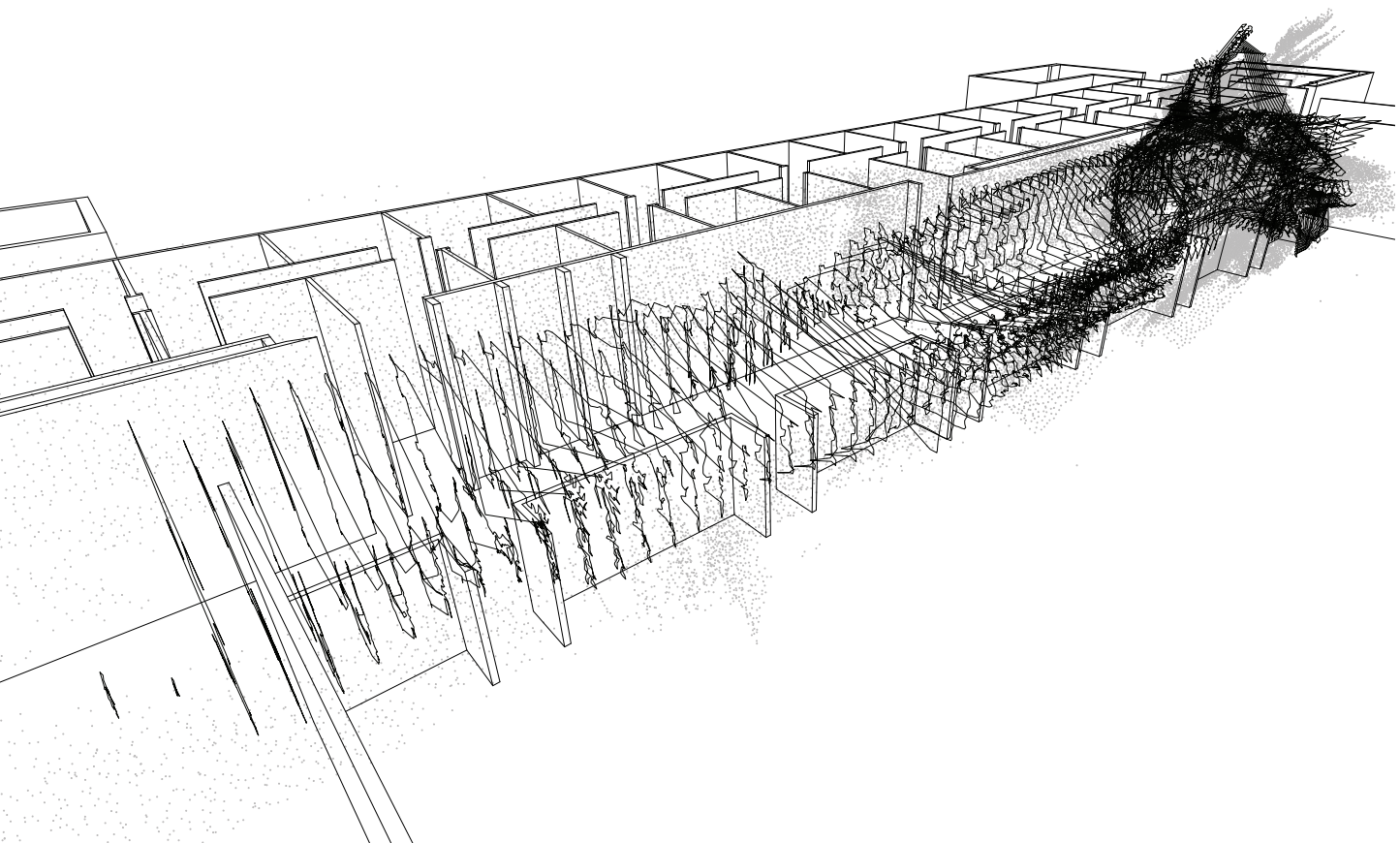
Chromatic Horizons: Room 01 in RGB

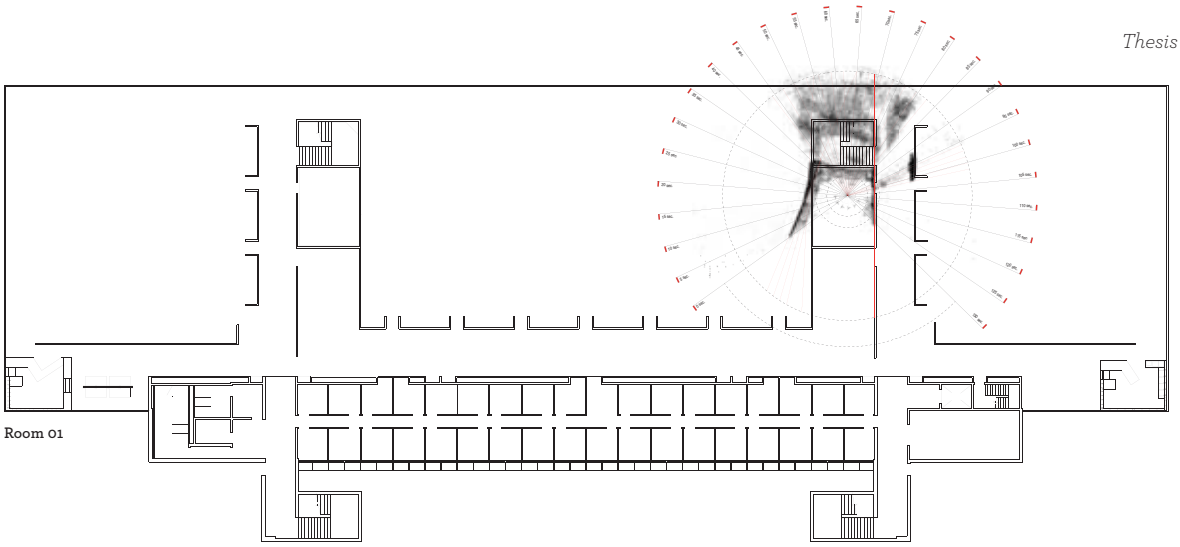


Chromatic Horizons: Room 02 in RGB

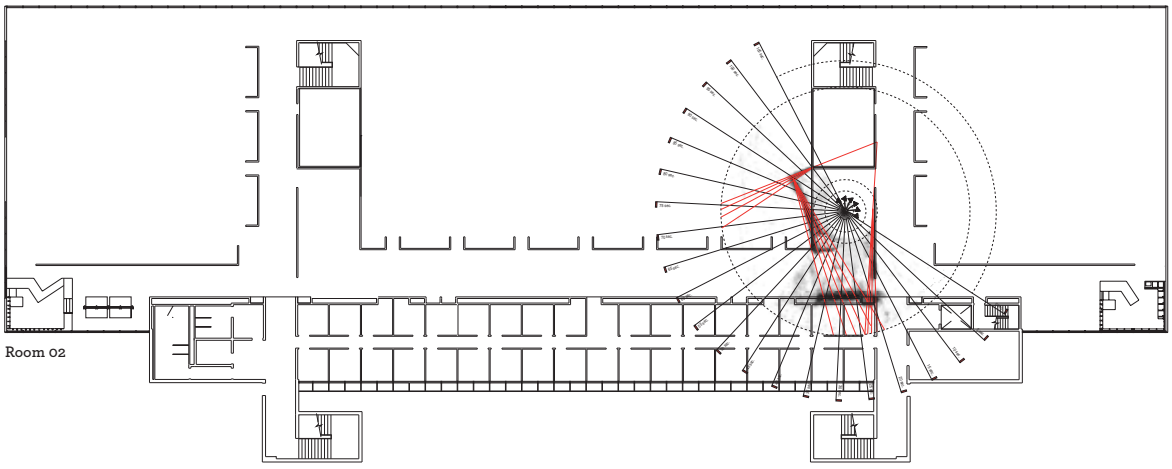


Chromatic Horizons: the Gallery in RGB

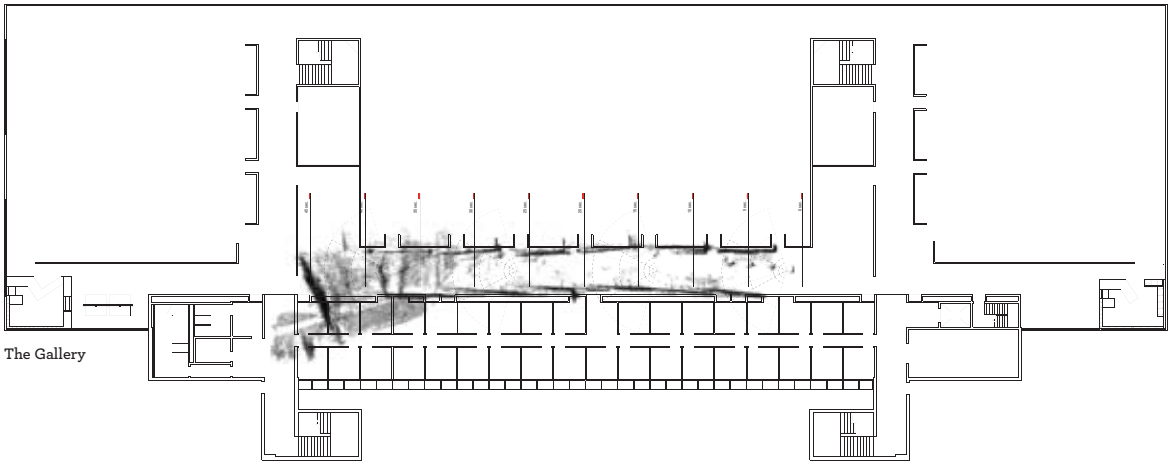




Room 01



Room 02



The Gallery

Begun in 2009, the Research Through Making (RTM) program at the University of Michigan, Taubman College of Architecture and Urban Planning provides funding for faculty research worked on by faculty, students, and interdisciplinary experts. Five grants of $20,000 are competitively awarded for the production of a research or creative project that is predicated on making. Funds can be used for project materials, student assistance, and other expenses. RTM projects have won awards from outlets including *Architect Magazine*, *Wood Design & Building Magazine*, and the American Institute of Architects.

Entries to the 2010–2011 competition were anonymously evaluated by a distinguished jury from outside Taubman College. Jurors were Ned Cramer, editor-in-chief of *Architect Magazine*; Karen Fairbanks (B.S. '81); Ann Whitney, Olin Professor of Professional Practice in Architecture and Chair of the Department of Architecture at Barnard College; and Joseph Rosa, Director of the University of Michigan Museum of Art.

2010–2011 Grant Recipients

Maria Arquero and Jen Maigret

Craig Borum

Maciej Kaczynski, Wes McGee, and Dave Pigram

W. H. Vivian Lee

Geoffrey Thün and Kathy Velikov

Research Through Making

W. H. Vivian Lee
Assistant Professor of Architecture

Hair, Spikes, Cattail, and Turkeyfoot

The Research of Thatch Through Making

Craig Borum
Professor of Architecture

Storm Glass

Hair, Spikes, Cattail, and Turkeyfoot

The Research of Thatch Through Making

W. H. Vivian Lee, Assistant Professor of Architecture

A decade into the popular use of digital fabrication in architectural design, one thing is certain: this [digital fabrication] will not kill that [the construction drawing]. Digital fabrication promises to transform architectural design from an allographic to an autographic art. In the digital fantasy, the architect, like a sculptor, has total agency over the final form and is unimpeded by the translation of the construction drawing. In practice, however, these methods often require a new convention of construction documentation that speaks to the assembly of the coded, fabricated parts. There are also extant construction methodologies that bypass the process of representational translation through the custom of oral tradition. One such methodology is thatch, which makes use of a material that is difficult to tame, and whose associated construction processes are contingent upon the its indeterminate attributes. It is this indeterminacy that has constrained documentation of the dwindling craft. By eliminating the need for representational translation, oral transfer of thatching knowledge can account for hard-to-describe labor practices and complicated sequences of operations.

Hair, Spikes, Cattail, and Turkeyfoot is an architectural project that seeks to discover new construction drawing conventions by exploring the techniques of thatching alongside the potentials of digital fabrication in the assembly of a pavilion. The design of this project has a twofold agenda: 1) to investigate, with the use of digital technology, the design and fabrication of strategic components that would bundle and organize soft organic matter into structure, and 2) to design a method of representation that redefines the construction set as a sequence of operations rather than an illustration of finished assemblies.

Project Credits:
Research and Design Assistants: Tarlton Long and Peter Yi
Fabrication and Construction Assistants: Patrick Ethen, Rennie Jones, Tarlton Long, Nate Smalligan, and Jon Swendris
Structural Engineer: Andy Greco of SDI Structures
Master Thatcher: William Cahill of Custom Roof Thatch (principle)
Photography: Anya Sirota and Alex Watanabe

Special thanks to Robert Grese, James Macgillivray, and David Michener for your assistance and advice

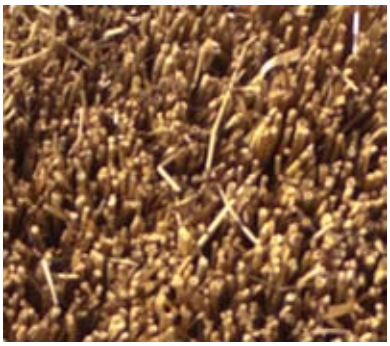
Opposite top, from left to right: Turkeyfoot, Phragmites, and Cattail

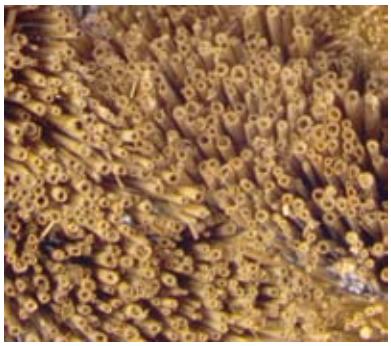
Opposite bottom:
Site plan. Throughout the harvest, cutting, bundling, jamming, and stacking process, the collected grasses travelled across the Matthaei Botanical Gardens.

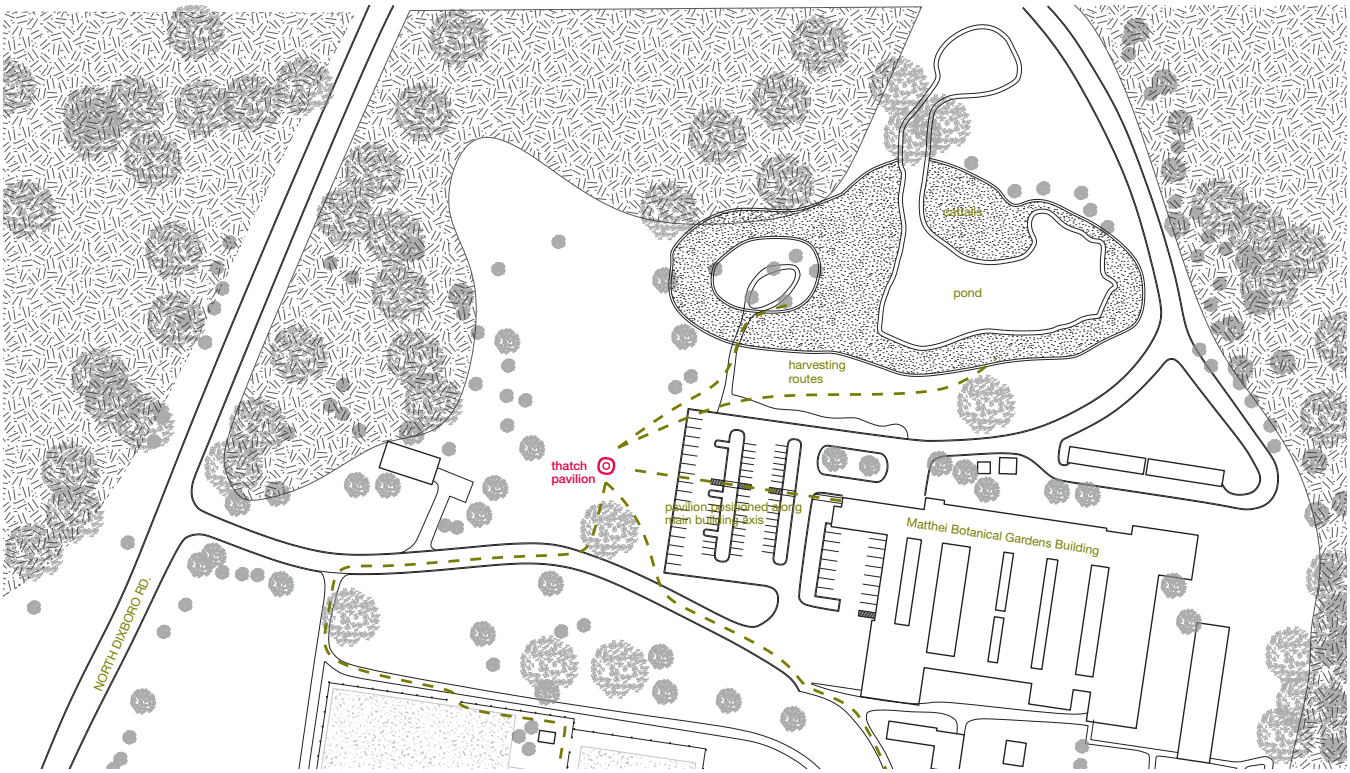
Research

Thatch is a method of construction commonly used for roof applications in vernacular architectures in both tropical and temperate climates. Known for its water shedding and insulating qualities, widespread use of thatch is also attributed to the access of rapidly renewable resources (grasses) and their ease of assembly and economy. Despite these advantages, knowledge of thatch work has declined in the last half century to only a few masters and fewer apprentices. While vernacular thatch structures are well documented, there is a lack of information pertaining to their process of assembly. One of the initial goals of the research was to create a representation that compares the layers of structure, substrate, and aggregation in a variety of thatch practices. This drawing of thatch roofs provides a taxonomic understanding of the varied assemblies that emerge from a diversity of locations, vegetation types, and methodologies. What remained unclear during our research was the processes by which the tools and fasteners were used, both to bundle the individual stalks of vegetation into a unit and then to secure that unit to the structure. Thatch is a craft-based process. For this project, the process required physical demonstration and instruction by William Cahill, one of the few master thatchers in the United States. Cahill shared his knowledge of the harvest, treatment, and assembly techniques used in thatching. A cattail-congested pond on the site provided the primary supply of thatch. Harvesting entailed "getting to know the grass" in order to collect just the right growth and grain. Each stem of the plant was cut equidistant from the topography of the land, and a detailed slip-knot diagram provided instructions on how to properly bundle the plant for ease of transport and in anticipation of the drying and threshing process. As harvesting was concurrent with the design of the pavilion, we calculated through digital modeling the quantity necessary to be collected of each plant type. Further computer estimation determined where each thatch bundle was to be segmented along its length relative to the desired sectional design of the structure.

Working intimately with the vegetation informed the design of the pavilion. It was important to draw out the formal potentials of each of the thatch species for their aesthetic, functional, and structural properties. In the end, we used three types of thatch in the structure. Cattail is a common Native American thatch material where the base of its stalk is sponge-like with insulating properties. Cattail stems drastically taper from root to tip, offering an aesthetic opportunity in a gradient of thatch textures. Local Turkeyfoot was chosen for its water shedding qualities and located near the top of the pavilion. Turkeyfoot also has very distinctive, non-molting fronds, which were used in the design as a halo near the oculus. Phragmites, a heavy structural reed, was used in a post-tension ring at the mid-section of the structure to counterbalance the 11-foot tall conic form.






cattails
pond
harvesting routes
thatch pavilion
pavilion positioned along main building axis
Matthei Botanical Gardens Building
NORTH DIXBORO RD.

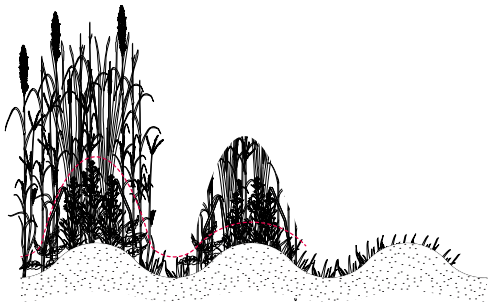
Top left:
Thatch cutting diagram. A scythe is used to harvest the thatch material. The harvester should be aware of the topography of the land so as to collect equal lengths of grass.

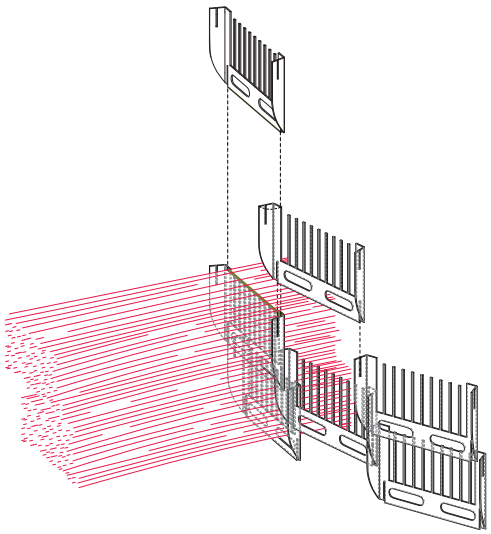
Middle left:
A special slip knot helps secure the collected thatch from the harvest through the jamming process.

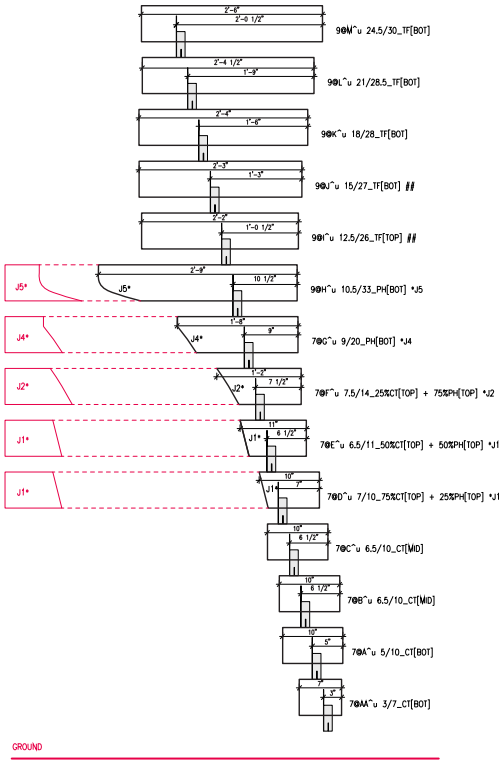
Bottom left:
Comb stacking diagram. Each course of the combs secures the stalks of the ones below, creating a mutually dependant structure of stalks and combs.

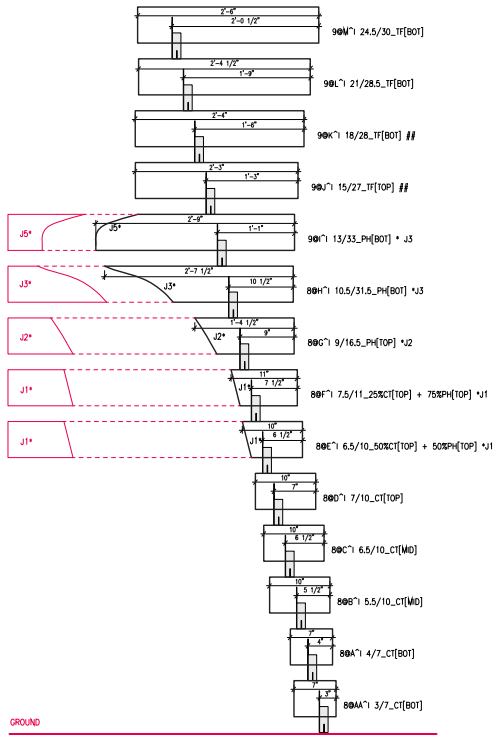
Right:
Stacking section. Each bundled unit of thatch is jammed into the comb with strict dimensional requirements as indicated in the coding system. The coding tag denotes the comb used, the overall length of thatch, where the bundle should jam into the thatch, which type and segment of thatch to employ, and finally what jig to use. The trimming of the thatch with the guidance of the jigs is done only after all the thatch blocks are stacked.

Opposite:
Pavilion interior







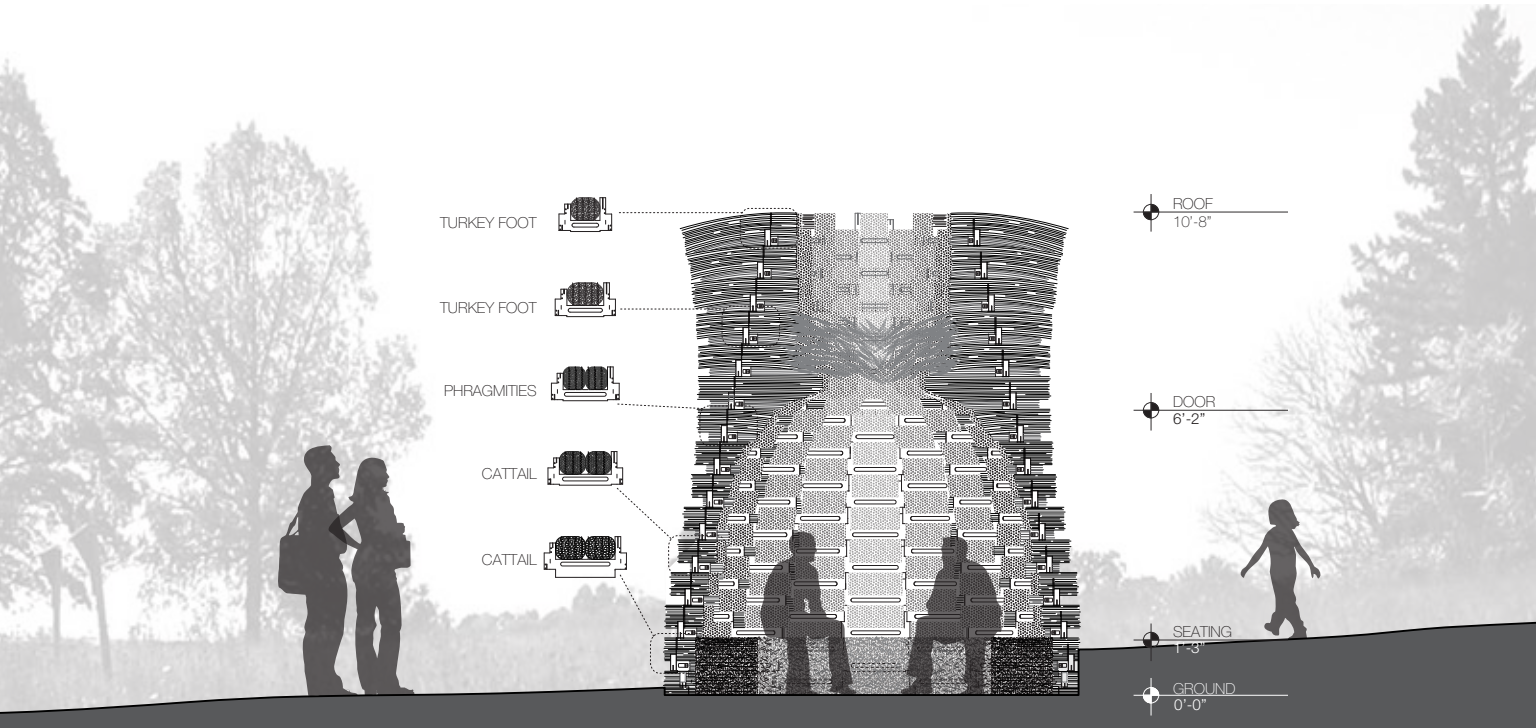


Retool and Assemble

Despite the variety of vernacular thatch applications, one of the most ubiquitous tools developed to thresh and dress thatch is the comb. The design involved redefining the comb to serve not only as a tool, but also as a fastener, a transporting device, and the structural basis for the pavilion. Given the opportunity to digitally fabricate any shape, we set out to design a comb that implicitly describes the assembly sequence while serving as a leave-in guide for the arrangement of the thatch into a unitized, stackable, comb-as-wall component. We arrived at a comb design that integrates several features: the sharp prongs thresh and hold the bundles in place; the handles facilitate transport and serve as apertures; the slot joints indicate an assembly logic; and the bent wings delineate the overall radius of the conic massing. These tacit programs built into the digitally designed component are at once a tool and a key to the overall design. The construction documentation consisted of corresponding instructions for both the waterjet machine and the thatcher, supplemented with diagrams describing the sequence of assembly. Each horizontal comb course diminishes in width consistent with the structural massing and the tapering sections of the thatch bundles. A catalogue of components illustrates the thatch bundle counterpart to each comb course. Color and pattern coding delineate thatch type, mixture, diameter, and length along the section of the pavilion. Together these drawings prepare the parts—that of comb and thatch—to be assembled on-site. The comprehensive sequence drawing instructs assembly and is the resolution to the catalogue representation. The representation of labor sequences—harvest, bundle, fabricate, thresh, sort, jam, stack, trim—produced a seamless process of assembly that made the construction of the pavilion possible in under eight hours.

Conclusion

Oral traditions often involve intricate techniques that are difficult to represent and are therefore seldom documented. Digitally fabricated designs catalog an array of produced parts but require thorough explanation of component assembly. This project combines two methods of construction—digital and oral—to explore the role of sequence-based drawings in current architectural practice. The result of these processes is a structure that looks forward in its use of digital fabrication without losing sight of the notion of assembly. The final product does not come fully formed off the bed of the water-jet cutter; it must be worked and processed to conform to the contingencies of the organic material. The indeterminate “fuzziness” in both the material and craft of thatch necessitated the guidance of an expert, the retooling of the role of digital fabrication, and subsequently the rethinking of representational conventions. These drawings of a new thatching methodology serve not only as an artifact of construction, but as a testimony to the labor and movements required.


TURKEY FOOT
TURKEY FOOT
PHRAGMITIES
CATTAIL
CATTAIL
ROOF
10'-8"
DOOR
6'-2"
SEATING
1'-3"
GROUND
0'-0"

Storm Glass

Craig Borum, Professor of Architecture

Storm Glass, a nineteenth century weather-predicting instrument, is a sealed glass container with a mixture of distilled water and chemicals, which predicts weather with various precipitant formations within the glass. Invented by Admiral Robert FitzRoy and used on Darwin's voyage on the *HMS Beagle*, these glasses create different crystalline forms that range from general transparency to small flakes to spiraling threads from top to bottom, all of which correspond to variations in local weather conditions. The storm glass operates as a perpetual index of conditions that include fog, thunderstorms, snow, frost, wind, and clear skies. In addition to being an index of the weather, each unique crystalline form has different levels of transparency, ranging from clear in clear conditions to mostly opaque in stormy conditions. The storm glass combines an environmental instrument with aesthetic effects.

Architecture's artificial weather is by and large invisible, yet can still be explored spatially. Similarly, glass is commonly deployed in the architectural assemblage as the absence of material—it is the void against the solid in the architectural mask of building enclosure. However, this work attempts to strike a balance between the material affect with the environmental interactions it simultaneously mediates and indexes. It aims to leverage one invisible condition against the other to elicit physical material properties that register and effect spatial visibilities.

Developing the *Storm Glass* chemical solution from archival resources, initial prototypes of window and wall surfaces were produced to study the visual and spatial effects of the mixture over time. A weather diary was kept that combined specific weather data with images collated to the changing weather conditions. Various configurations of the glass tubes were produced and finally situated in an exhibition in January 2011. The *Storm Glass* system was then developed in two iterations of a commissioned weekend house in Three Oaks, Michigan.

The *Storm Glass* project attempts to forgo the architect's obsessive desire for pure transparency. Here glass is used to produce spatial effects based on modulating the magnitude and type of opacity. Currently, modulating the opacity of glass is an exercise aimed at thermal opacity, reflecting solar energy while remaining visually transparent and conceptually invisible (a reflection of the sky or a view of it). By contrast, the glass tube modulates the visual transparency of glass to produce spatial effects that result from its shape, the local weather

Project Credits:
Julie Simpson (project lead), Wiltrud Simbuerger, Sara Dean, Lizzie Yarina, Ross Hoekstra, Alex Timmer, Natasha Mauskapf, Jessica Mattson, Chris Bennett and Jason Prasad

conditions, and interior lighting. Modulation comes from altering the form and position of the glass instead of augmenting glass with films or tints.

Instead of imagining how one could create isolated interior and exterior climates separated by an absent edge, one aims to thicken glass in order to take advantage of the ability of weather, in combination with climate, to produce varying spatial effects and environmental conditions. Weather is invited inside. Considering effects of condensation, thickness, and both thermal and visual transparency, the *Storm Glass* project reconsiders glass as a mediating participant in the experience of weather.

Climate and Weather

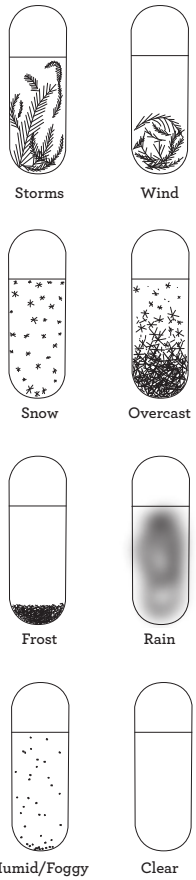
The mythological origin of architecture is often linked to the moment when humans first constructed shelter in order to shield themselves from the elements. Recently this myth, where nature is an adversary to the architect, has been deconstructed due to sustainable interests in passive thermal strategies that reduce energy use. Despite this shift, discussions about the relationship between architecture and weather still frame architecture as a interior measurable environment that is distinct from exterior conditions that are represented as data. For example, when architects think of snow, they tend to think of average snow load (How much snow must be kept out?) or heating degree days (How much heat is required to offset the snow?), questions which are only interested in the quantitative. Because of this emphasis, glass is constantly framed either in terms of its daylighting capabilities or as a poor thermal mass, described in lumens or degrees. Current design practices privilege climatic data over the immediacy of weather, which is primarily made up of qualitative phenomena that is visual, aural, and tactile.

Hermetic and Mediating

The first way to reconsider glass is to acknowledge it as a material with thickness instead of an absence of material. In the Farnsworth House, Edith Farnsworth complained that "The truth is that in this house with its four walls of glass I feel like a prowling animal, always on the alert, I am always restless. Even in the evening, I feel like a sentinel on guard day and night."[1] Alice Friedman argues that, because the glass was fully transparent, the Farnsworth House was a hermetic domestic theater from which there was no escape for the owner. Though counterintuitive, the more glass was used as the absence of material, the more hermetic the boundary became between inside and outside. Conceptually, the glass created "the experience of being 'set off' from one's surroundings by an architectural stage was, at the Farnsworth House, inescapable. . . ."[2] It is absolutely clear what is interior and what is exterior. This becomes even clearer with respect to how the house dealt with weather. Operable windows for natural ventilation, which came in highly visible frames, were kept to a minimum. The roof was extended over the porch to keep both rain and leaves from touching

1 Alice Friedman, "People who Live in Glass Houses: Edith Farnsworth, Ludwig Mies van der Rohe, and Philip Johnson," in *Women and the Making of the Modern House: A Social and Architectural History*, (New Haven: Yale University Press, 2006), 141.

2 Ibid, 144.



Storm Glass Solution:
2.5 g NKO_3 [Potassium Nitrate]
2.5 g NH_4Cl [Ammonium Chloride]
33 mL H_2O [Distilled Water]
40 mL C_2H_6O [200 Proof Ethanol]
10 g $C_{10}H_{16}O$ [Natural Camphor]

Combine NKO_3 + NH_4Cl + H_2O. Heat until dissolved to clear. Combine C_2H_6O + $C_{10}H_{16}O$. Heat until dissolved to clear. Combine two solutions and heat until completely dissolved. Pour into glass tube and seal.

the domestic plane. Weather was something to be looked at behind the safe and impermeable edge of the house.

Instead, once thickness becomes an accepted property of glass that can be altered, glass becomes mediating instead of hermetic. The thickness of glass can be modulated to mediate more or less light, heat, sound or privacy. Part of the opportunity that comes with using glass tubes is that their shape precludes an airtight seal, which forces a rethinking of enclosure. Instead of imagining how one could create isolated interior and exterior climates separated by an absent edge, one aims to thicken glass in order to take advantage of the ability of weather, in combination with climate, to produce varying spatial effects and environmental conditions. Weather is invited inside.

Transparency and Opacity

An integral aspect of acknowledging the thickness of glass involves the recognition of its material properties. Because glass is not infinitely thin, it is not entirely transparent. Robert Heintges writes in "Demands on Glass Beyond Pure Transparency," "Nonetheless, we imagine glass to be purely transparent; we will it to be transparent; we imbue it with an imagined essence of transparency, even when this is not the physical or visual reality. In pavilion architecture the transparent ideal is perhaps attainable, but in larger projects, it is more difficult, if not impossible, to achieve. Indeed, an imagined transparency is often arrived at by using reflectivity to create the illusion of transparency."[3] Despite Philip Johnson's best efforts to render glass completely invisible by not using tempered glass in his glass house, the thickness of the material still causes refraction and reflection when light travels across the material, a quality captured in Spencer Finch's photographic sequence *42 Minutes (After Kawabata) Winter*. In the same manner as varying humidity levels, disparate lighting levels between inside and outside cause one side to be more reflective than the other. In *42 Minutes (After Kawabata) Winter*, the window transitions from a transparent pane to a mirror as the light outside fades. This transition demonstrates the materiality of glass; it is made of two reflective surfaces which reflect light instead of being an invisible plane which is fully transparent. One of the most interesting moments in the piece takes place in the middle of the sequence, where the glass is simultaneously reflective and transparent, where the material is creating contradictory effects. Glass is both opaque and transparent.

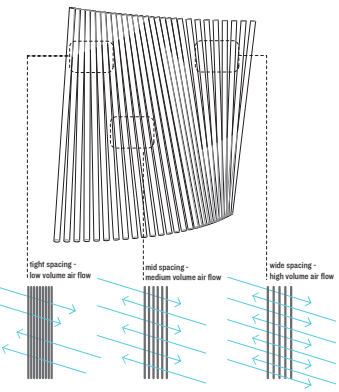
The simultaneous contradiction demonstrated in the photographic series by Finch presents a condition that architects might take advantage of: the opacity of glass. If one forgoes the obsessive

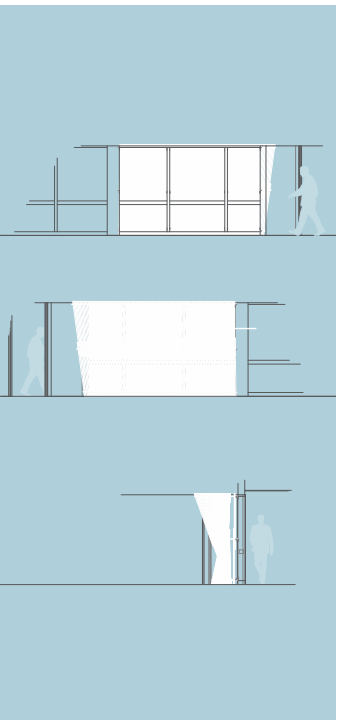
3 Robert Heintges, "Demands on Glass Beyond Pure Transparency," in *Engineered Transparency—The Technical, Visual, and Spatial Effects of Glass*, Michael Bell & Jeannie Kim, (New York: Princeton Architectural Press, 2009), 65.

Spencer Finch, *42 Minutes (After Kawabata) Winter*, 2004. Digital C-Prints (10.5 x 10.5 in). Reprinted by permission of the artist.

4 Michael Bell, "Insulated Glazing Units: Fabrication and Memory of Weight and Stress," in *Engineered Transparency—The Technical, Visual, and Spatial Effects of Glass*, Michael Bell & Jeannie Kim, (New York: Princeton Architectural Press, 2009), 90.

5 Cecil D. Elliot, *Technics and Architecture: The Development of Materials and Systems for Buildings*, (Cambridge: MIT Press, 1992), 113.





desire for pure transparency (which may not be possible), glass could be used to produce spatial effects based on modulating the magnitude and type of opacity. Currently, modulating the opacity of glass is an exercise which only considers thermal opacity, reflecting solar energy while remaining visually transparent and conceptually invisible (a reflection of the sky or a view of it). By contrast, the glass tube modulates the visual transparency of glass to produce spatial effects that result from its shape, the local weather conditions, and interior lighting. Modulation comes from altering the form and position of the glass instead of augmenting glass with films or tints.

Thinness and Thickness

In "Insulated Glazing Units: Fabrication and Memory of Weight and Stress," Michael Bell opens by succinctly summarizing the modern architectural use of glass: "Glass is flat. Its flatness is a key test of its quality. To that end, architects such as Philip Johnson have gone so far as to decline the use of safety features, such as tempering, to avoid the waves it causes in the glass's surface."[4] As a consequence of pushing glass to its most visually transparent point, the modern use of glass pushed the material to its most thermally transparent as well. A recent corrective (Michael Bell and Jeannie Kim's book, *Engineered Transparency*, being an example) has been to augment glass (whether through engineering or added material, e.g., shading devices or extra panes) to maintain its visual transparency while mitigating its thermal transmissibility.

However, it is interesting to note that such flatness was not even remotely possible until the nineteenth century, because glass is not easily made as a flat surface. For hundreds of years the easiest way to fabricate glass was through blowing and rotating molten glass resulting in cylindrical volumes. In order to get a flat pane, two methods could be used. The first method, called cylinder glass (or broad glass), was to blow the glass into a cylinder, and then cut it lengthwise and unroll it under heat. The second method, known as crown glass, was to spin the molten glass until it was a flat disk. In *Technics and Architecture*, Cecil D. Elliot describes the process: "The glass was spun in front of flames, until centrifugal forces widened the hole where the blowpipe had been removed. Slowly the vessel flattened into a circular disk with its rim doubled over, and then it 'flashed' into a flat disk, making a sound that was compared to 'that produced by quickly expanding a wet umbrella.' This circle of shining glass had remarkably little variation in thickness, except at its very edge and its center."[5]

Unfortunately, the problem with this method was that the square panes of glass would be cut out of the disc, ensuring that at least ten percent of the glass would be wasted. In order to avoid waste, most square panes were made using the cylinder method, which also allowed for much larger sizes. These two manufacturing processes both had tradeoffs. One could make either a flat surface which was not rectangular, or a rectangular shape that was not flat. The square glass pane found in the modern glass house, made possible by floating glass on a smooth tin bath, is a significant

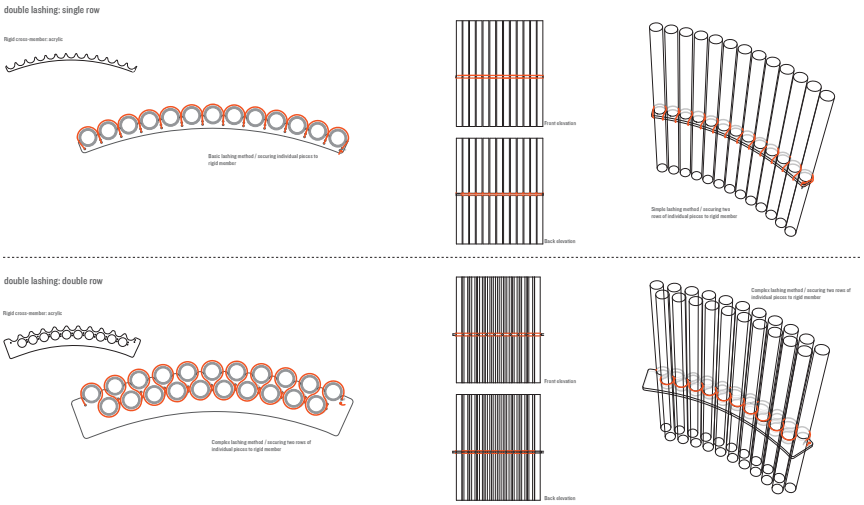
deviation from how glass traditionally has been produced. Thus, the modern use of glass as the thinnest possible boundary between interior and exterior is a deviation, rather than the norm, from the long history of how it was made. One well published bit of collateral damage from this deviation is that the commitment to thinness has rendered glass as a nonexistent thermal barrier. Remedying this problem requires acknowledging that glass has thickness, acknowledging that, in reality, glass is not invisibly thin but material and thick. It is not an infinitely thin plane (the space of a line), but a discrete volume (the space between two lines). Using the glass tube instead of a glass pane not only rejects the modernist notion that glass is flat, thin, and transparent, but also embraces the thickness and translucency of the material.

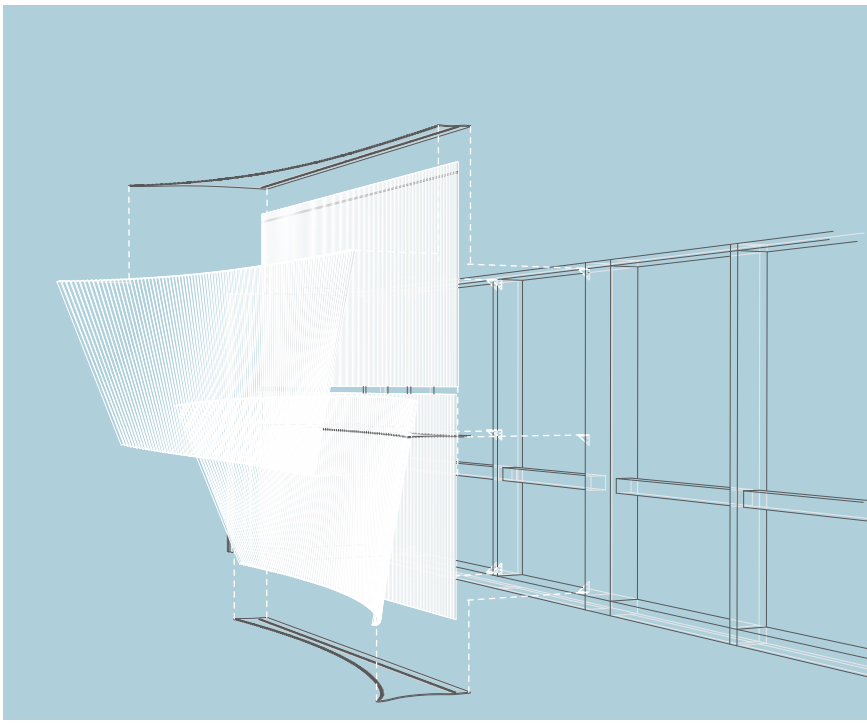
Opposite top:
Storm glass elevations

Opposite bottom:
Diagram of glass tube spacing. From left to right, tight spacing, low volume air flow; mid spacing, medium volume air flow; and wide spacing, high volume air flow

Top:
Installation axon

Bottom:
Lashing diagram. Single lashing, single row; double lashing, double row; securing rows of individual pieces to rigid acrylic cross-member(s)





Reconsidering Wall

Our first gallery installation became the testing ground for our first large scale development of an enclosing surface. Numerous iterations explored the possibilities of maintaining the distorted visual and formal effects of the ruled surface studies while attempting to introduce the constraints of a sealed exterior surface. Ultimately a double skinned wall system developed allowing a straight and parallel surface to the exterior that facilitated the effort of sealing while the torqued interior surface amplified the visual distortions of the glass wall, yielding a sense of opacity and an exaggerated thickness.









John McMorrough is Chair of the Architecture Program at the University of Michigan, Taubman College of Architecture and Urban Planning and a principal architect in the firm studioAPT. He received a Bachelor of Architecture from the University of Kansas, a Master of Architecture with distinction from the Harvard Graduate School of Design, and a Ph.D. in Architecture from Harvard University. His current writings on the problematics of contemporary design include treatments of supergraphics, pedestrian malls, and the apocalypse.

The following text was originally presented on September 16, 2011 as part of the Taubman College "Representation" Lecture Series.

The Blueprint

John McMorrough, Architecture Program Chair

To lecture as the chair at one's own school seems to imply something more than just a presentation of a specific work, but the opportunity for a wider statement, a declaration of agenda about what we find ourselves here to do, which is, nothing less than to rethink architecture: in thought, in word, and most significantly in deed, that is, in practice in the world. In that light, tonight's talk is less a lecture, and more a sermon. A homily on the articles of faith, delivered to the believers as part of a renewal of mission and purpose.

The talk is divided into three parts: three different significations of the blueprint. The first looks at the past and the technical definition of the blueprint and its signification in representation both in media and language. The second part considers the idea of a blueprint as an original plan that influences subsequent action and therein lays out the questions of agency and authorship that confront contemporary architecture. The final section considers the blueprint as a detailed plan of action and speaks about the future and the school, and the ways in which each needs the other to proceed.

Blueprint (Representation)

In considering the poster for this lecture, what we see is the plan of a building that does not properly exist, namely the home of The Jetsons from the cartoon of the same name. The plan comes from Mark Bennett's book *TV Sets: Fantasy Blueprints of Classic TV Homes*. At one level, it's the depiction of a kind of retro-futurism: a depiction of a lifestyle that combines technology, levity and a luxury of space. On another level, it's a circular plan, a plan type that is the form par excellence, of an organizational type. As a geometric type, it's one that has the most minimal definition: a consistent radius around a point, and yet also makes the most overt claims to hierarchy. Of course the most important aspect of the image was that it was a blueprint.

The "blueprint" proper is an archaic, pre-electrification process of reproduction, where the copy is made by a photographic technique much like the rayogram. Exposing the original drawing to a chemically modified paper, the imprint of the original is made. It is a relatively imprecise process and is subject to distortion, but it's also an indexical one, where the copy and the original are related by proximity. The blueprint evokes the plans drawn by hand where the drawing forms the means of description and the project emerges by the coordination of individual efforts. The very idea of a coordinated plan, the description of a project, has become synonymous with the term "blueprint."

Poster, "The Blueprint," University of Michigan, Taubman College of Architecture & Urban Planning, September 16, 2011.

Cover, Martha Stewart's Blueprint magazine, November/December, 2007.

The term blueprint today has a much wider application. It not only refers to this defunct printing technology (the literal blueprint) and generically to the whole category of architectural reproduction technology, but it signifies the very act of plan-making, of making a course for actions. For example, we speak of "the blueprint for school reform," or "the blueprint for success." Mark Wigley wrote about the relationship between philosophy and architecture, and therein he argued that philosophy was indebted to architecture for the metaphors of its generation.

Thomas Cole, *The Architect's Dream*, 1840, oil on canvas, 136 x 214 cm.

Defonten, "City Ruins" after Fallout video game, 2007.

In Marxist philosophy, there is the notion of the base and the superstructure; these are first and foremost architectural ideas. So architecture is not based on philosophy—philosophy is based on architecture. The process is ongoing and continues. The migration of concepts from architecture's specific practice, to wider models of thinking about organization, is one of the most significant contributions of architecture to culture.

Blueprint 2 (Plan of Action)

This leads us to another consideration of the blueprint: the definition of the blueprint as a detailed plan of action, an action for advanced practices today, centering around the issues of how to frame organization and authorship.

A particular image that comes to mind is (I start all my lectures with this image), *The Architect's Dream* by the painter Thomas Cole from 1840. In it we see the architect surrounded by the legacy of the discipline, confident in his inheritance, lying on a massive capital. Not only is he lying on the capital, if you can see he is lying on huge books of architecture, surrounded by their masterpieces. This is an image of hope, and an image of confidence in the project of architects and architecture, and the ability of our disciplinary history to solve the problems at hand; an inspiring image. That image can be compared to another, "City Ruins," based on the video game Fallout 3. In the comparison of these two depictions of architecture and the city, we see illustrated the issues that confront us today: the utopian and the apocalyptic. *The Architect's Dream* speaks to a utopian impulse that we find within architecture. To parse out the term utopia

for just a moment, the utopia as we come to think of it comes really from the allegiance of two Greek terms. They're spelled the same, except one starts with an E and one starts with a U—Eutopia as "the good place," (from the Greek for "well" and "place"), and the other Utopia as the non-place (from the Greek for "not" and "place"). So we have within the ambitions of architecture a notion of utopian removal, which is the aspiration for the good that can be found nowhere. It's toward a future moment that in fact has never occurred, through which we aim our ambitions. Compare this to the apocalyptic moment—we think a lot about the apocalypse today in various media and in terms of various crises. The apocalypse as a model is very different from the utopian, of course, but it also has a different temporality and implied agency. Where the utopian is the non-place of the future, the apocalyptic is always the everywhere of the now. It's inescapable, it's present, it's not a future condition, it's something to which you need to react. These two modes also set up a different relationship of materiality to architecture. The architecture of utopia, and architecture itself, have been dictated by a logic of plentitude. Architecture occurs when there's too much of something: too much money, too much labor, too much time, too much attention. This is what has created architecture. The challenge of this apocalyptic mode is to try to think about how architecture would respond or innovate or become realized under the logics of scarcity, of not enough, of the now.

But the real question, in addition to the facts of these new challenges, is how we posit our authority in relation to the very act of acting. Here is the evil genius of Dr. Heinz Doofenschmirtz from Disney Channel's Phineas and Ferb overlooking the city with malevolent intent. In the critical perspective, the malevolence (in the past few years we've had a lot of attention to critical perspectives about architectural authorship) is not only a function of his intention, but it resides in the very singularity of his agency. Much of the critical attention of the last thirty years has been devoted precisely to this anxiety of authority with the effects of creating an atmosphere of escapism: escape the profession, escape proposition, escape action. This flies in the very face of the definition of the architect: the man or woman with a plan; the generator of the blueprint. The question then becomes: By what authority do we make these plans? And here I would say that authority does not derive from genius as we understand it, but it derives specifically from expertise. In fact, what we used to think of as genius is actually an expertise gained by conscious effort.

"Dr. Heinz Doofenshmirtz" from Disney Channel's Phineas and Ferb, 2007.

The author Malcolm Gladwell has written on this, and he argues that the whole concept of native talent is a myth. He gives the example of Wayne Gretzky, the famous hockey player who is well known for his abilities in that sport, and is seen as the most gifted athlete in that field. Gladwell talks about how Wayne's abilities come not through his talent, but through his effort, from the fact that Wayne was very interested in hockey from a young age. At two he was already watching the game, he was making a makeshift stick, he was practicing, practicing, practicing. And it was through the attention of his efforts that he gained his genius, that he gained his talent, that he gained his expertise. In fact, Gladwell breaks it down for us even more: he claims that if you look at the accomplishments in a wide variety of cultural fields, you will find that the formula for genius is ten thousand hours of sustained concentrated effort in study in that domain. This opens up a kind of understanding of how we gain this authority of expertise. The whole notion of expertise connects with how architects posit their role in the world. Not only to make the actions of buildings, but to make thoughts of organization. On the subject of expertise, and the envisioning of plans of change and action, Gladwell's recent essay, "Small Change: Why the revolution won't be tweeted," published recently in the *New Yorker*, asserts that the actual action of operating in the world demands a kind of embodiment of presence that's not a function merely of interests but is precisely a function of engagement and agency. Further, this agency speaks to our interests in architecture and organization. Highlighting this continual need to think of an embodied agency in this regard, Gladwell writes: "There are many things though that networks don't do well. Car companies sensibly use a network to organize their hundreds of suppliers, but not to design their cars. No one believes that the articulation of a coherent design philosophy is best handled by a sprawling, leaderless organizational system. Because networks don't have centralized leadership structure and clear lines of authority, they have difficulties in reaching consensus and setting goals. They cannot think strategically and they are prone to conflict and error. How do you make difficult choices about tactics and strategy or philosophical direction when everyone has an equal say?" Enter the architect and his/her expertise.

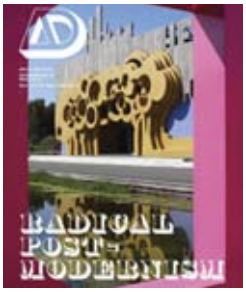
Jackson Pollock,
Lavender Mist, 1950.

To frame the issues of architectural agency and authorship, I will avail myself of three references this evening, all conveniently, for the purposes of this talk, published in "blue" print books (or at least books with blue covers). The

first of the blue books is Clement Greenberg's *Art and Culture*, a series of critical essays from 1961, and specifically the essay "Avant-Garde and Kitsch" from 1939. Greenberg makes the distinction between kitsch art and what we later call modernist art and says that the avant-garde functions by its efforts through "a superior consciousness of history" which is important for our consideration as well. So what did he mean by that? How do we achieve this? How do we achieve this superior consciousness of history? In Greenberg's case it was with the attention of painters to the specifics of their medium. So the ten-second version of modernist art according to Greenberg: Greenberg said that painting developed in a Kantian critical mode through an interrogation of its medium. Painting consists of two things: it consists of flatness, and it consists of a frame. And so the whole history of painting, from perspective on, resides in the delamination of optical effects of perspective into an increased attention of the flatness of its medium. It's the critical attention to the medium at hand; it is the means by which the avant-garde achieves this superior consciousness of history of which we've spoken. Jackson Pollock's *Lavender Mist* from 1950 is, to Greenberg's eyes, an exceptional painting because, along this train of development, it achieves precisely the ambitions of what the critical avant-garde painter would do. It achieves a canvas, which addresses its edge condition through this overall patterning. It also gives us a sense of composition, which in no way implies a three-dimensional space. So it exists in relationship to its own flatness. This is a very powerful model of that medium, a model among many other models that has had a continuing resilience in terms of its conceptual robustness. Compare it to another model that was going on at the same time, offered by another art critic, Harold Rosenberg. He was also interested in Pollock, and also applauded Pollock's painting. But Rosenberg's interest in the painting was in Pollock as the embodied agent, with the canvas enacting the painter's subjectivity and expression. Of these two models, I far prefer the Greenberg model. The expression model gives us a kind of dead end, while Greenberg gives us a way of understanding, with precision, our relationship to issues of expertise.

A second "blue" text concept that I'd like to refer to is Theodor Adorno's Aesthetic Theory, and more specifically his evocation of exact imagination. And here I will cite Sherry Weber Nicholson's succinct description of the term: "Exact Imagination. Adorno uses the term exact imagination to mark the conjunction of knowledge, subjective experience, and aesthetic form. Exact imagination as distinct from creative imagination thus describes the form of non-discursive rationality. According to Adorno, exact imagination covers or produces truths by reconfiguring the material at hand and thus knowledge is inseparable from the configurational form imagination gives it." This is a very powerful notion for how architecture produces a specific sort of knowledge.

How do we achieve expertise in architecture today? I don't know if this is always the case, but it currently feels like architecture and the research



Jason Payne/Hirsuta, "Rawhide: The New Shingle Style," SCI-Arc gallery installation, fall 2011.

FAT (Fashion Architecture Taste), "The Villa," cover *AD: Architectural Design* (September/October 2011: Radical Post-Modernism), Hoogvliet, the Netherlands, 2008.

WORKac, "Nature City," entry to the Museum of Modern Art "Foreclosed: Rehousing the American Dream" exhibition, 2012.

Monica Ponce de Leon, et al., "Photoformance," University of Michigan Museum of Art installation, 2011.

into its form—which is how we understand the discipline today—occurs on its periphery. At the moment, the advanced thinking about the progress of the discipline happens in areas that surround architecture, that inform it, but, through a kind of intellectual division of labor, draw attention to different aspects of its utilization. To expand on this, I'll show four recent projects, which have either just been exhibited, or may still be incomplete, but that illustrate practices struggling with these issues.

The first example is a detail from the work of Jason Payne. This is from an installation currently up at SciARC in Los Angeles. The project is "Rawhide: The New Shingle Style." This is a research into the detail and with it the whole logic of construction. What Jason's working with here is the whole notion of the cedar shingle and trying to play with the way in which the shingle, instead of working through the mechanics of its repetition, could be subject to conditions of weather, and in that deformation makes a new sense of the whole, composed of the detail. One could show more technical considerations of the detail and that would be appropriate, but what's interesting here is the relationship of the specific iterative detail and conditions of weather, which is what detail is.

The next example is a plan from WORKac's project "Nature City," their entry into the MoMA "Foreclosed: Rehousing the American Dream" exhibition, planned for the winter of 2012. In this competition six offices are asked to look at the American suburb and here WORKac is questioning the single-family ownership model and how other modes of arrangement for the suburbs could both accommodate the individual desire for ownership, but also tie into other senses of amenity, property, and agricultural and environmental concerns. With this they are trying to work through a specific condition within the culture to find new models in this arrangement of the city. The city is where architecture confronts its own notions of repetition and multiplicity. It's not just about the density of the downtown core, nor is it only about the resolution of the suburb; it's about the whole notion of multiplicity itself.

This example is on the cover of the upcoming issue of *AD: Architectural Design* for September/October 2011, a special issue devoted to postmodernism, and the project is by the group FAT: Fashion Architecture Taste. The project is "The Villa," a community center in the Netherlands. It speaks to notions of history and culture in a couple of ways: on one hand FAT as an architecture group is very interesting, as they work with a self-conscious sort of mining of history to reboot a defunct project of postmodernism, to see what's left within it. But the project is also interesting as a collaboration between FAT and Crimson, a Dutch architectural history office. FAT and Crimson worked with the native populous, the people that live there, whom they met with in focus groups. So they're working with historians to try to work with the people that will live here to find out what they want, how it's going to work, what its relationships might be— it's a kind of a version of living history. It's about the preservation of certain values, but also the use and reuse of history and its models in a very interesting way.

And finally, we see the "Photoformance" project by Monica Ponce de Leon and many others in this school, as installed at the University of Michigan Museum of Art last spring. One of the subtexts for showing this contemporary work and the way it happens is that it happens in a network, it's a contemporary concern, and we're part of that network. I think we're actually at the foreground of this issue that appears as installation but that could be put under the rubric of geometry and configuration. What this work really speaks to is a whole notion of trying to think how we make geometric systems as architects and how we regulate control within them.

A final "blue" text to describe contemporary architectural expertise comes from Henri Bergson's "Laughter, an essay on the meaning of the comic," from 1900. To frame the issues of arrangement this operation requires conceptual qualification. Even the most rudimentary listing of strategies and theorizations that have been heretofore invoked to address things that do or do not go next to each other is vast, and includes such terms as symmetry, proportion, juxtaposition, superposition, field conditions—the list goes on and on and on. But there's another term that might be useful in terms of not only the question of repetition and arrangement but also its affective dimension. Recent tendencies in arrangement invoke the possibility of the comic as described by Bergson, for whom life's incommensurate fit with the mechanical becomes the source of the comic. And with it laughter is the manifestation of the comic situation. This is a useful idea because it deals precisely with the issue of arrangement, namely the relationship between order and accident. Architecture is further implied by Bergson's model by two points: that laughter is specifically human; and man is the only animal capable of laughter, but he's also the source of the object of that laughter. There's no such thing as a comedy of nature not personified by human efforts, and furthermore, that it's difficult to laugh alone, that it's easier to laugh in a crowd, which establishes laughter as a social meaning. All of these elements offer a useful model of this question of arrangement and repetition. In this model, architecture occupies

"Goofy Disassembled," source unknown

Eighteenth-century 'composite paintings' from India

Rorschach Blot.

Andy Warhol, *Rorschach*, Polymer paint, 13 ft., 8 ¼ in. x 9 ft., 7 in., 1984.

"Representation" lecture series poster, University of Michigan, Taubman College of Architecture and Urban Planning, fall 2011.

its inevitable category of the mechanistic and then no longer has anxiety about its mechanistic nature, no longer aspires to be the animal or to be life, it understands that its relationship to life is contingent and finds within that misalignment a source of joy and reflection.

So here we have the old project, the project of elements, where we see Goofy broken down, and where each element is unique in its position playing a certain role via part to whole. In response to this, a new model might be examined, illustrated in this case by a composite painting from eighteenth century India, where we see a whole composed of parts, the parts themselves are figural totalities yet combine to make other further wholes. One aspect of recent work is that it has not only avoided, but one could say was conceived as precisely an alternative to, the identification of parts to whole again as a reaction to surface sensibility of postmodernism and its collage sensibilities. At this juncture the issue is to think yet again about the part to the whole, working between the ontologies of emergence and collage and developing component systems that render parts as wholes. The proposition is as follows: Architecture uses the organization of repetition to produce laughter. To extend the definition, architecture as a project takes on the issues that arise in the consideration of its organization while acknowledging the impossibility of perfection, the asymptotic relationship between means and ends, and engages them in their most potent form of repetition so as to invoke laughter (which, after Bergson, is a reaction of the fluid phenomena of life to external rigidity)—it makes a virtue of its limits. Architecture may be neither the problem nor an answer; it might just be funny.

Blueprint 3 (Future of Program)

For the final third of the talk, we consider the blueprint as a plan or prototype which includes subsequent action or practice, specifically about the school and its future, and the ways in which our efforts touch on the disciplinary concerns previously alluded to.

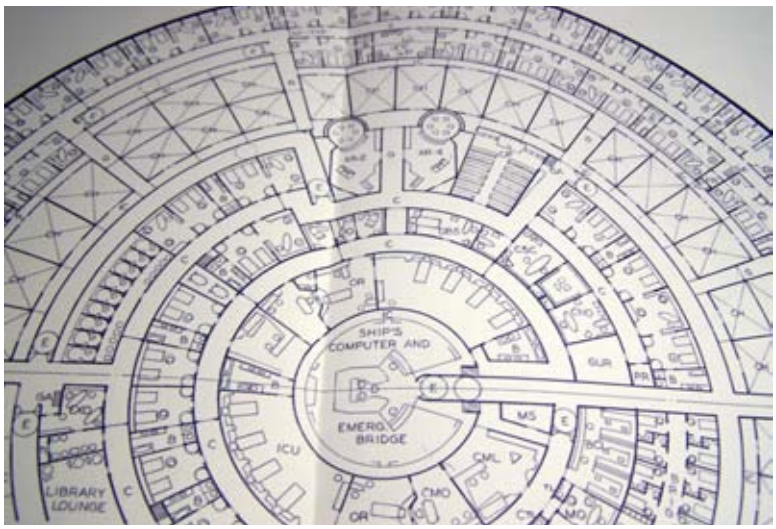
What we see here is, of course, the Rorschach blot, used as a diagnostic tool in Freudian analysis. The blot itself is made by a relatively simple technique. A blot of ink is placed on the center of a piece of paper. That paper is folded in half and then spread out to make a symmetrical figure, which in the logic of its creation has no representational value, but is a figure replete with suggestive qualities. What use we make of those suggestive qualities is our interest here. The blots would be shown to patients, who were then asked what the blots looked like to them. The point I would like to make about these blots is that the invitation to interpretation is not an evocation of subjectivity; rather, the answer to what it looks like is itself the revelation of a patient's condition, the response an invocation of pathology. The Rorschach is not an emblem of the possibly of relativism, but the inevitability of categorization.

Here we see another, very different, Rorschach, a painting by Andy Warhol. In its materiality, it is paint rather than ink; dimensionally it is much larger, 9 ft. x 13 ft. rather than a small piece of paper. In the re-origination of the Rorschach,

Warhol offered a useful example of precisely the thinking of disciplinary effort, in this case in painting but akin to what may be invoked for architecture. The comprehension comes from understanding the difference in quality between it and the original blot. This requires the "superior consciousness" of the medium of painting to understand its process. It offers an "exact imagining" of the very problematic of repetition and origination, and I would argue that it invokes "laughter" at the condition of the blob's happenstance rendered in the mechanism of delineation.

I'll end with an evocation of the school itself. Life here has been described as like being on an island, but I see the school as a ship. A ship, like an island, is a contained environment exactly in the way Michel Foucault cites the idea of a heterotopia: a place in which the typical rules of order are substituted with an alternative. That is what a school or the academy is: a place outside the world, another order with its own set of freedoms and possibilities as well as its constraints and disciplines. As I have tried to outline today, architecture too is a world unto itself, but (as I have also tried to convince you) it is also the world itself. Architecture and its schools are both representations of and a representational subject of organization itself. They are the very blueprints of possibility. The ship is useful because it is in motion, it is going somewhere, it has a goal, its motivations are opportunity, its labors are underwritten with an ambition to get someplace. The ship's inhabitants are not permanent residents, they get on and off the ship. In the institution, students are here for a few years, the faculty longer perhaps, but their permanence is also relative. Some are on the ship for their whole careers; others just long enough to reach the next port of call. Neither the ship nor the school are homes, they are both conveyances; they are means to an end. We started this evening with one kind of retro-futurism, with the Jetsons' house—let's end with another. To conclude, I would like to quote the mission statement from the starship enterprise from the original Star Trek series. With a few adaptations, it fits the mission of the school today.

"Space, or rather . . . architecture, the ~~final~~ perpetual frontier. ~~These are the voyages of the starship Enterprise~~. These are the ambitions of the Taubman College, its . . . mission: to explore strange new worlds, to seek out and envision new life and new civilizations, to boldly go where no ~~man~~ one has gone before, again, and again, and again. . . ."



Plan, "Starship Enterprise," from the television series Star Trek, 1966.

Christian Unverzagt is an Assistant Professor of Practice in Architecture at the University of Michigan, Taubman College of Architecture and Urban Planning, where his teaching focuses on visual communication and interdisciplinary design methodologies. He is the design director of M1/DTW, a multidisciplinary studio operating at the intersection of design and cultural production where he has been responsible for the design of over 40 books. He is the faculty advisor for Dimensions, a role he has held since volume 17. Unverzagt lives and works in Detroit.

Postscript

Christian Unverzagt, Assistant Professor of Practice in Architecture and Dimensions Faculty Advisor

Each and every year the staff set aside space in the back of this book for me to reflect upon the process of its development from a distance, and at its end. From the beginning conversations about the possibilities, they were off. Recently, as we reviewed everything from possessives to punctuation, they were on, and they were there.

I have used the time and this space to look back upon the early incarnations of the journal in the 50s; reflect upon my own experience as a staff member in the 90s; the exhilaration of advising in the 00s; and the remarkable challenges and opportunities present at the dawn of a new era.

What more would you say, so when you look back 25 years from now, you are reminded of this moment, this time, and this place?

The staff of Dimensions 25: Robin, Emily, Nathan, Elizabeth and Steven, have produced a stunning hallmark worthy of its name (and seemingly effortlessly too!)

What more could you want? A book for architecture, well made with three conditions: firmness, commodity, and delight.

We got it.

So honestly, what more can I say? But you—you can say something too.

Turn the page. . . .

Dimensions

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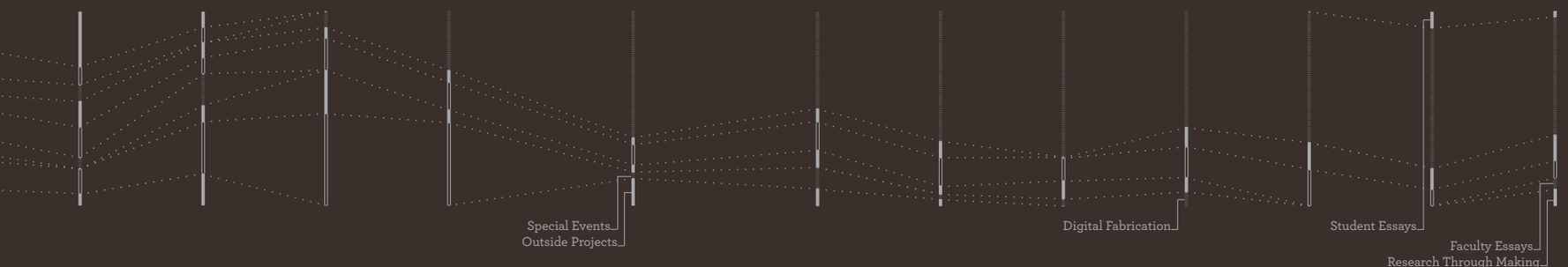

* Fluorescent Orange

* Plaid

* Plaid Returns

* Spray Paint

* Thom Mayne Interviewed Again