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

ISSN: 1074-6536
Dimensions 30 was printed by ULitho in Ann Arbor, Michigan in CMYK on the following papers: 80# Finch Fine Opaque Text, 100# Finch Opaque Cover, Vellum Finish, Cover with a flat stamp foil.

Dimensions, vol. 30

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and Urban Planning
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Ann Arbor, MI 48109-2069 USA
taubmancollege.umich.edu/dimensions

Typeset in Mrs. Eaves
and **Mr. Eaves Modern**.

Dimensions

Volume 30

Foreword

Thesis

Interview 1

Wallenberg

Research

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Foreword

The chair always reads *Dimensions* in draft form, when not yet transcribed interviews are a series of Latin words strung into senseless sentences repeated across multiple pages, when thesis texts are not yet copy-edited, and when last year's fellows—like their students—have some inkling of "what came next."

It is spring break, the last day of spring break.

In a few days, this year's fellows will unveil this year's projects; in a few weeks, this year's thesis and Wallenberg studio students will be preparing final presentations; in less than two months this year's graduating class will be walking across the stage of Rackham auditorium, shaking hands, and receiving their copies of *Dimensions 30*, containing the work of last year's graduating students and fellows. *Dimensions 30* is a print-based artifact; it is both a celebration of completed work and the record of a moment in architectural pedagogy.

My shelves are full of such records, an imperfect archive of the work of many architecture schools. As single artifacts they are interesting, but as a collective they present a history of the discourses within and across schools of architecture. The "lag" represented by the year-long production of one issue of *Dimensions* allows students to re-present their projects for publication and allows for reflection upon the mad dash toward a final review. In ten or fifteen years, the work may look dated on its face, to the extent that it captures the representational modalities and technical capacities of a discrete moment. However, it is only at that distance that we can assess the salience of the work, that is, what has survived the pedagogical frame to inform a young architect's or designer's distinctive discourse. I enjoy referencing these "ancient" artifacts to help situate the contemporary moment, to assess not "where we came from" perhaps, but "where we have gone."

But in this moment of reviewing the almost final draft, as a pedagogue, I can only wonder, not "what comes next," but rather "who will you be," because that, in the end, is the ultimate impact of our teaching on the world.

Sharon Haar
Professor and Chair of Architecture

EXTERIOR

"The simple, closed, uncommunicative figures contain open space, with the potential for infinitely variable activity within. At this scale, any connection between form and predictions about the future of function becomes impossible to maintain."
–*What Is a Big Dumb Object?*, Fred Scharmen

ABSTRACT

Formal studies raise attention to aesthetic and spatial qualities. This thesis works to establish a new type of formal discussion by asking how form functions. This thesis explores the counterintuitive reversal of this formula through articulated form that remains programmatically flexible and ambiguous through the diversity of volumes and powers of scale. (a)typical office enfolds its character, keeping character on its inside during the day and projecting outward at night once workers have evacuated the premise. Through its mirrored glass façade, (a)typical office reflects upon the image of the city while concealing its own secrets of interiority.

(a)typical office

Yun Yun & Tommy Kyung Tae Nam | Advisor: Adam Fure

In the first half of the twentieth century, the inventions of air-conditioning and the elevator allowed American office buildings to adopt an open floor plan. In his essay "Typical Plan," Rem Koolhaas identifies this openness as a virtue because it affords near infinite programmatic flexibility. Buildings reduced to skin and bones impose no restrictions on use—blankness equals flexibility. In his essay, Koolhaas states that "Typical plan implies repetition—it is the nth plan: to be typical, there must be many—and indeterminacy: to be typical, it must be sufficiently undefined. It presumes the presence of many others, but at the same time suggests that their exact number is of no importance." The thesis explores the counterintuitive reversal of this formula through articulated form that remains programmatically flexible and ambiguous.

(a)typical office replaces the generic, gridded, stripped-down and empty office interior with a collection of machine-like objects of conspicuous identity. The building's form follows a stack of large objects that hold objects within, wrapped in a generic mirrored glass façade. The object's surfaces are embossed, extruded, and tapered, taking on a machine aesthetic, but not mapping to any specific function. Operating across a wide spectrum of scales, from small vents and pipes to large rooms and atria, (a)typical office explores a diversity of volumes and the powers of scale.

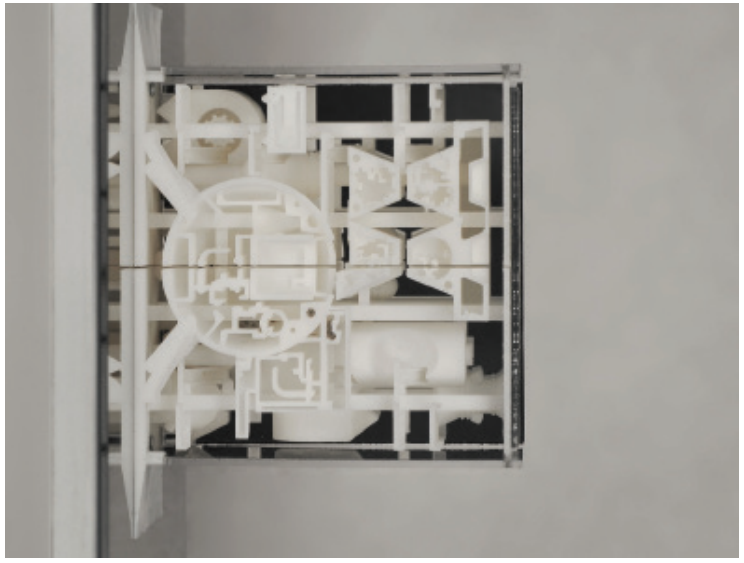
The famous modernist axiom "Form follows function" was in many ways a Trojan horse. It is most commonly understood as a cultural critique of practices of excess, but it was also a rhetorical device that eased the passage of an entirely new formal aesthetic into the world. It reached vast cultural, economic, and geographic spheres, and changed the course of history. In this way, modernist form never really followed anything; it led the way, as avant-garde practices have attempted throughout history. The sentiment of this phrase—that architecture follows or serves some other greater thing—continues to complicate contemporary discussions of architectural form making. Today, architects seem caught between two imperfect poles arguing for the value of formal autonomy, or formal propositions from exhaustive studies of mapping. This thesis establishes a new type of formal discussion by asking not what form is (autonomy) or where it comes from (context), but what it can do. That is, how can form function?

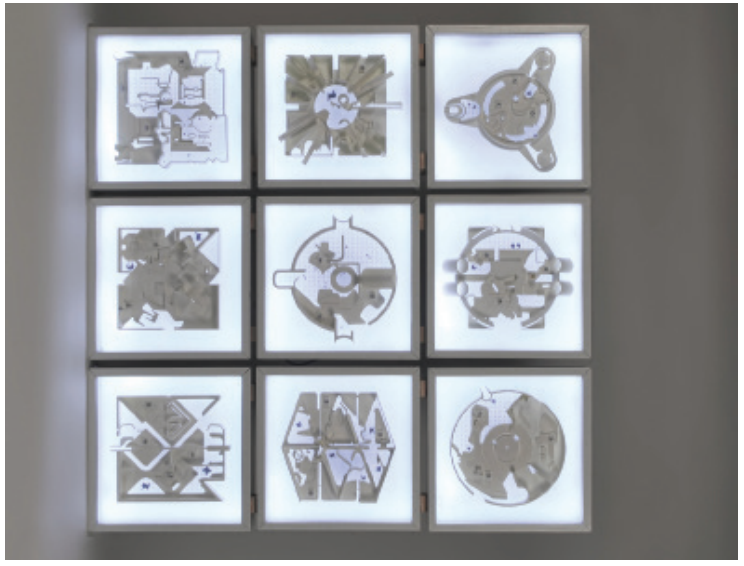
Formal studies raise attention to aesthetic and spatial qualities of figuration, scale, and composition. The focus shifts away from what form is in spatial and aesthetic terms to what it can do by considering its possible effects. Thus, form does not stall out in the realm of representation, concept, or pure aesthetics, but is projected out into the world in an attempt to chart new cultural and political agency for architecture.

The building is sited between the City of Commerce and the City of Industry in Los Angeles, California. The latter is unique in that it houses 2,500 businesses and 80,000 jobs, but has only 300 residents. This produces an extreme circadian rhythm where in the daytime the city bustles with capitalist activity, but at night it is a ghost town.

During the day, the office functions like a typical corporate office building. A spatial framework becomes the mechanical and circulation space that allows for components and elements to be arranged. The array of components create interstitial volumes, and the components themselves occupy a misfit of interiority, suggesting that the building maintains an ambiguous read from the outside to inside, from exterior envelope to interior walls. Inside the machine-like objects, the inner walls carry on a fluid-like and free-form character, creating atypical volumes and spaces for workers to inhabit.

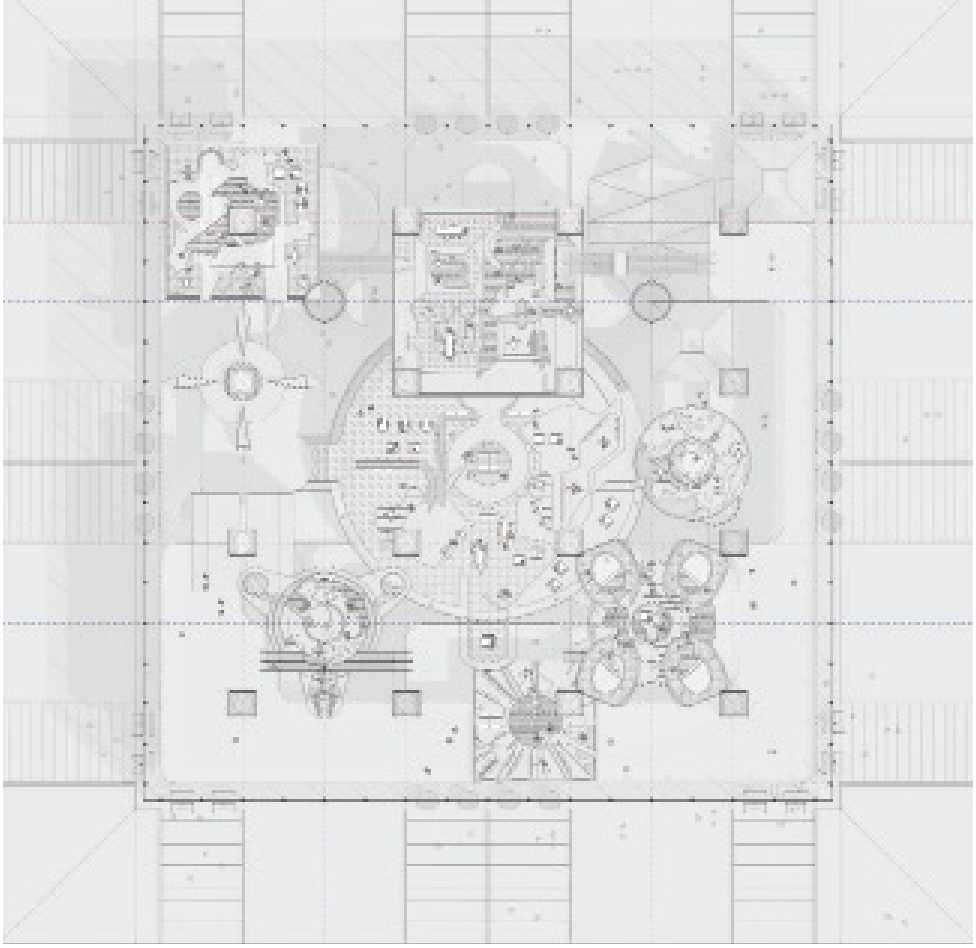
The thesis presents two conditions: the total working office, and the typicality of the corporate office. Can highly specific forms maintain an ambiguity of function? (a)typical office reflects this cycle, though in reverse; in daylight it is a generic reflective box much like other typical buildings, while at night it is a luminous container of oddly-scaled objects challenging conventional notions of interiority and architectural character. Historically, character was the quality of exteriority where ornament and articulation were visible to a wider audience. (a)typical office enfolds its character, keeping it on its inside during the day and projecting outward at night—once workers have evacuated the premise. The industrialization of the City of Commerce engenders the homogenized interiority, typical buildings become a shield for the unknown; (a)typical office breaks the regularity and uniformity by performing spatial and aesthetic diversities. Through its mirrored glass façade, (a)typical office reflects upon the image of the city while concealing its own secrets of interiority. ■





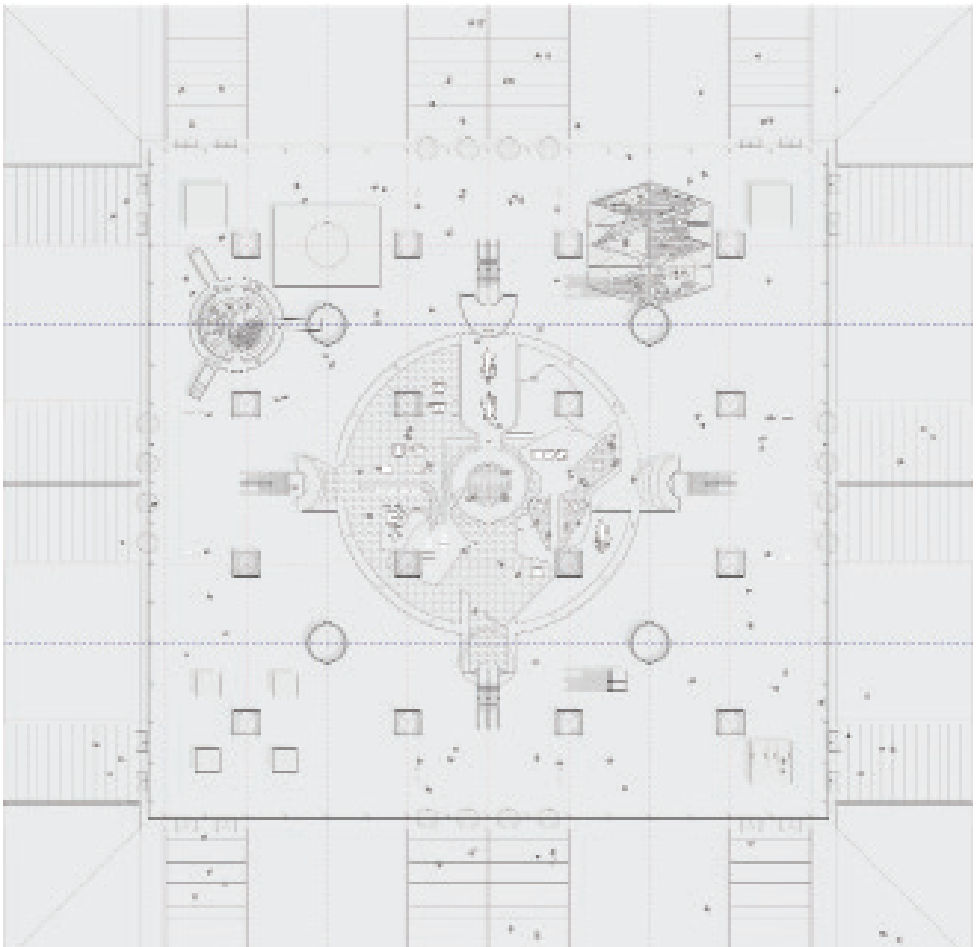
SECOND FLOOR PLAN

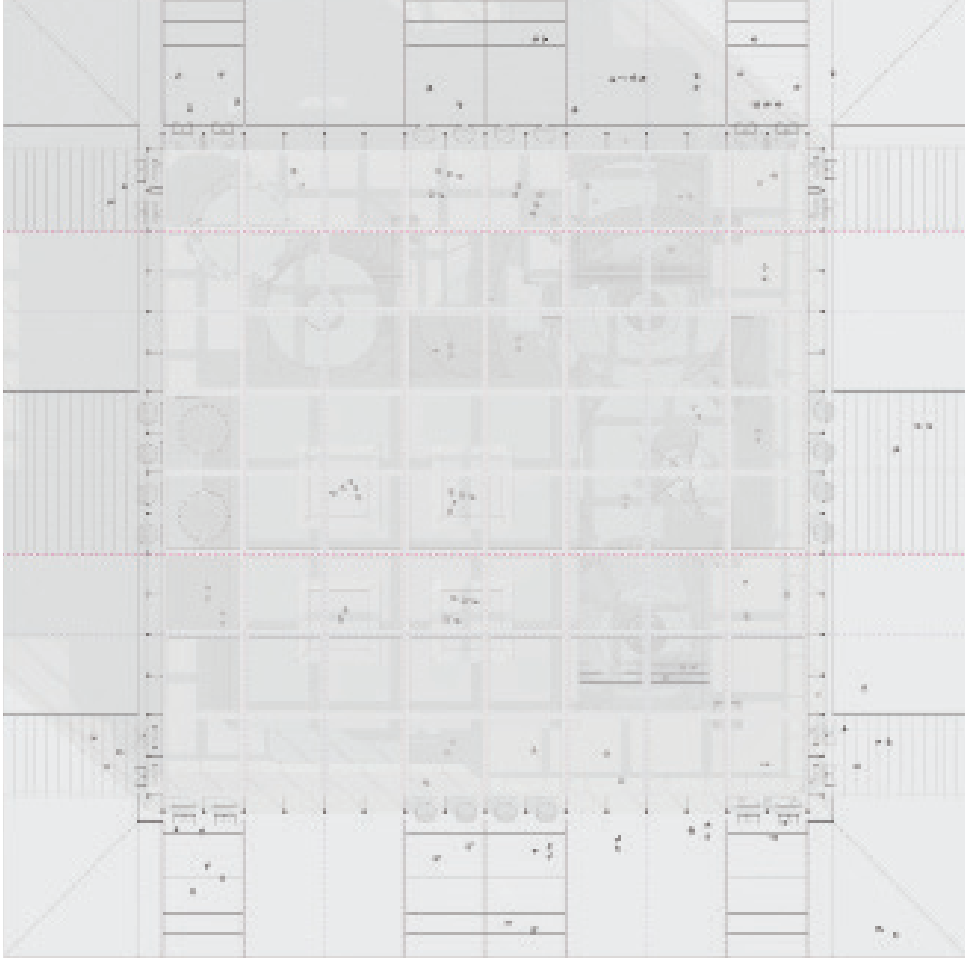
"Typical Plan is an architecture of the rectangle; any other shape makes it atypical – even the square. It is the product of a (new) world where sites are made, not found."–Rem Koolhaas, "Typical Plan," *S,M,L,XL*



GROUND FLOOR PLAN

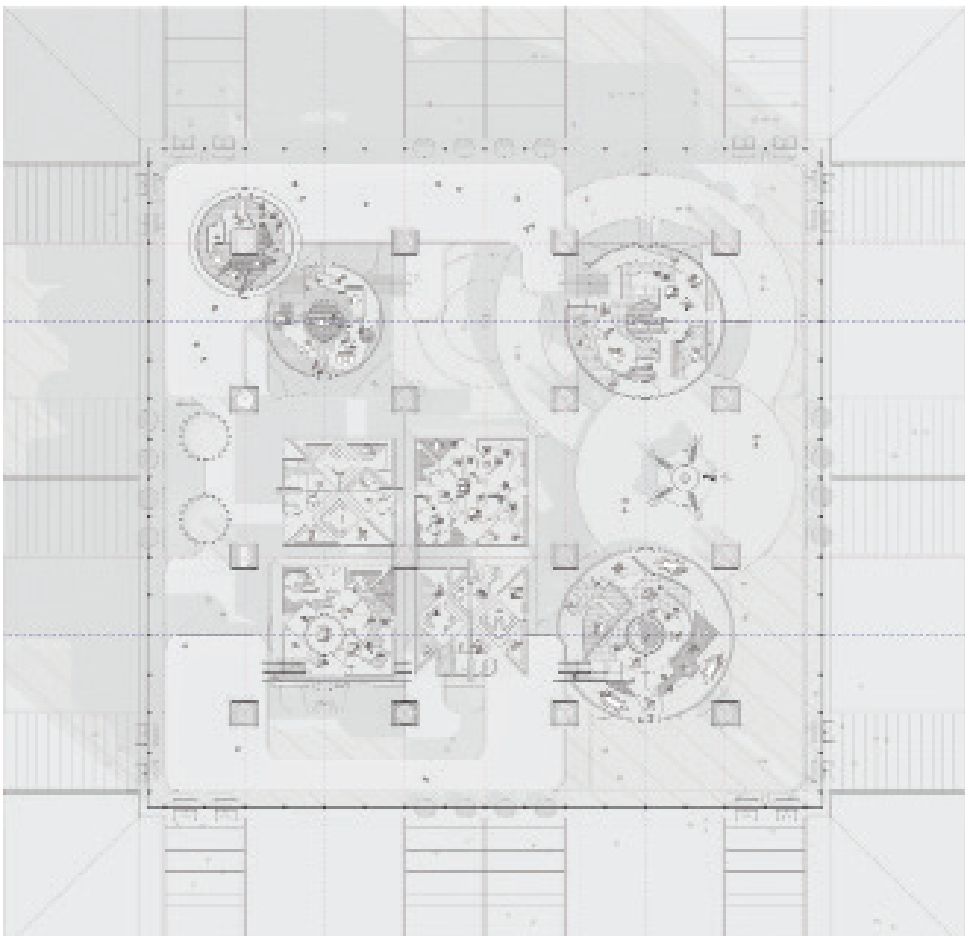
"Typical Plan is an American invention. It is zero-degree architecture, architecture stripped of all traces of uniqueness and specificity. It belongs to the New World." –Rem Koolhaas, "Typical Plan," *S,M,L,XL*





ROOFTOP PLAN

"A blueprint does not predict the cracks that will develop in the future; it describes an ideal state that can only be approximated."
–Rem Koolhaas, *Delirious New York*

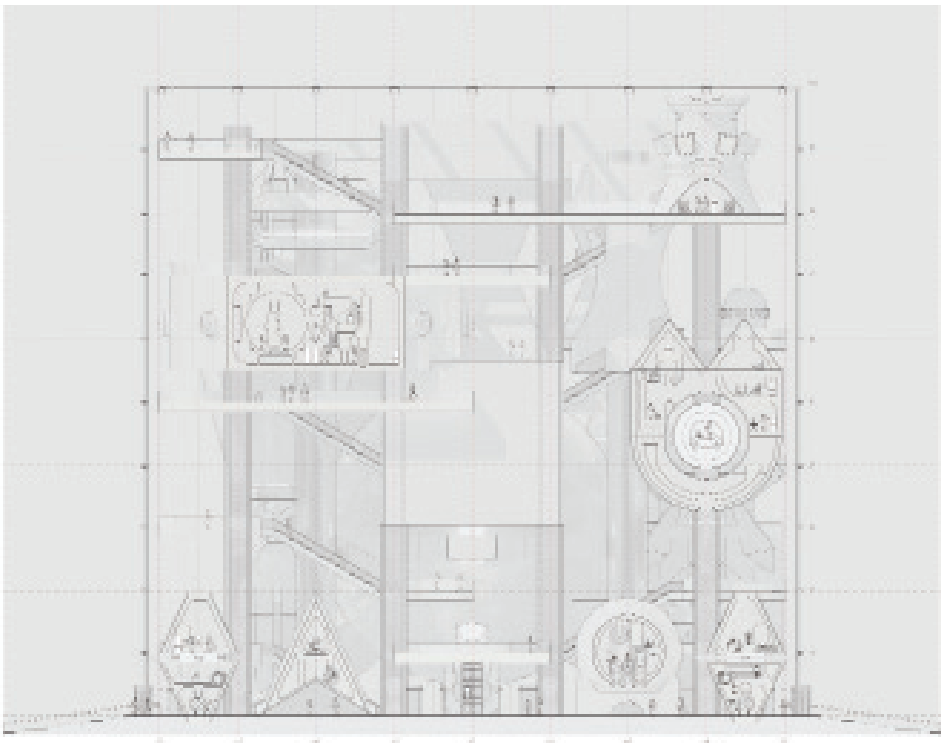


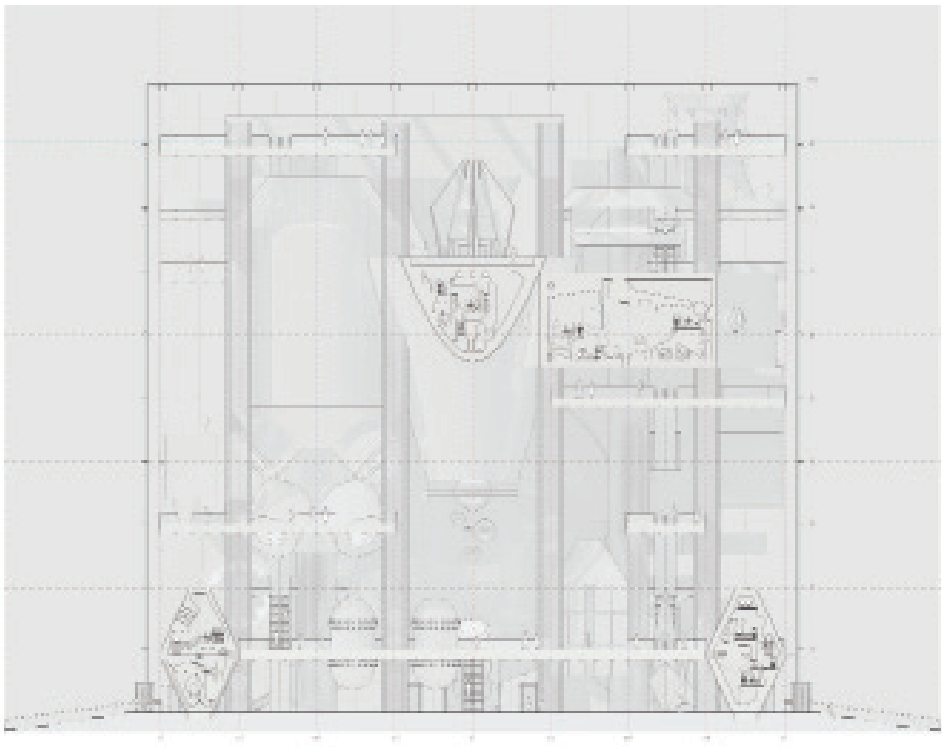
THIRD FLOOR PLAN

"Typical Plan is to the office population what graph paper is to a mathematical curve. Its neutrality records performance, event, flow, change, accumulation, deduction, disappearance, mutation, fluctuation, failure, oscillation, deformation."
–Rem Koolhaas, "Typical Plan," *S,M,L,XL*

SECTION TWO

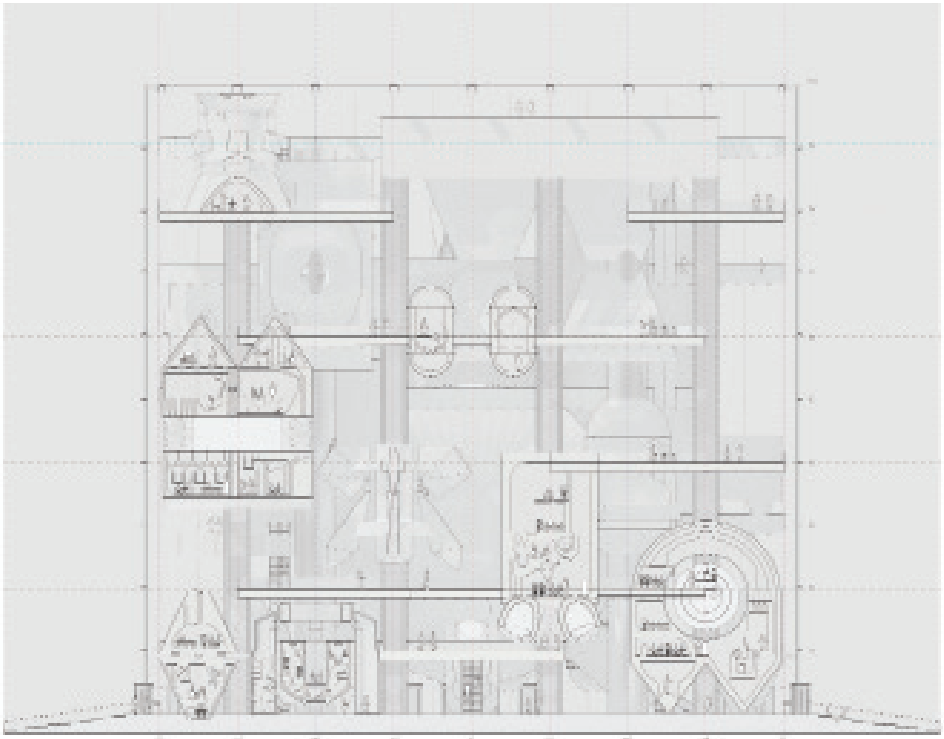
"The truth is that man has an uncanny faculty of adapting himself to new conditions. He learns to admit and even, in a sneaking sort of way, to like new and strange forms. The new form is at first repugnant, but if it has any real vitality and justification it becomes a friend." –Le Corbusier, *Towards a New Architecture*





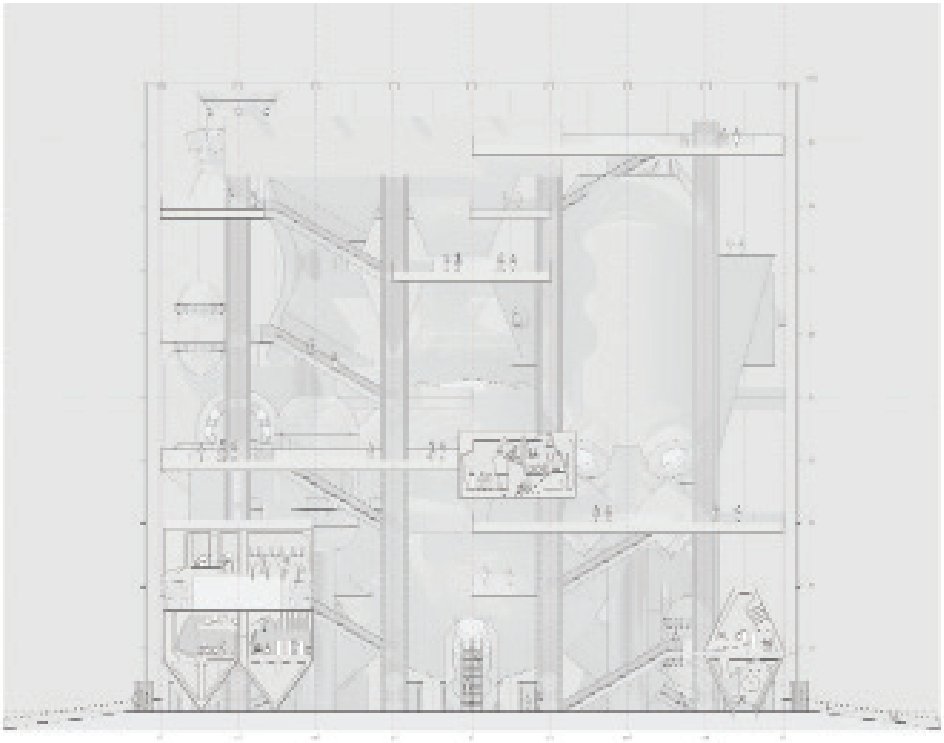
SECTION ONE

"While they are things, either these objects are entirely mute, or they present an array of incomplete, overlapping, and contradictory associations that cloud their precise meaning, even while they still seem to mean something." –Fred Scharmen, *What Is a Big Dumb Object?*



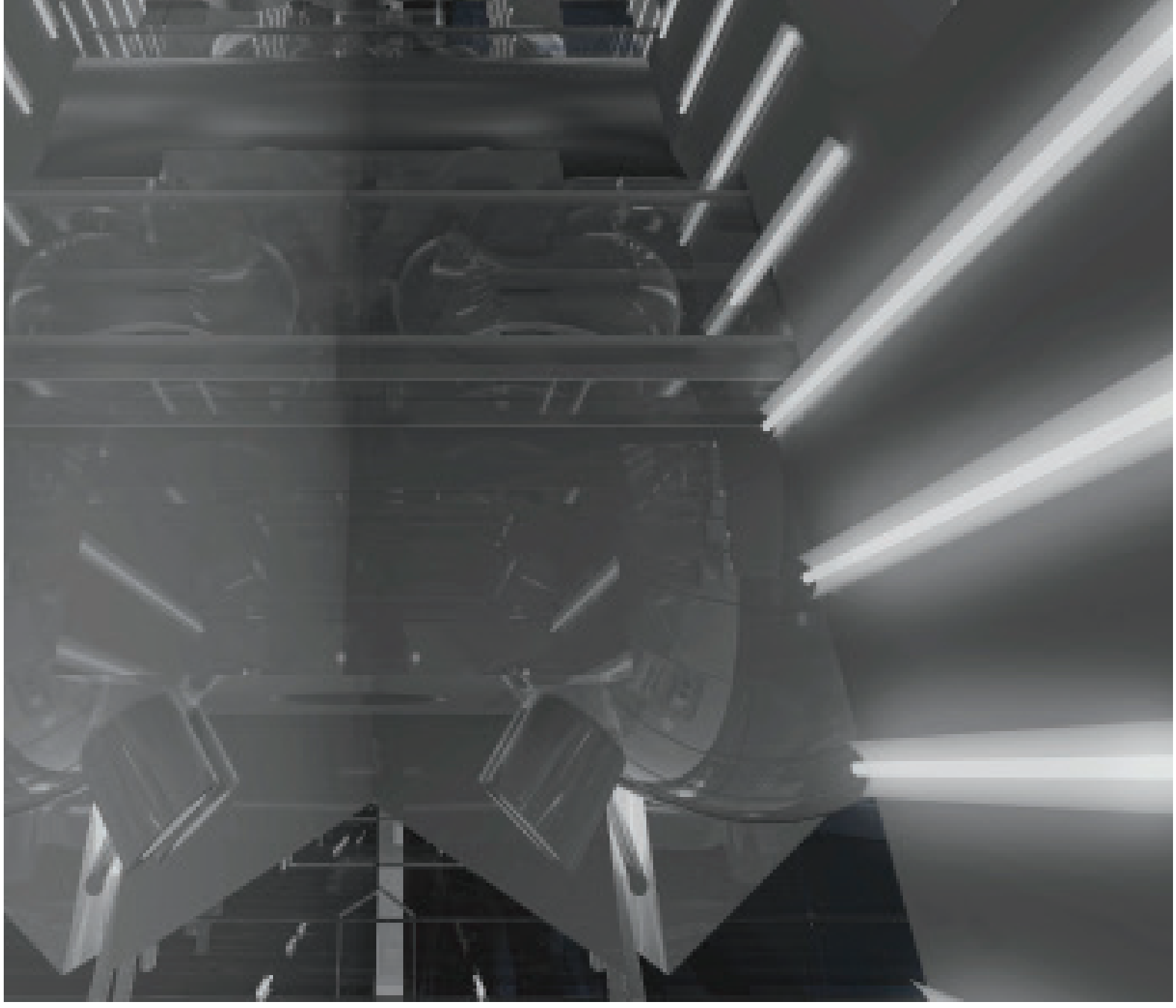
SECTION THREE

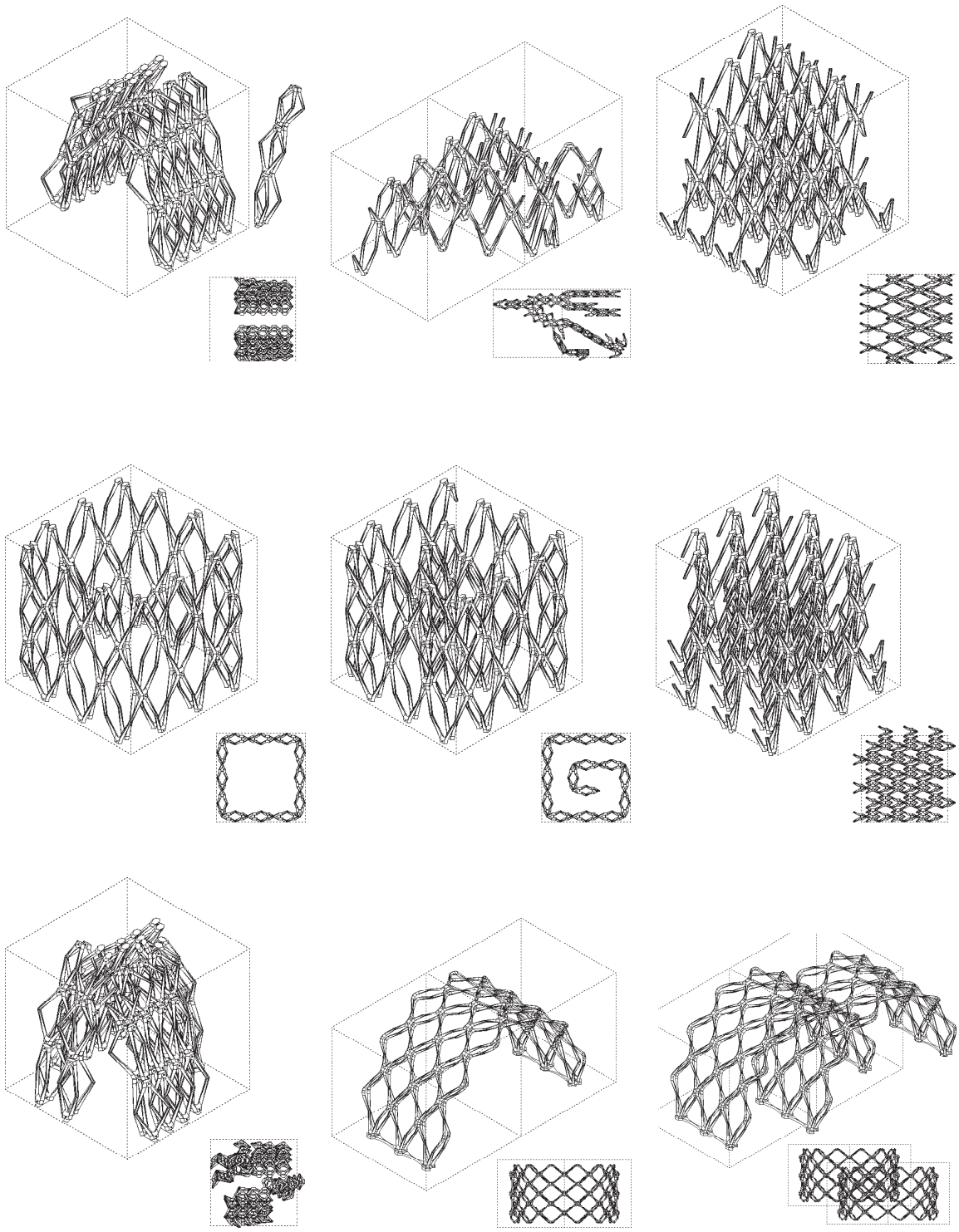
"The landscape no longer exists as an external phenomenon since the profound nature of capitalism becomes a formal freedom expressing all its rational potential." –Archizoom, *No Stop City*



SECTION FOUR

"Every room was a complete individual symphony of color. Walls, furniture, and fabrics were all composed sophisticatedly into perfect harmony which each other. Each appliance had its proper place, and was connected to the others in the most wonderful combinations." –Adolf Loos, *The Poor Little Rich Man*





AGGREGATIONS

System typology of aggregations (clockwise from top left): spiral, column, thicket, spatial web.

Concrete Lattice

Ryan Goold & Daniel Fougere | Advisors: Tsz Yan Ng & Wes McGee

Developing prefabricated units using Glass-Fiber Reinforced Concrete (GFRC) as the primary material, *Concrete Lattice* challenges the normative association with lattice systems. Lattice systems are porous, lightweight, and deployable—terms not typically associated with concrete structures. Parametric units highlight issues of assembly more than the linear components typical of lattice systems in precast building systems. Design workflow and CNC fabrication efficiently manufactured the units, and a post-tensioned assembly construction process limited the amount of necessary scaffolding. The project goal was to explore the development of complex lattice systems and use digital design management tools to streamline the production of units deployable on site.

Inspired by the work of Maciej Kaczynski and his 2013 project, *Crease, Fold, Pour*, the use of Polyethylene Terephthalate Glycol (PETG)—modified for formwork—is similar in how it utilizes the formal and structural potentials of folding. The work deviated from Kaczynski's cast-in-place construct, and instead deployed a set of self-similar precast units as a comprehensive building system. The advantages of a precast process enabled us to control the concrete mix and casting more consistently, and also explore the logistics of mass-customization and fabrication. The geometric design of our lattice system explored part to whole assemblies derived from a diamond cellular structure. Catenary logic explored in Kangaroo software informed the structural performance through interactive simulation and optimization. Many iterations of prototyping helped to identify issues of material behavior in both PETG molding processes and GFRC casts.

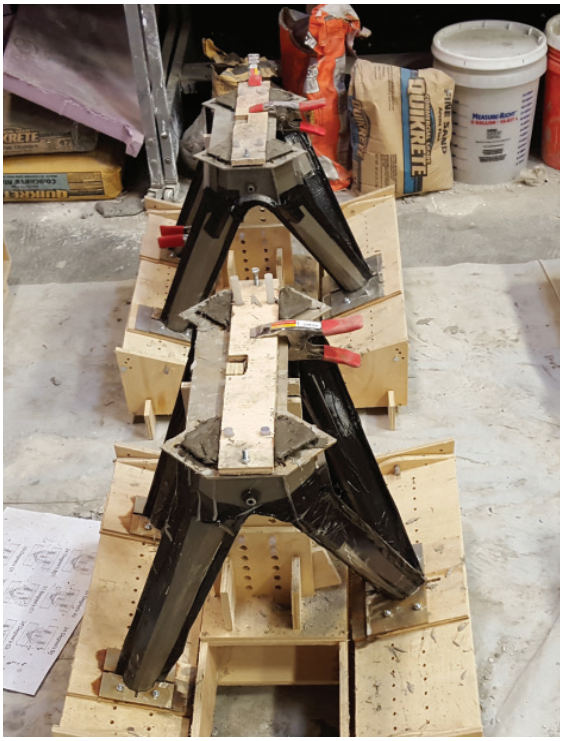
While folding techniques of origami patterns facilitated efficient production and cost-savings for formwork, PETG as a material proved insufficient for concrete casting due to hydrostatic pressure and susceptibility to cracking from chemical reactions. As such, an external adjustable jig was designed to help both support the mold during the casting process and ensure accuracy and precision across all unit types at joints. The reconfigurable jig accounts for all the various parameters of both the unit types and the overall lattice design. Broader discussion around variations in the method of aggregation and the experiential conditions of the lattice construct furthered the investigation. Through prototyping and fabrication, *Concrete Lattice* highlights the value of design research for design studio learning.

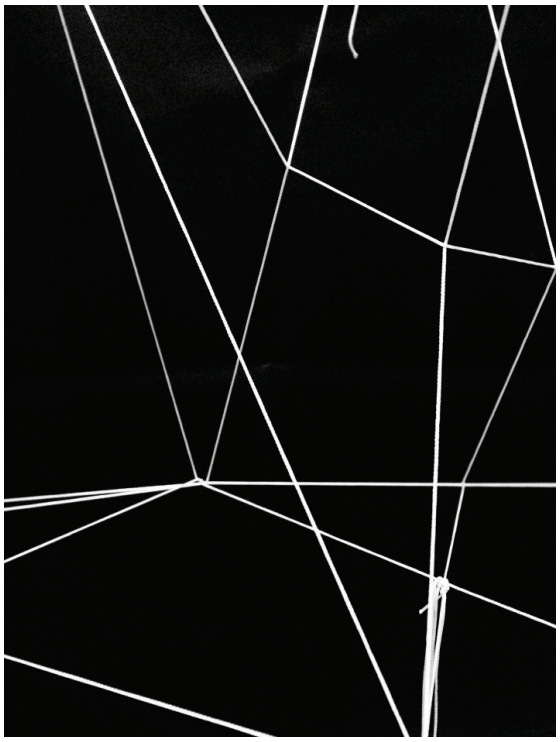
The material complexity demonstrated in this project argues for the use of computational design in both design decisions and managing the myriad contingencies involved in the production of a novel architecture. Complexity in this respect addresses not only formal and experiential concerns, but also structural and manufacturing processes. While the unit serves as a model for the scalar versions of itself to proliferate, the parameters of each unit also determine how it can aggregate. Methods for aggregation then represent a typology of spatial conditions achievable within the system.

Typically, any built work must negotiate social environments and engage the opportunities and constraints inherent in its context. *Concrete Lattice* is situated within a discourse around the human scale and basic properties of enclosure. Extra-disciplinary conversations about fabrication and technology's role in architecture relate the problem of inhabitation to systems thinking in contemporary design methodologies. ■

LEFT

Selection of unit types after casting, post-processing, and organizing—ready for transport.



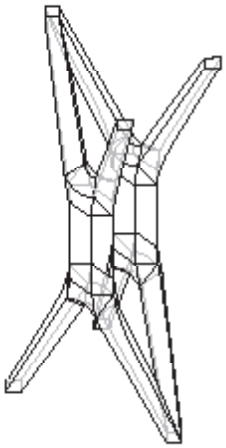


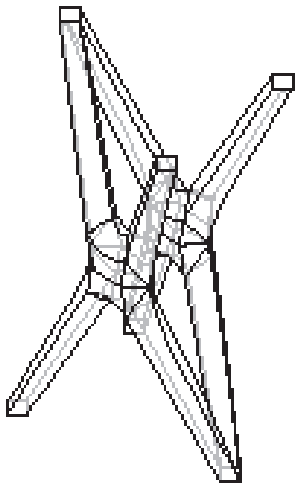
RIGHT

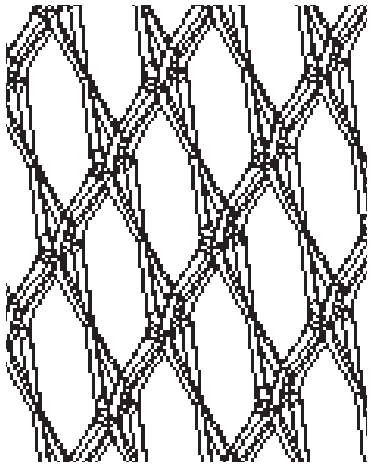
Componentry—cable, pipe, stand-offs, and soft membrane.

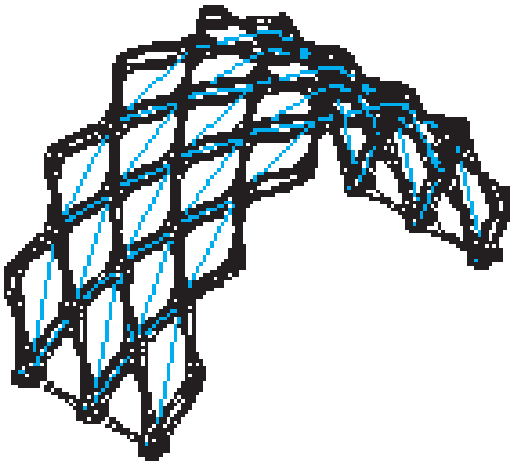
LEFT

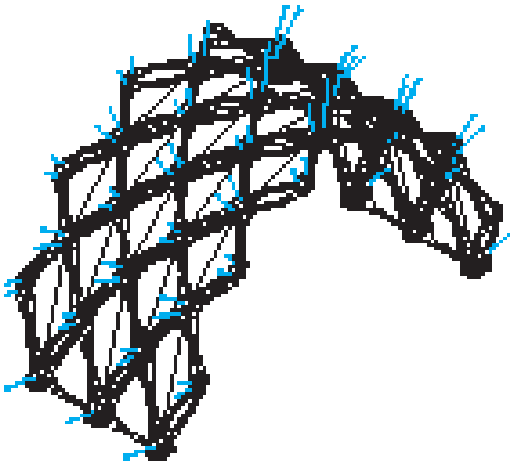
Spatial nets and the biomimetic geometry of bubbles and spider webs.

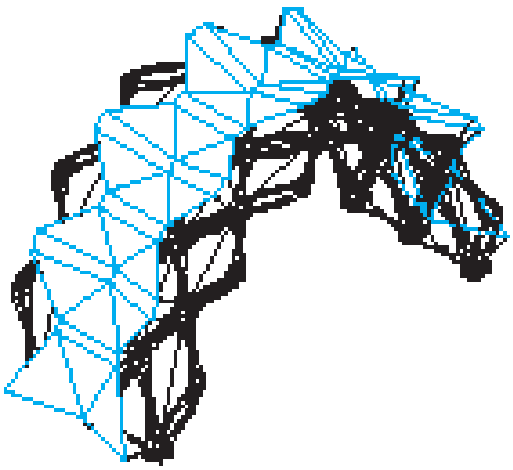












RIGHT

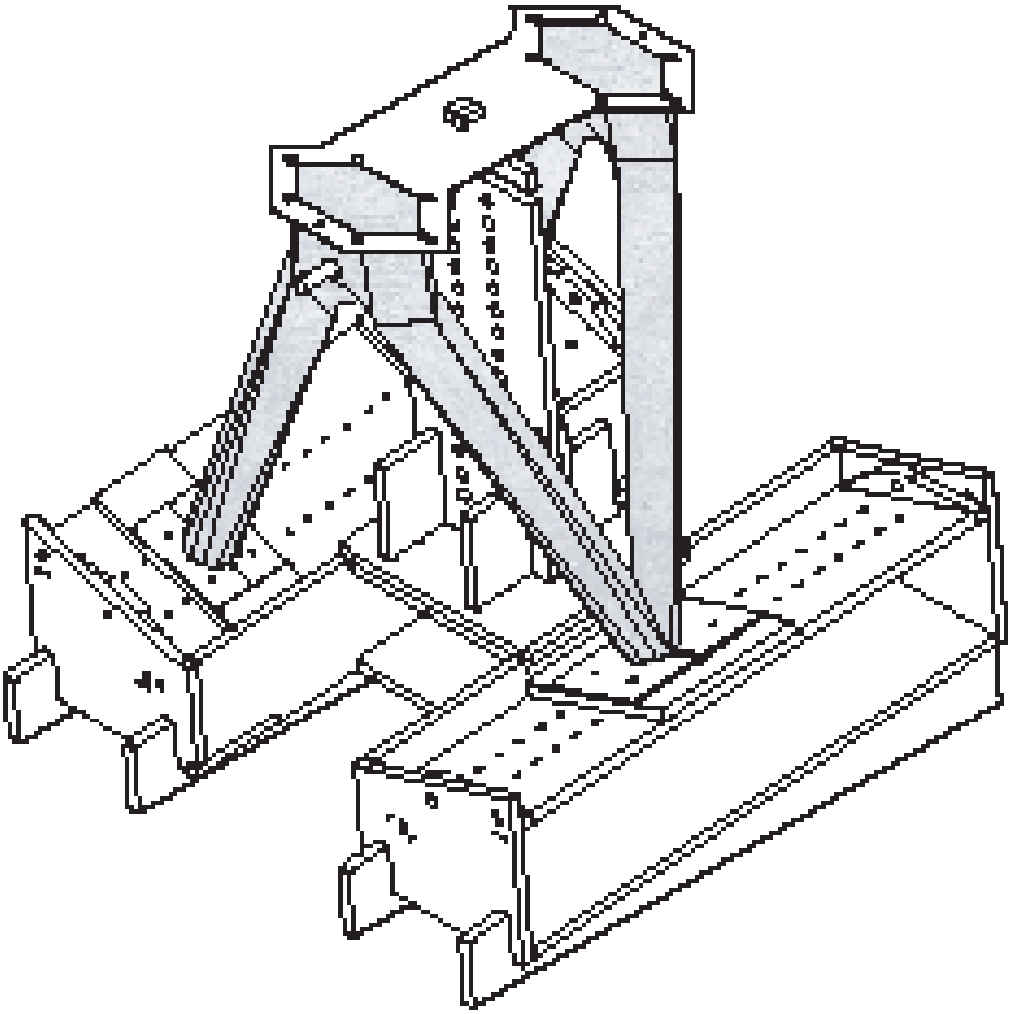
The full aggregated lattice vault and its bounding box, part of a typology of lattice systems.

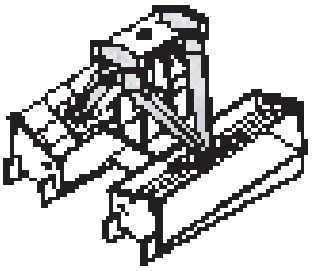
LEFT

Unit discovery from a 3D diamond lattice to a single unit split for concrete casting.

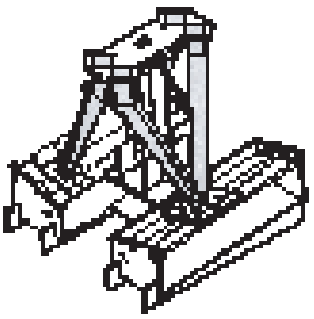
ADJUSTABLE JIGS

Variations of unit sizes needed to be cast to cope with the catenary geometry of the vault. Jig configurations illustrate the flexibility of the lattice form and the allowable precision.

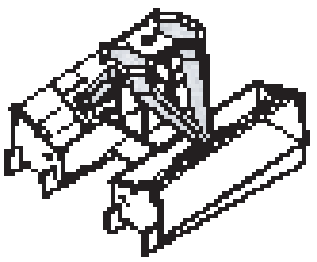




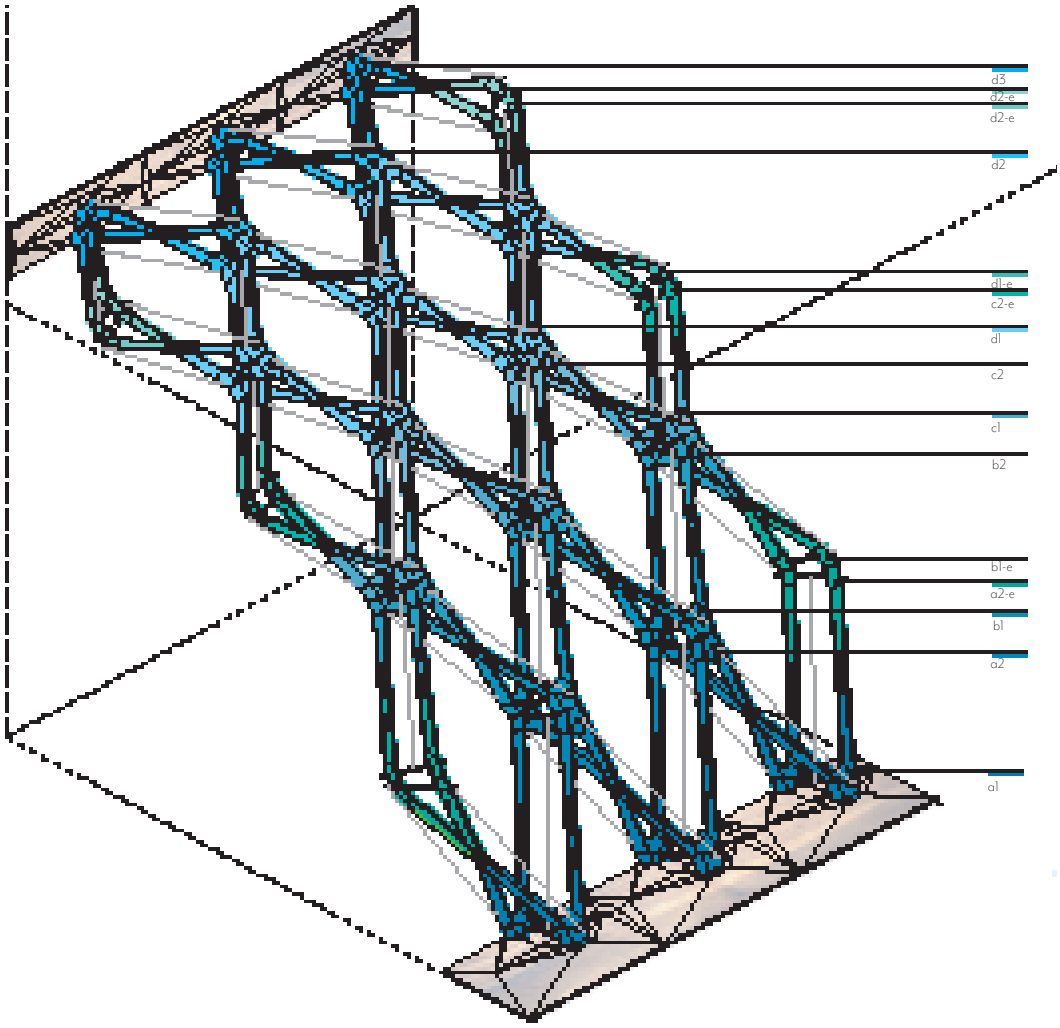
unit d1
height: 10"
collar width: 8"
leg angle: 39*



unit a2-e
height: 18"
collar width: 12"
leg angle: 20*

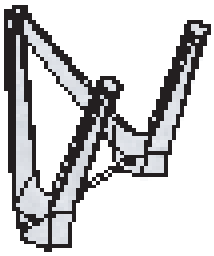


unit c1
height: 12"
collar width: 10"
leg angle: 31*

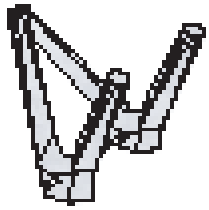


LATTICE SYSTEM

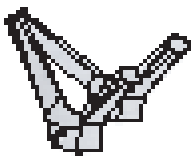
The system is color coded by unit type to show them shortening and slimming as the system grows vertically. System diagram for the built lattice construct showing tension cables used to minimize scaffolding.



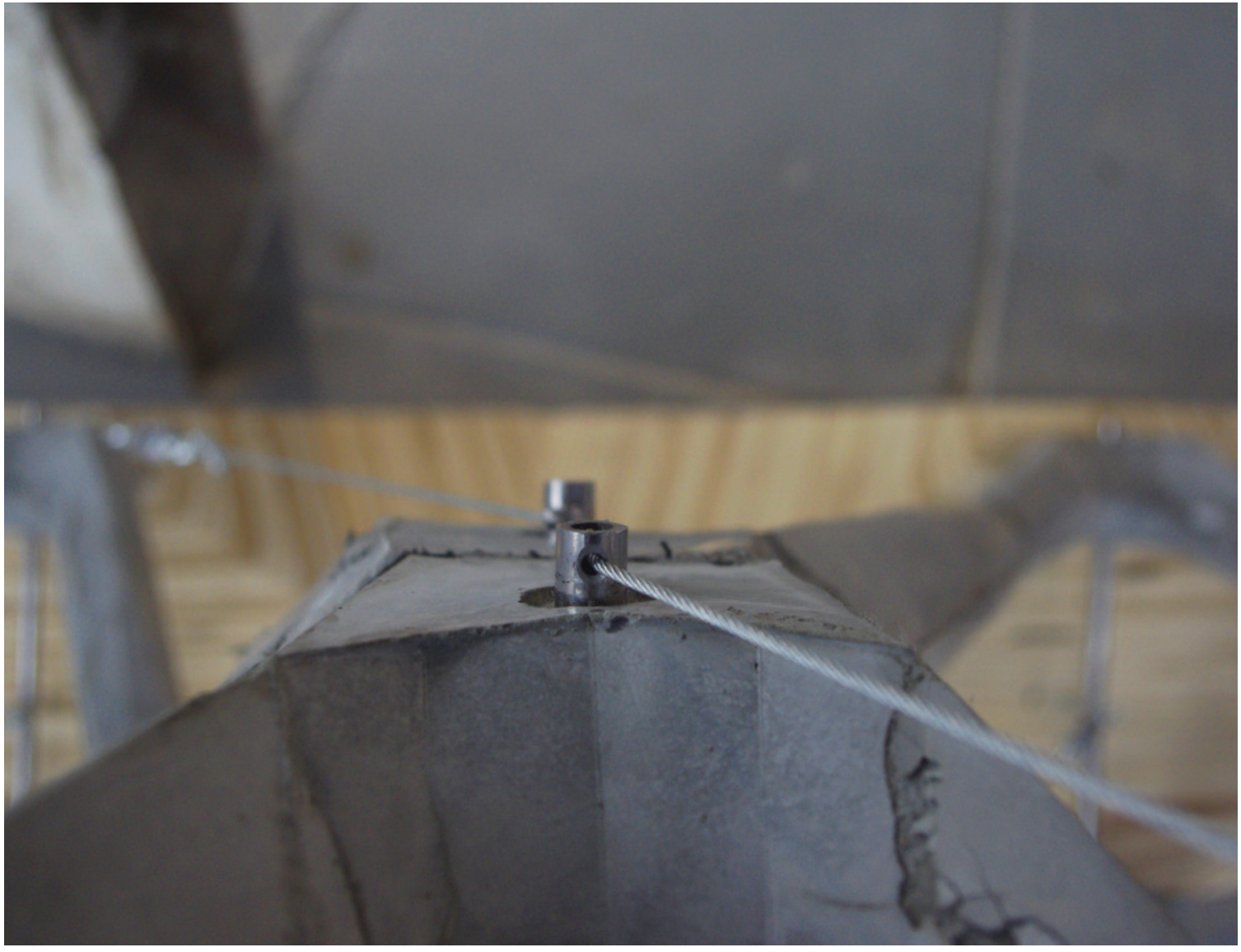
unit a1
height: 18"
collar width: 14"
leg angle: 20*

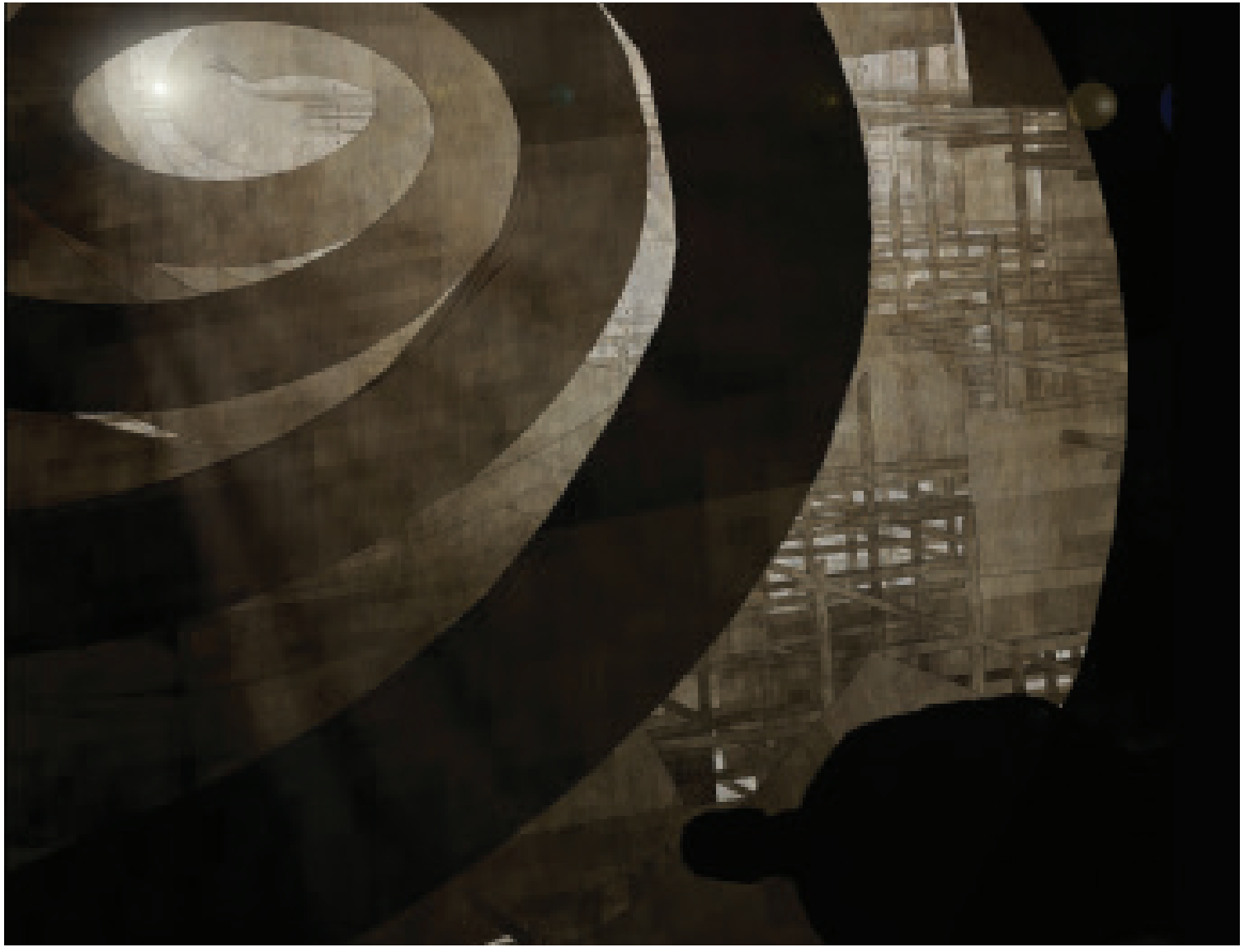


unit b2
height: 15"
collar width: 10"
leg angle: 24*



unit d3
height: 10"
collar width: 6"
leg angle: 31*





Phenomenal Inversion

Death and the Symbolic Shadow

Jiming Chen | Advisor: Keith Mitnick

Light and shadow are more than just the basic elements required for visual perception—they are also closely tied to human sensation and emotional experience. Light and shadow project a complex social metaphor and, beyond physical phenomena, they resonate with a strangely impenetrable familiarity.

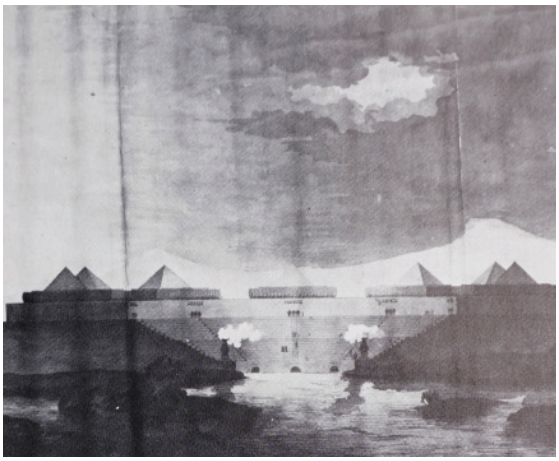
The iconography of death and time draws upon a rich imagery of darkness and light. It developed through religious instruction in which God was the ultimate source of light, banishing darkness from the universe—but the finite realm of human mortality was linked to darkness.

Richard Eltin described the sublime as, "Whatever is fitted in any sort to excite the idea of pain and danger." In the case of darkness, danger is inspired by fear of the complete unknown. Historical links between the notion of the sublime and the typology of the cemetery, coupled with the spatial inquiries of darkness and shadow, suggest the possible study of an architecture of death and shadow.

Early associations between shadow and death can be found in representations depicting death. High contrast between dark and light characterizes the drawing of Death on a Pale Horse and Death as the Fourth Horseman, where death is rendered as darkness and the feeling of the sublime, by contrast, is enhanced with dramatic light breaking through the clouds.

Later, Pierre Fontaine incorporated such techniques of light and shadow into his interpretation and representation of a cemetery, a different approach from the earlier designer Leon Dufourny, who designed his cemetery building pale and flat. Fontaine imagined a thunderstorm to illuminate, if only for a fleeting moment, the summit of the cenotaph. Thus, the figure of his architecture of death, with its sober form and vast dimension, was made as natural a part of the landscape as the storm itself.

DEATH ON A PALE HORSE



DUMANNET, CENOTAPH IN HONORS OF EXPLORERS, 1788

Dumannet, in his design for the Cenotaph in Honor of the Explorers Who Perished in the Voyage of M. de La Perouse, expressed through similar representation moments in which architecture was depicted more intimately with the human experience of nature: the sky, earth, sun, and light. The interaction between light and shadow rendered the monumental as a natural sublimity, while death was given more respect, conveyed through the grandeur of nature.

Louis Boullee succeeded in translating the architecture of death to an architecture of shadow. The inspiration for Boullee's funerary architecture came through a deeply moving experience in which the architect had come to understand the relationship between his own mortality and the seasonal death universal in nature.

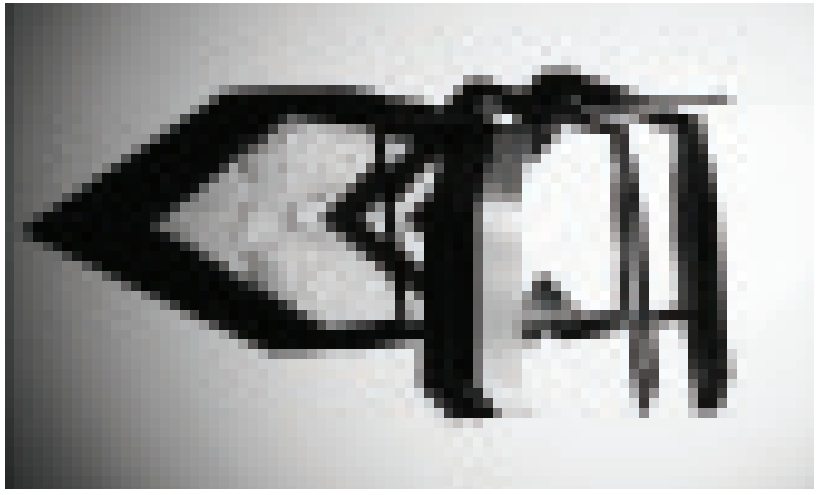
Boullee saw the order of the universe most clearly in the changes of the seasons—he characterized the course of the seasons as the transformation of simple forms seen under different conditions of light. Early research for this thesis focused on the observation of the geometry, atmosphere, materiality and temporal condition of light and shadow: 1) The architectural potential of the shadow is not only limited to a simple physical projection. Its ability to magnify dark atmospheres and transparent forms (the object) privilege the representation of the shadow over the object itself. 2) Shadows can become darker and more dense than objects, offering the possibility of transformation between immateriality and physicality; a solid image on a surface or a real geometric mass. 3) The momentary and unstable nature of shadow evokes uncertainty and restlessness, perhaps even the feeling of danger. 4) Shadow's ability to reveal the unseen and the "blankness."

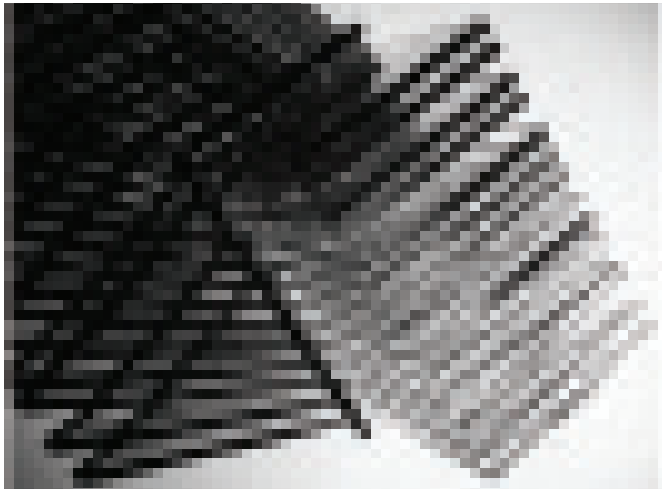
The diversity and temporality of shadow phenomena affords space where light and darkness narrate the story of time and memory. This is not a place where visitors become audience, but a stage that invites people to become performers and consider their own lives as a story.

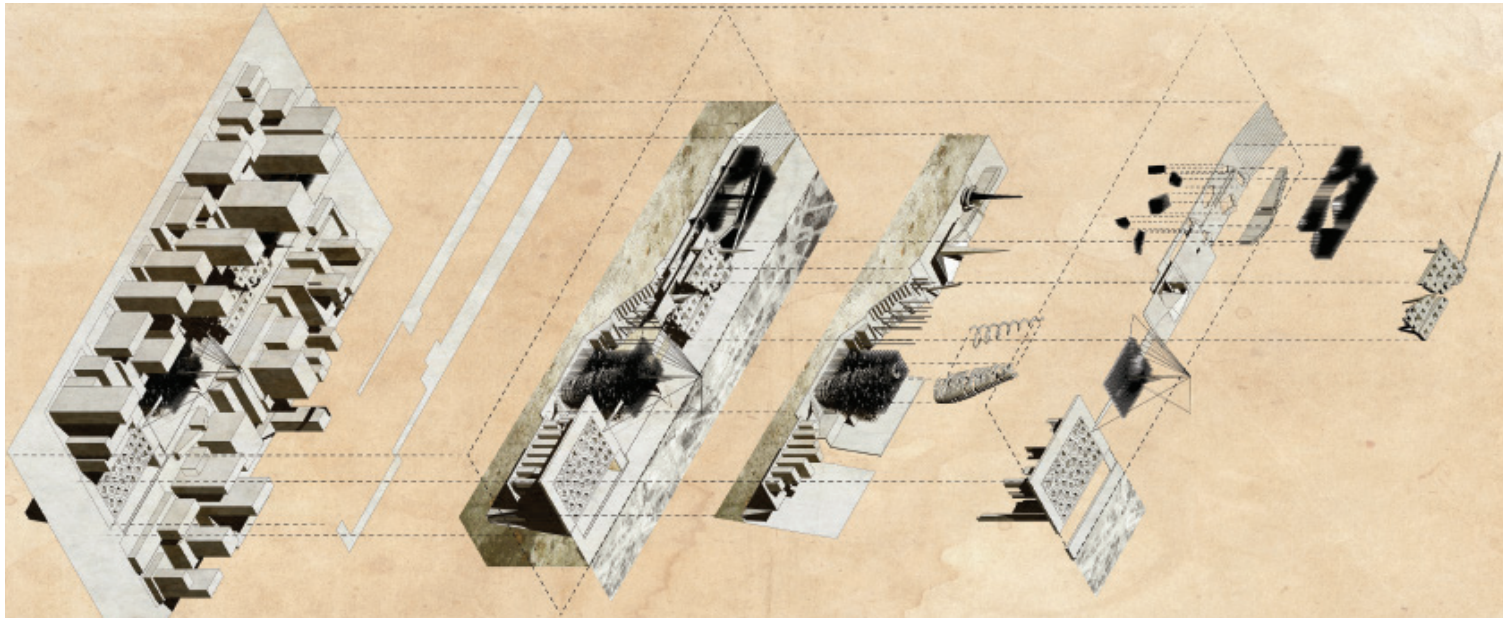
The Memorial Promenade is where light and shadow become both an honest narrator and a vivid creator for the story of life and death. Although they occupy an important role in the historical depiction of life and death, light and shadow are not typically treated independently as architectural characters. Commonly perceived as a flat image projected onto a surface, shadow's three dimensional volume is often neglected.

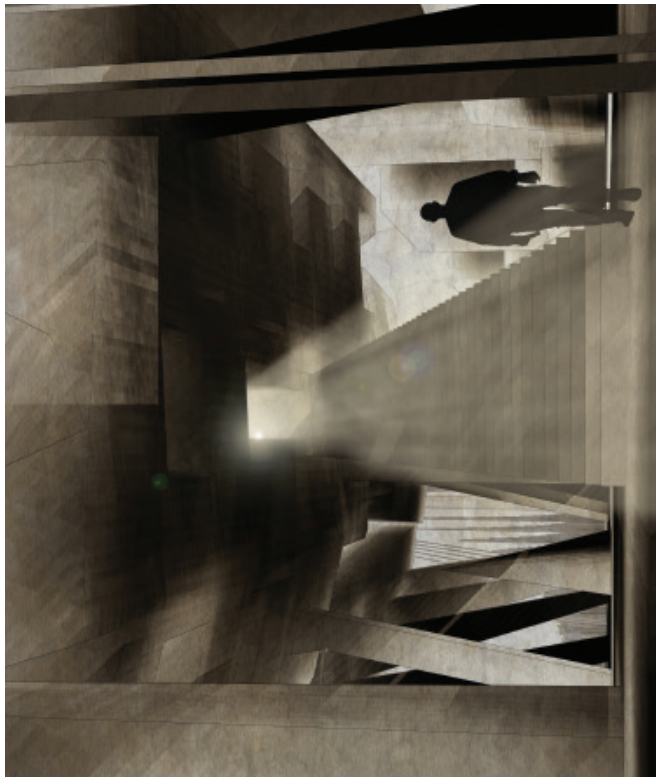
While nature sometimes creates shadow as a solid object that occupies the space where light is blocked out, it also creates shadow as a void, not made behind the object, but rather out of the solid. This premise provides greater possibilities for how light and shadow could express more symbolism within the architecture of death and memorial space through shaping basic architectural elements: the structure, circulation, fenestration, and envelope.

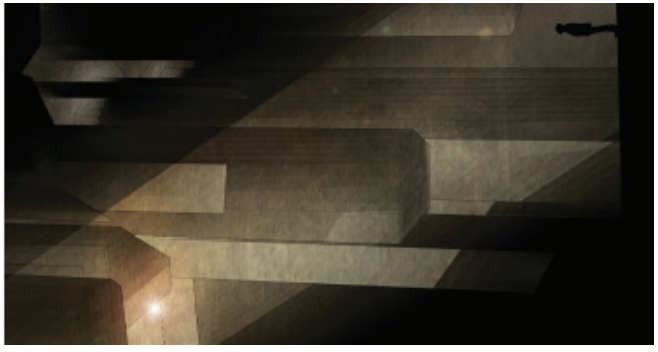
In space characterized by light and dark phenomena, shadow physically casts and creates light. Symbolically establishing a spiritual place from a stable "shadow volume" and a spatial sequence that comes out of solid shadow. The architecture in this thesis expresses the historical graphic representation of light and shadow and their effects as geometric and symbolic architectural forms. ■

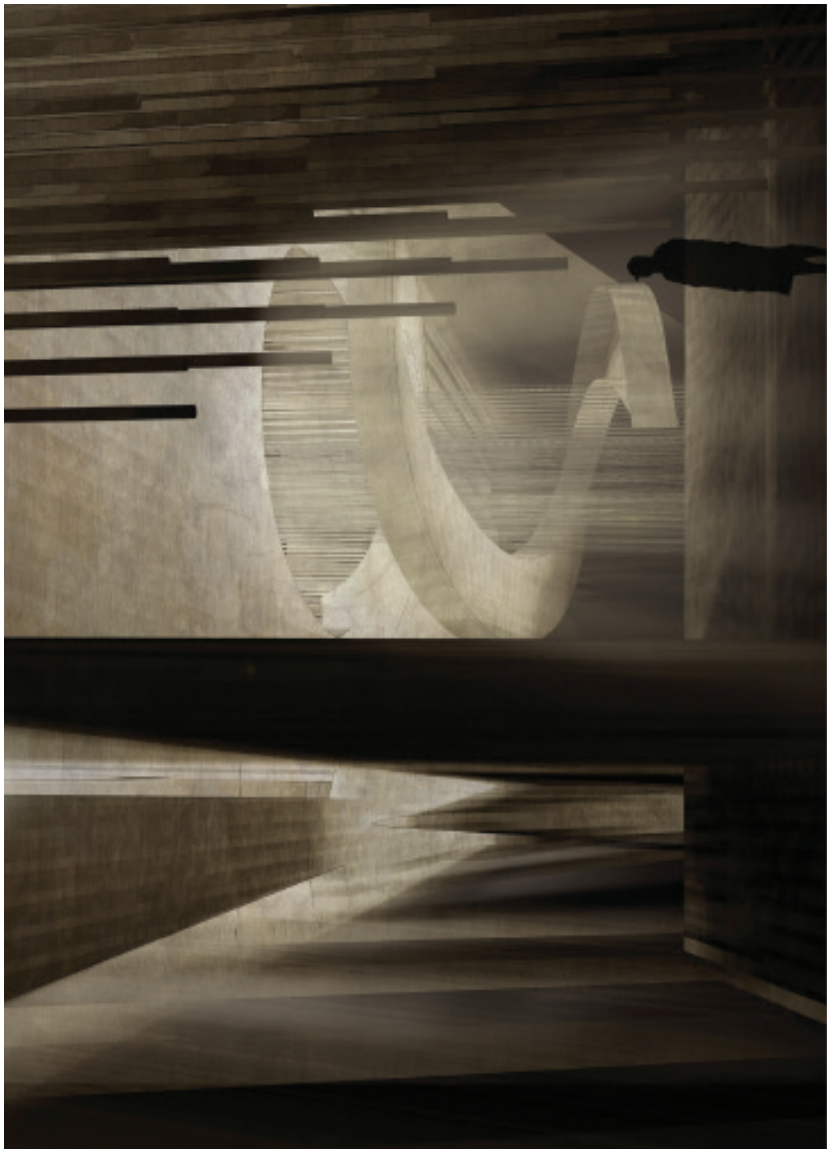


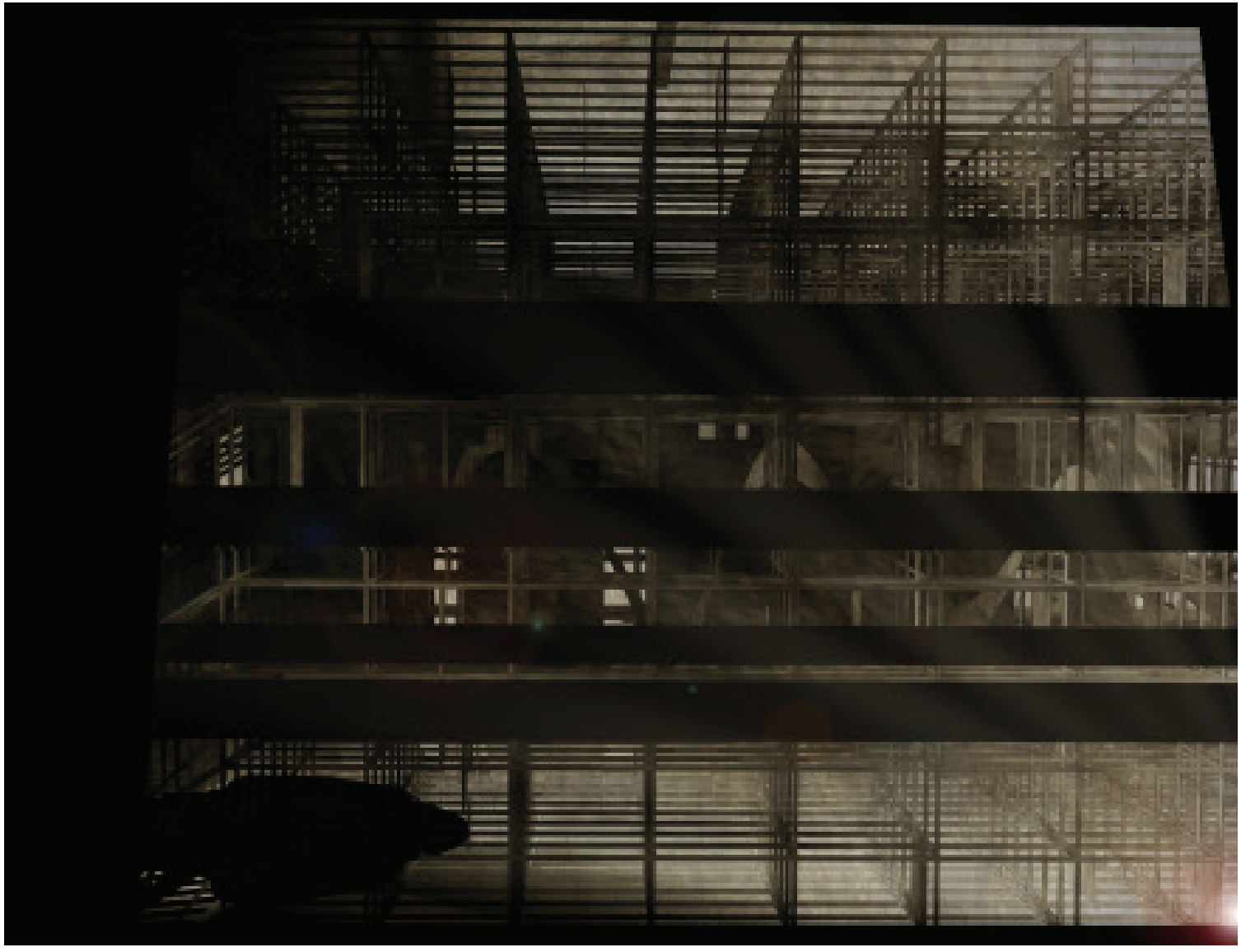


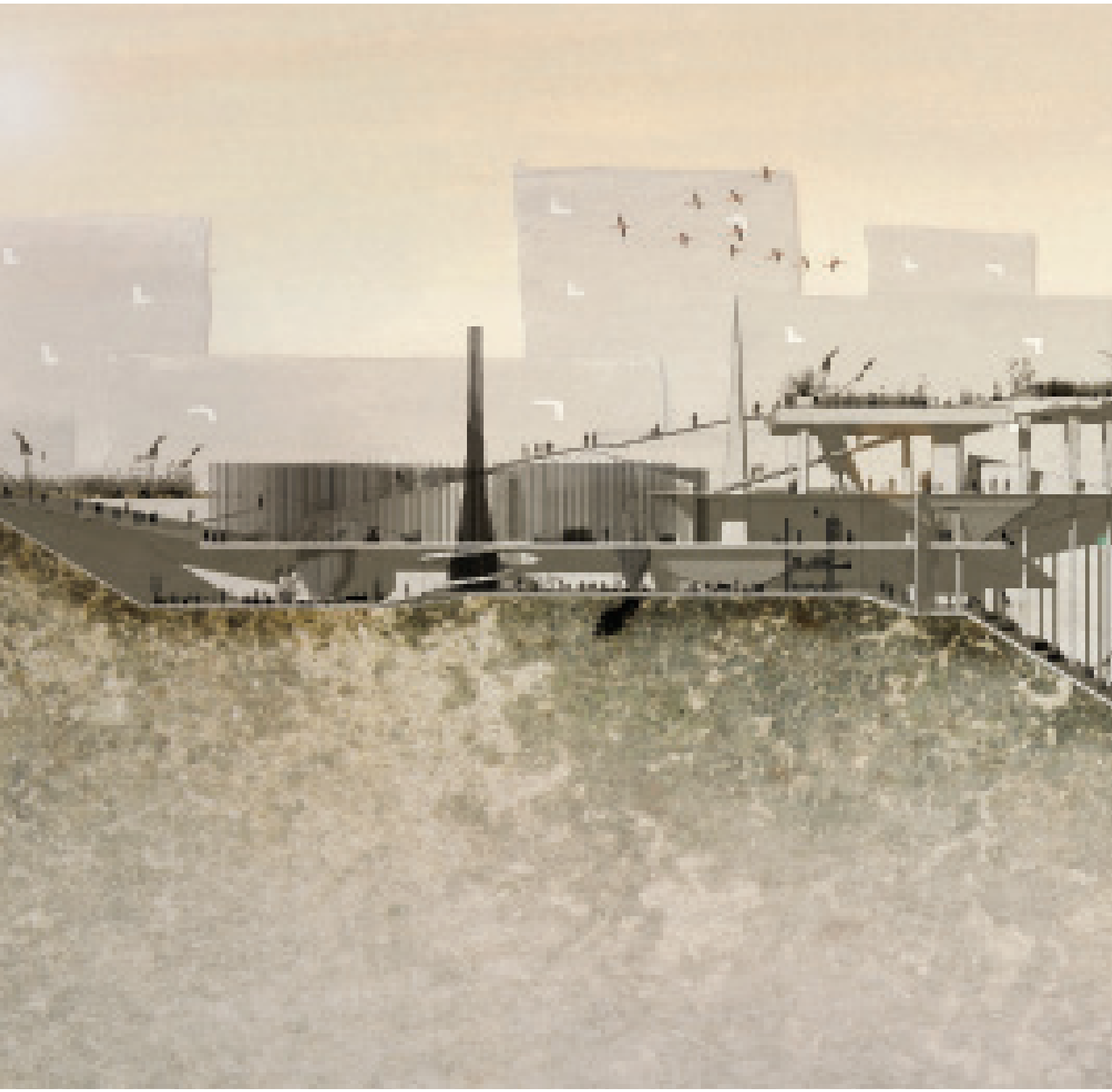


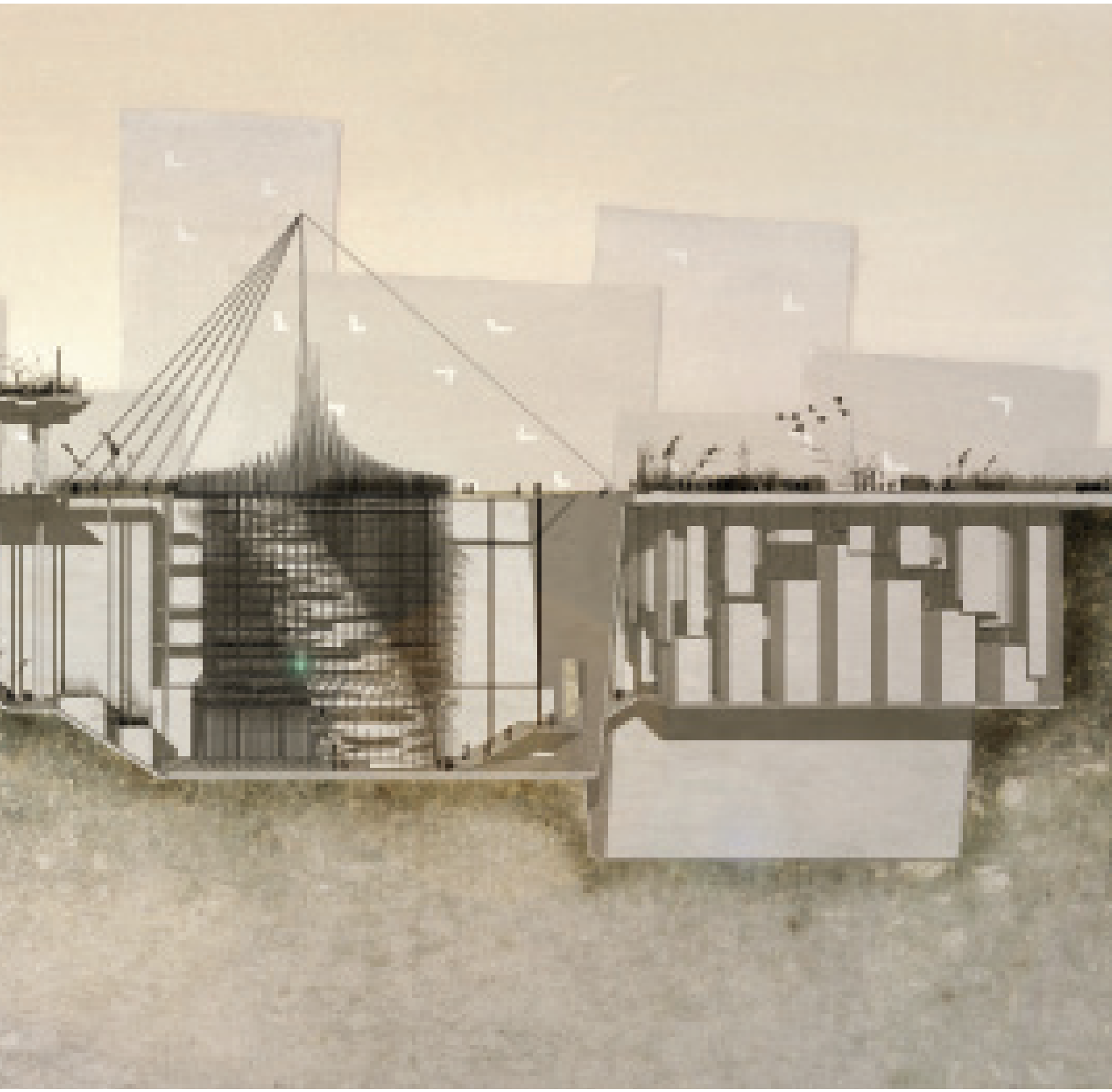


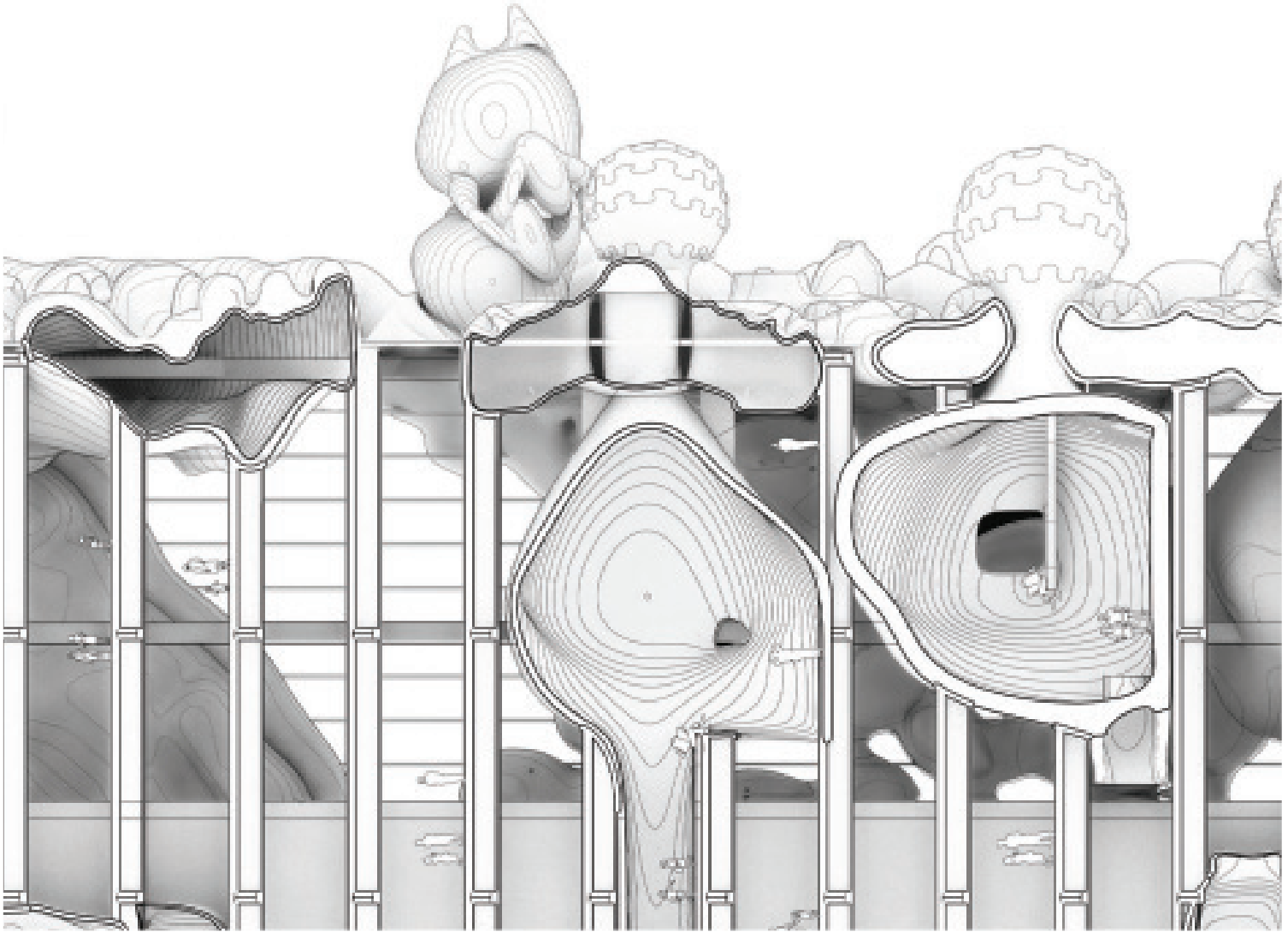












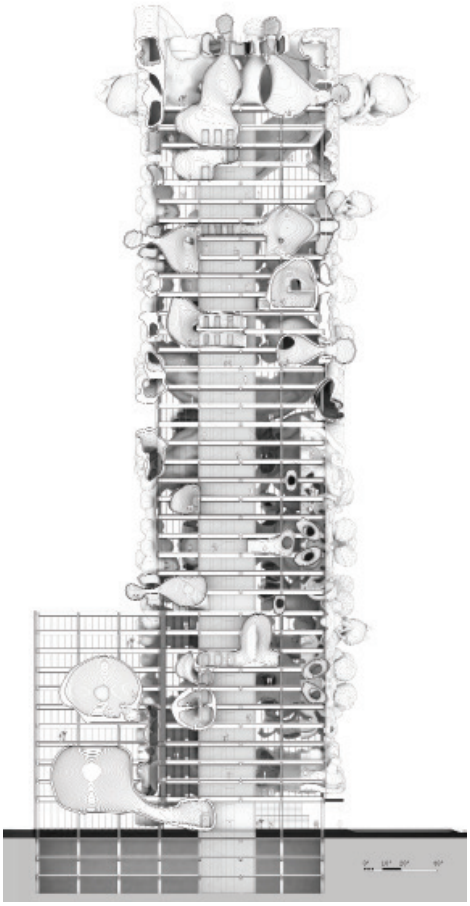
Cute Seams/ Seems Cute

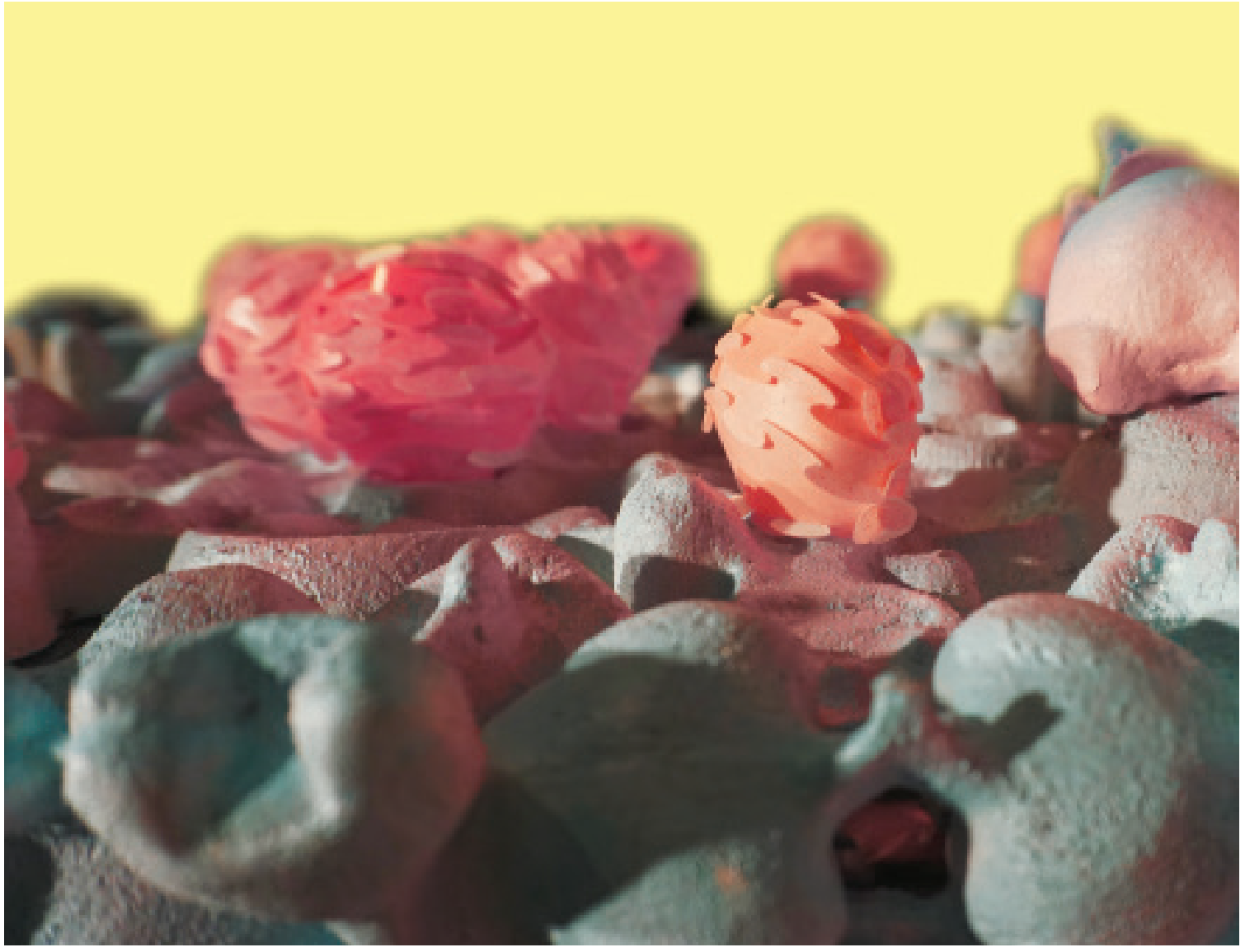
Stefan Klecheski, Yingjing Ma, Siwei Ren | Advisor: Matias del Campo

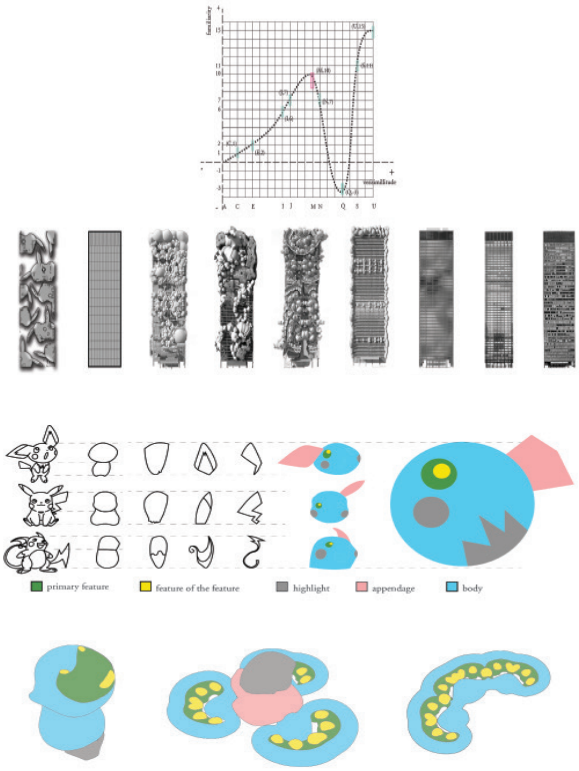
WHY CUTE?

How can cuteness be deployed in architecture? Is there a relationship between the uncanny and the cute? We investigate these questions through the design of an uncannily cute Seagram Building. The Seagram Building is the emblem par excellence of high-modernist architecture, and embodies key aspects of the movement—purity of form distilled to a replicable aesthetic, material and construction system; expression of function and structure; embrace of technological advancement in the service of social progress; and construction of the project enabled by corporate interests. All of these factors produce an aesthetic of elegance, sobriety and purity. As Sianne Ngai argues in her book *Our Aesthetic Categories*, binaries of beauty versus ugly and sublime versus grotesque have traditionally dominated aesthetics. In the age of late-capitalism, there are new categories—the cute, zany, interesting, cool, and futuristic. These minor aesthetic categories fall outside the realm of the territory occupied by these dominant binaries. They are not necessarily offshoots of classical categories, but rather agents remapping the aesthetic terrain.

How can we evaluate cuteness as a minor aesthetic category in architecture? Graham Harman's evaluation of H.P. Lovecraft, a minor literary figure, posits the notion of "ruination" as a means to identify the qualities that make an object (the linguistic structure of the text) uncanny. By proposing alternatives, we may better evaluate what makes a thing unique. So, by proposing a perversion of Mies van der Rohe's architecture of sobriety, we unpack the field of aesthetic categories extant in architecture today. These ruinations help identify the uncanny nature of the building. Cute forms are agglomerated as a means to unpack the Seagram Building's unique qualities, and as a means to investigate cute effects and tectonics.







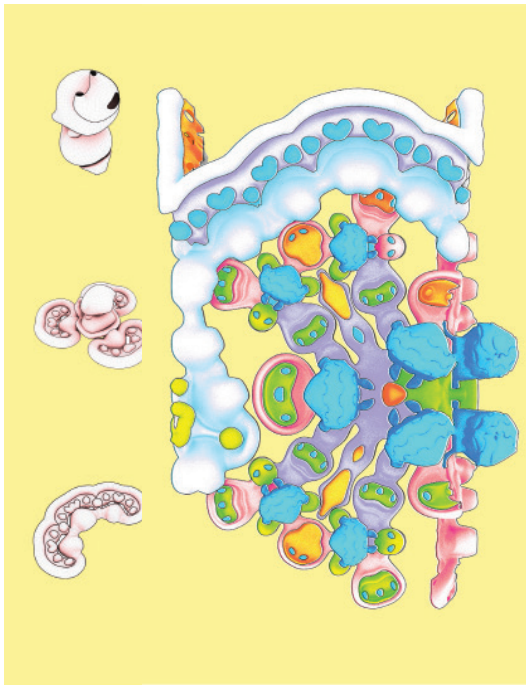
BUILDING CUTENESS

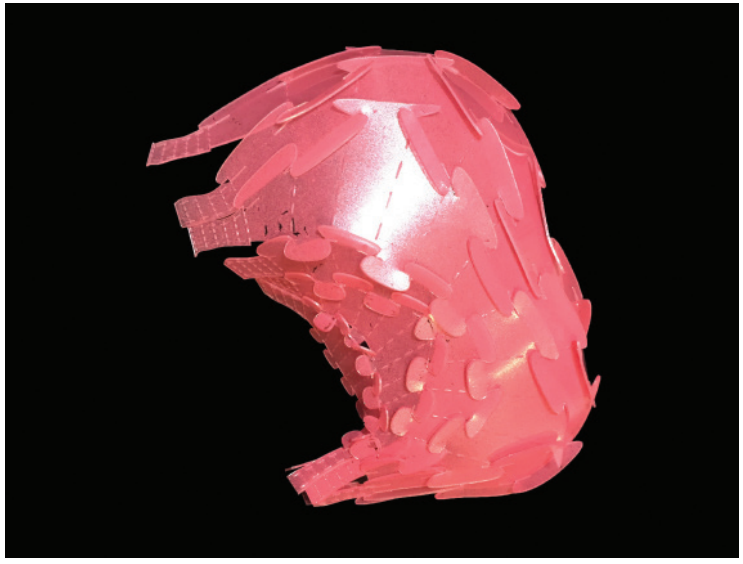
Cute Seams/Seems Cute is not only invested in the design of the cute, but fabricating the cute and creating cute objects nested in a cute field. These objects and field materialize through cute tectonics of the 2D and the 3D. Cute tectonics of the 2D are explored through construction from sheet material and finger joints. Finger joints traditionally create elegant seams. By amplifying the size of the finger joints, a relationship between surface and feature emerges. This relationship, in its awkwardness, roundness, and texture, can only be called "cute."

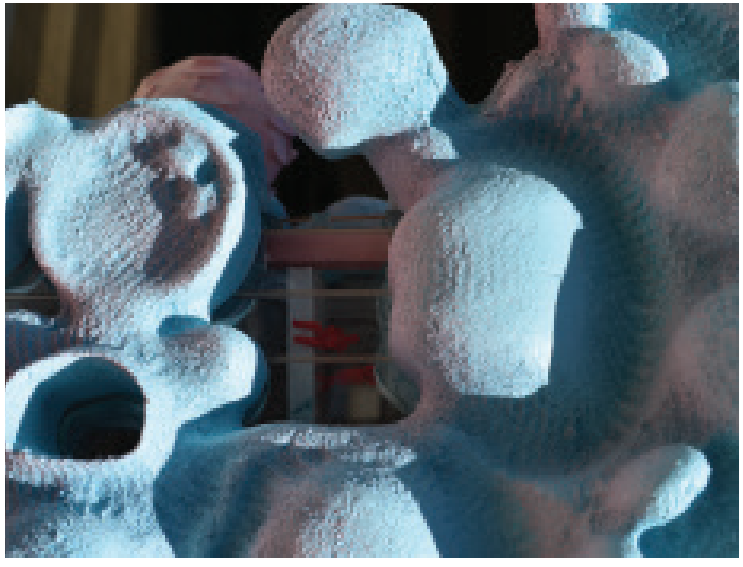
Cute tectonics of the 3D are explored through subtractive and additive fabrication techniques. The majority of the façade is milled from foam, creating a cute, thick field hugging the Seagram Building's curtain wall and integrating with the original I-Beams. Discrete panels accentuate features within this field. Popping from the façade, these panels reinforce and suggest readings of familiar forms embedded in the design. The cute objects and field of the uncannily cute Seagram Building are round, featured, and made of foam and plastic. They inhabit the same space as the elegance and functionalism of the original Seagram Building. The new cute constructs bite away at the floor slabs, and rest on the original plaza, reconsidering the relationship between object and context. ■

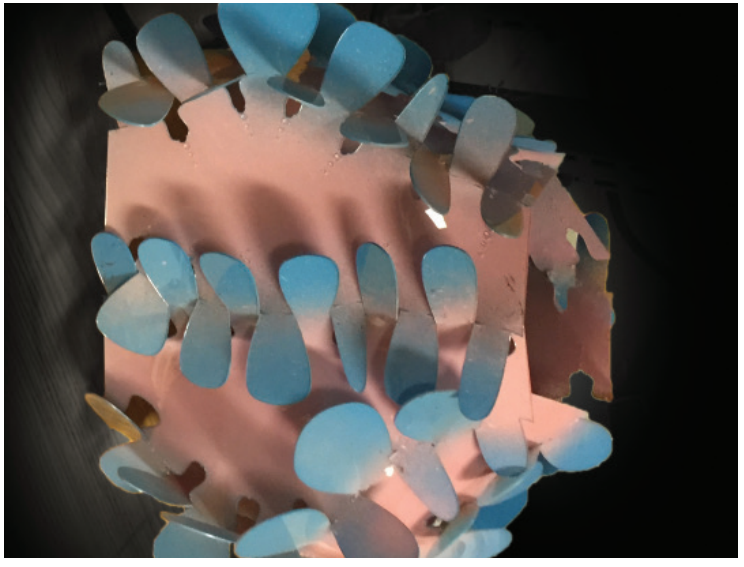
COMPOSITION AND THE UNCANNILY CUTE

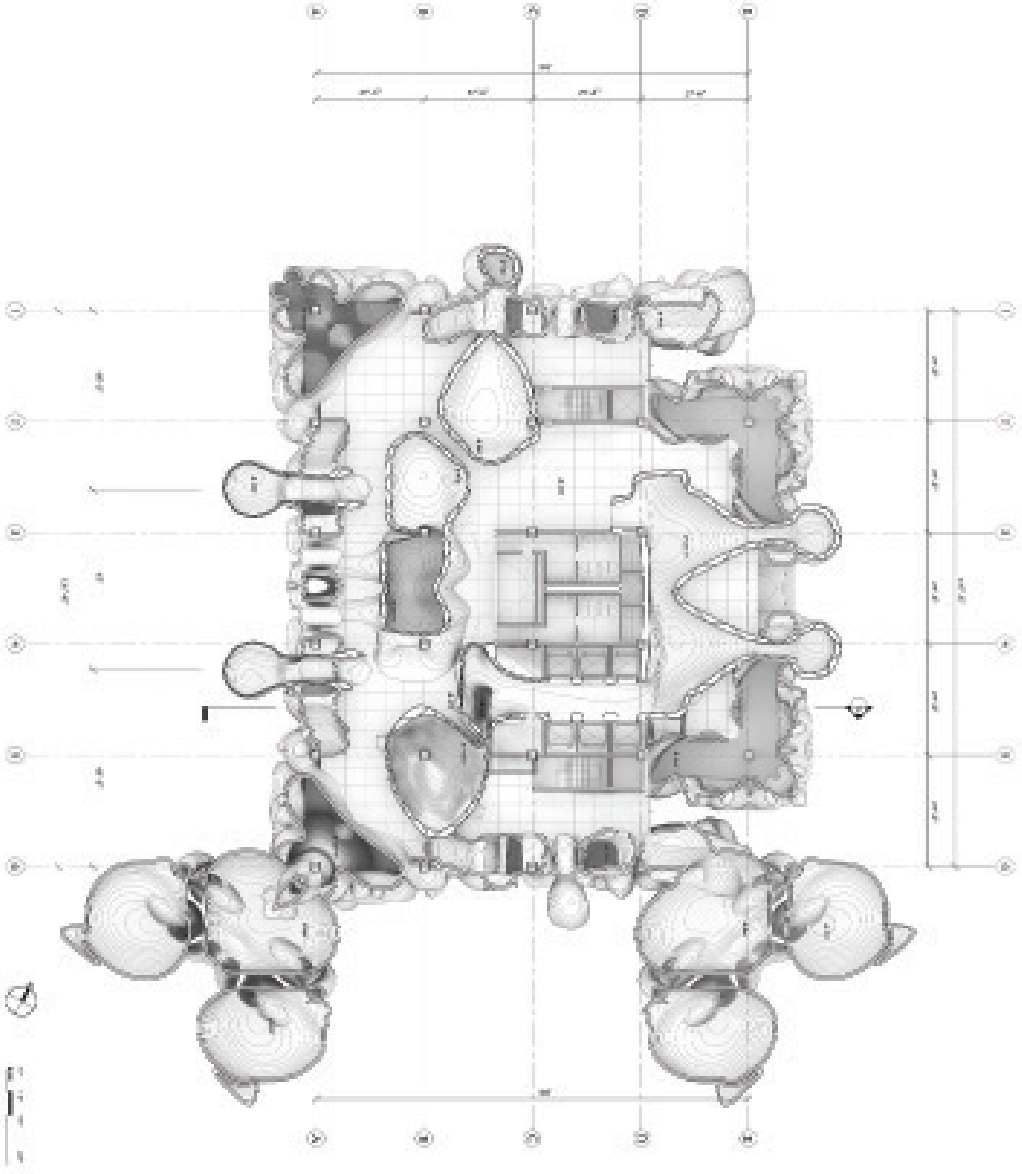
The cells in Cute Seams/Seems Cute are based on the features and proportions of cuteness. These are deployed in a redesign of the Seagram Building, a tactic rendering the building at once cute and uncanny. The result is uncannily cute. Starting from a basic sphere and torus, the cells evolve to different degrees of expression of cuteness, from normal cute, to complex cute, to grotesque cute. The cells used in our design are of three types, representing different aspects of cuteness: the feature cell, the border cell, and the integrated cell. Viewed alone, our uncannily cute cells produce the effects associated with cuteness: empathy, pity, powerlessness. However, they cannot guarantee the overall mood of the whole building. Thus, a compound agglomeration is formed based on the original uncannily cute cells. The agglomeration not only occupies the space but also intensifies the uncannily cute atmosphere. In terms of our uncannily cute Seagram Building, the agglomerations are carefully applied to constitute two U-shape chunks in plan and a shifted symmetry rhythm in elevation. Two of the elevator cores are swallowed by the agglomeration, to explicate a contrast to Mies's elegance—our uncannily cute.

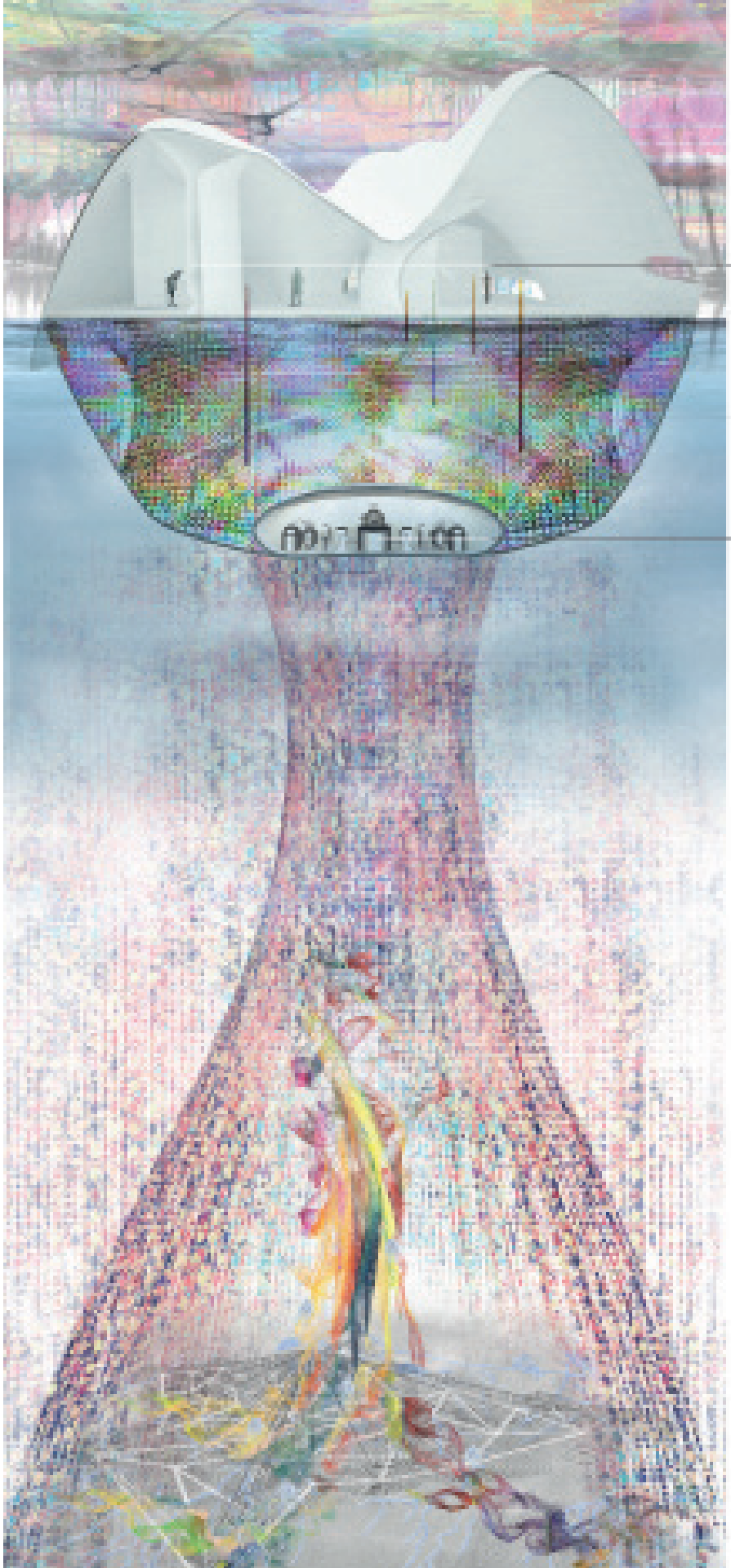












Olfactory Theater

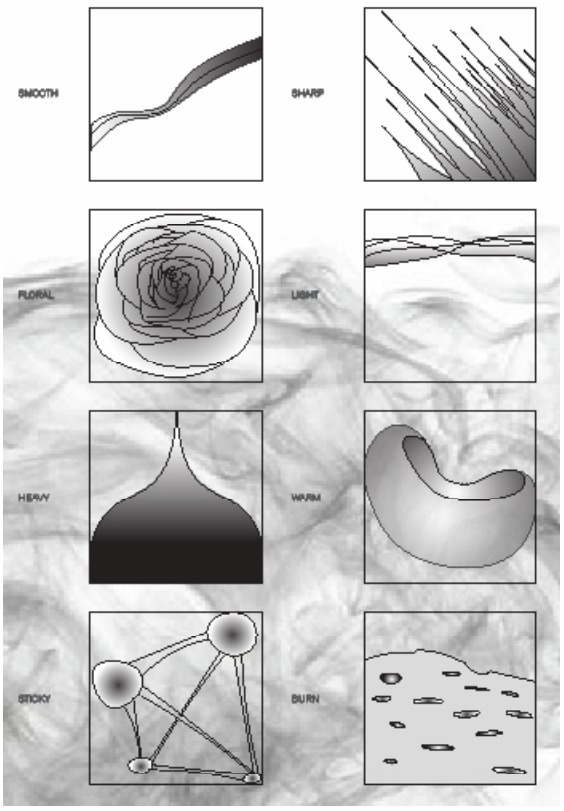
Tianyi Momo Wei | Advisor: Jen Maigret

Scent constitutes one of the most important relationships between animals and their environment. It is essential for navigation, for foraging and detecting danger, and for survival. In humans, scent is the only sense directly connected to the brain. Scent stimulates our olfactory bulb, a part of the brain's limbic system closely associated with memory and feeling. As a result, smell can instantaneously trigger memories and powerful emotional responses.

While olfaction is a singularly powerful sense, it also contributes to complex interactions across multiple senses. An example of this is the synesthesia condition. Synesthesia is an experience in which multiple senses blend and blur. This can include seeing colors when hearing music, or hearing sounds when feeling objects. Scientists believe that everyone has synesthesia before age one, yet as our brains develop, we grow out of synesthetic tendencies. By adulthood, only approximately five percent of people retain such ability.

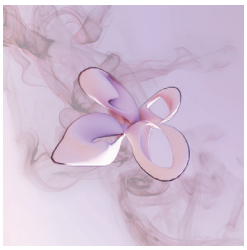
Broadly speaking, senses both expand and limit perceptions of the world. Albert Einstein noted the possibility that sensory limits mask our awareness of hidden worlds. If we understand the world almost entirely based on perception, what are the implications if this connection is incomplete or distorted?

Exploiting synesthesia and other rich perceptual experiences reveals hidden worlds. In the world of architecture, vision dominates spatial experience. However, memories recalled by odor are significantly more emotional and evocative than sights seen. Therefore, using scent as media, the Olfactory Theater expands the perception of space and time, and memory acts as an active contributor to spatial experience. ■



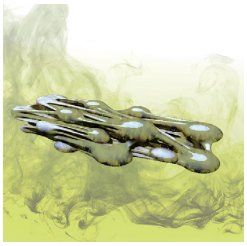
ODOR

Visualization of basic smell types. Humans have 350 functional olfactory receptor genes that can distinguish 10,000 different kinds of odors. There are ten basic types of smell easily recognized by the human olfactory bulb that can be described with eight common adjectives.



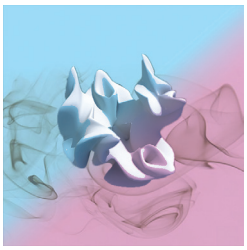
Fragrant

Fragrant



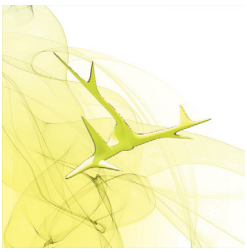
Decaying/Sickening

Decaying/Sickening

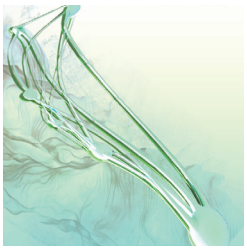


Sweet

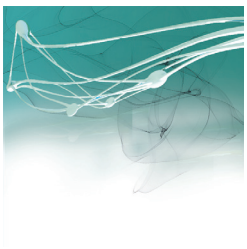
Sweet



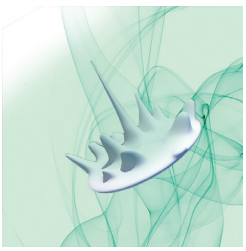
Lemon



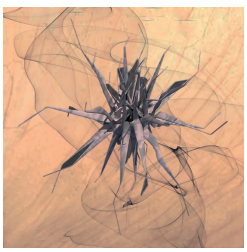
Lemon



Minty/Peppermint



Minty/Peppermint



Sharp/Pungent

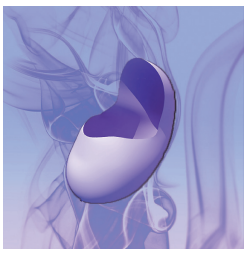
Sharp/Pungent

Popcorn

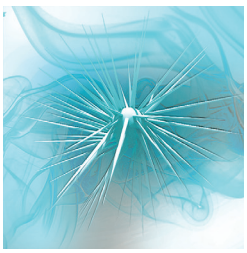
Popcorn

Woody/Resinuous

Woody/Resinuous



Chemical



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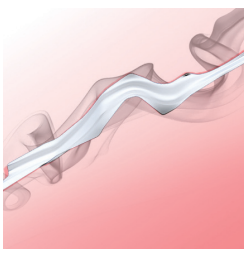
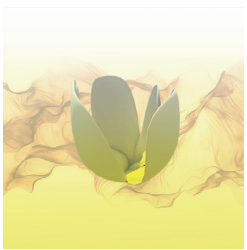
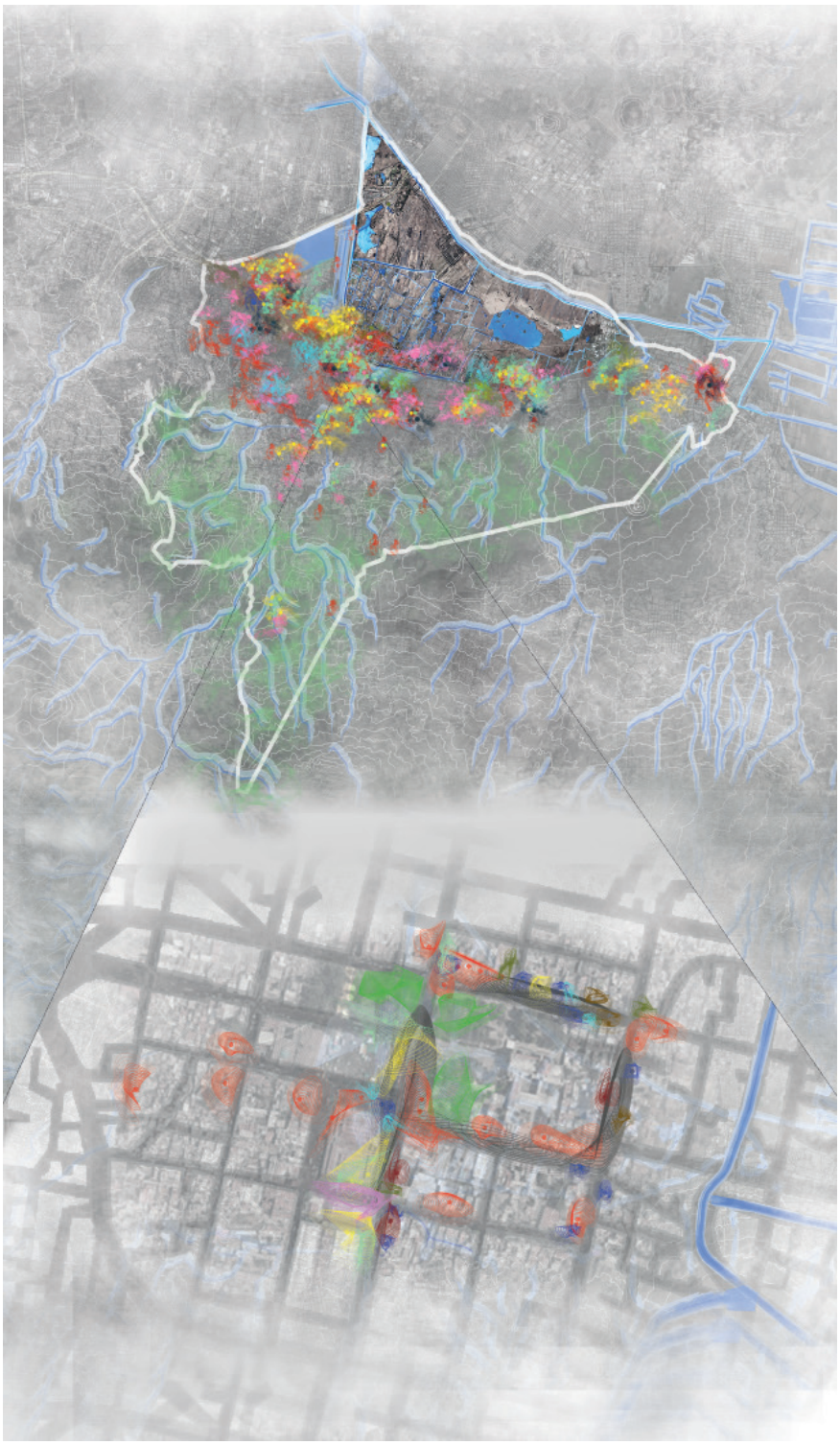


Non=Citrus Fruity



Non=Citrus Fruity

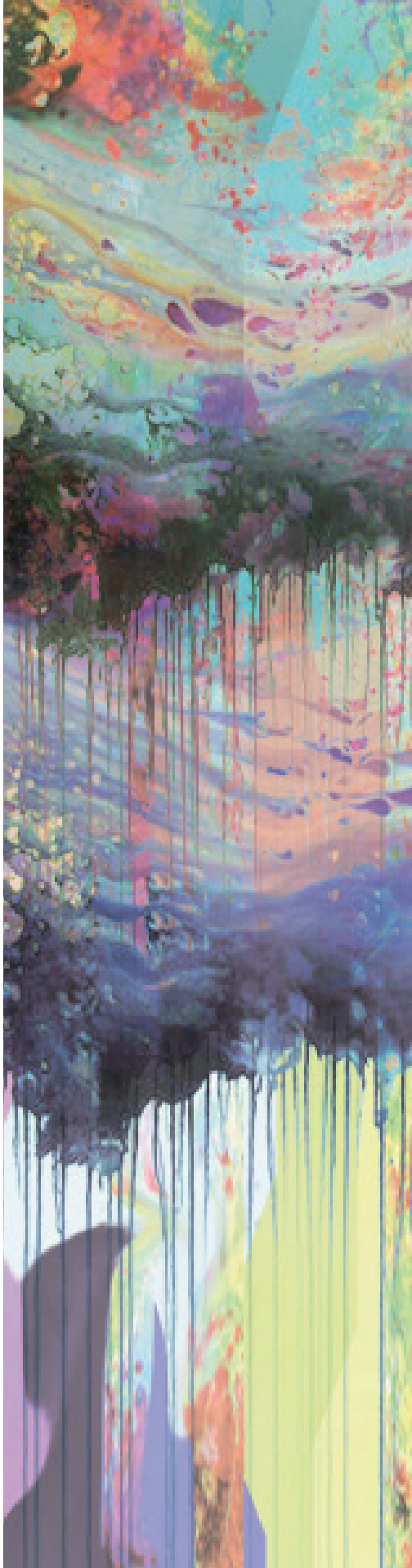


SMELL MAP

Odor detectors are scattered across the Xochimilco area to gather information. Each detector has a certain range of signal area and between detectors there is data exchange to improve information accuracy. All data is transmitted to the Olfactory Theater to store and recreate smells. Based on that information, smell also becomes a tool to map the city.

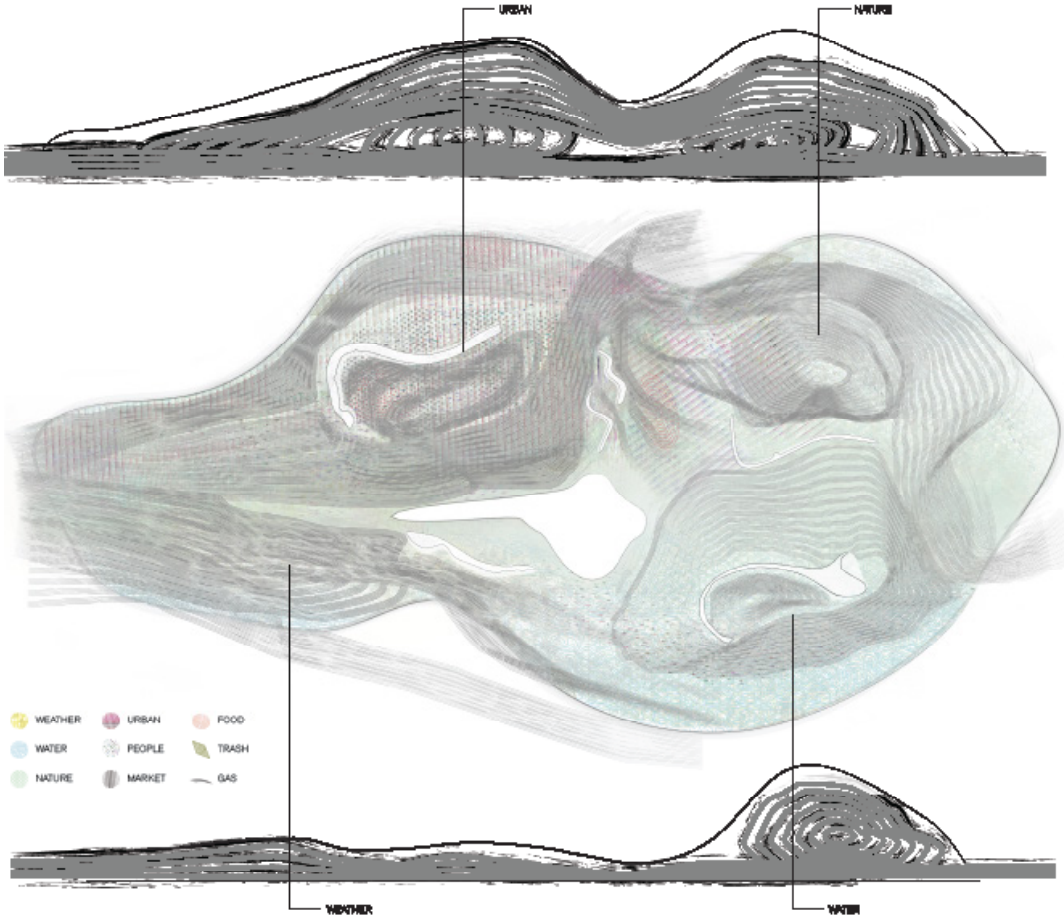
SYNESTHESIA

Synesthesia is a condition in which one's senses collide together, like seeing colors when hearing music or feeling objects when producing sounds. Scientific research shows that before age one this is a common phenomenon that we all experience.



AERODYNAMICS

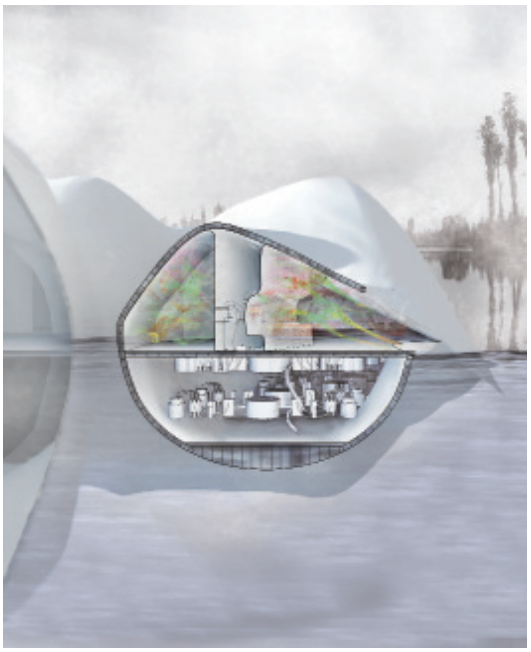
Smell can imbue surfaces with richness; it can define zones and boundaries; it can create powerful associations that give greater meaning to space and buildings. For the purpose of this thesis, air became the primary material. The project builds upon basic principles of aerodynamics, using airflow to create pockets of air that shape space, altering surface and texture to control airflow speed, and placing obstacles to disrupt airflow in order to divide space and inject new air.



AIRFLOW STUDY - FORM

AIRFLOW STUDY - TEXTURE

WEATHER SPACE



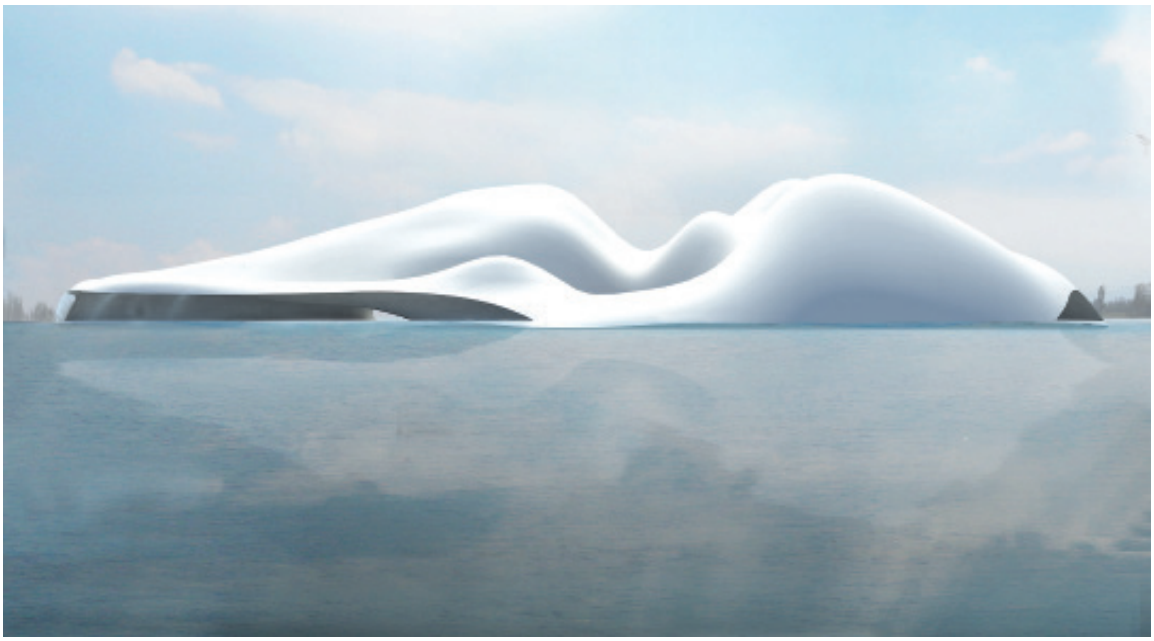
Invisible

Visible

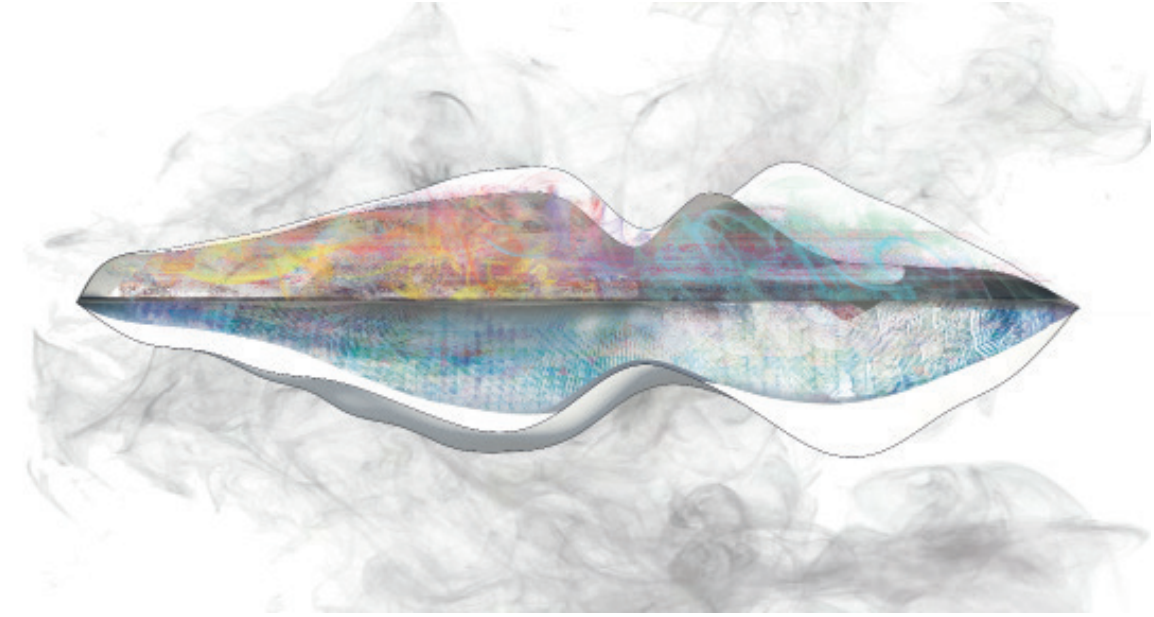
Invisible

Visible

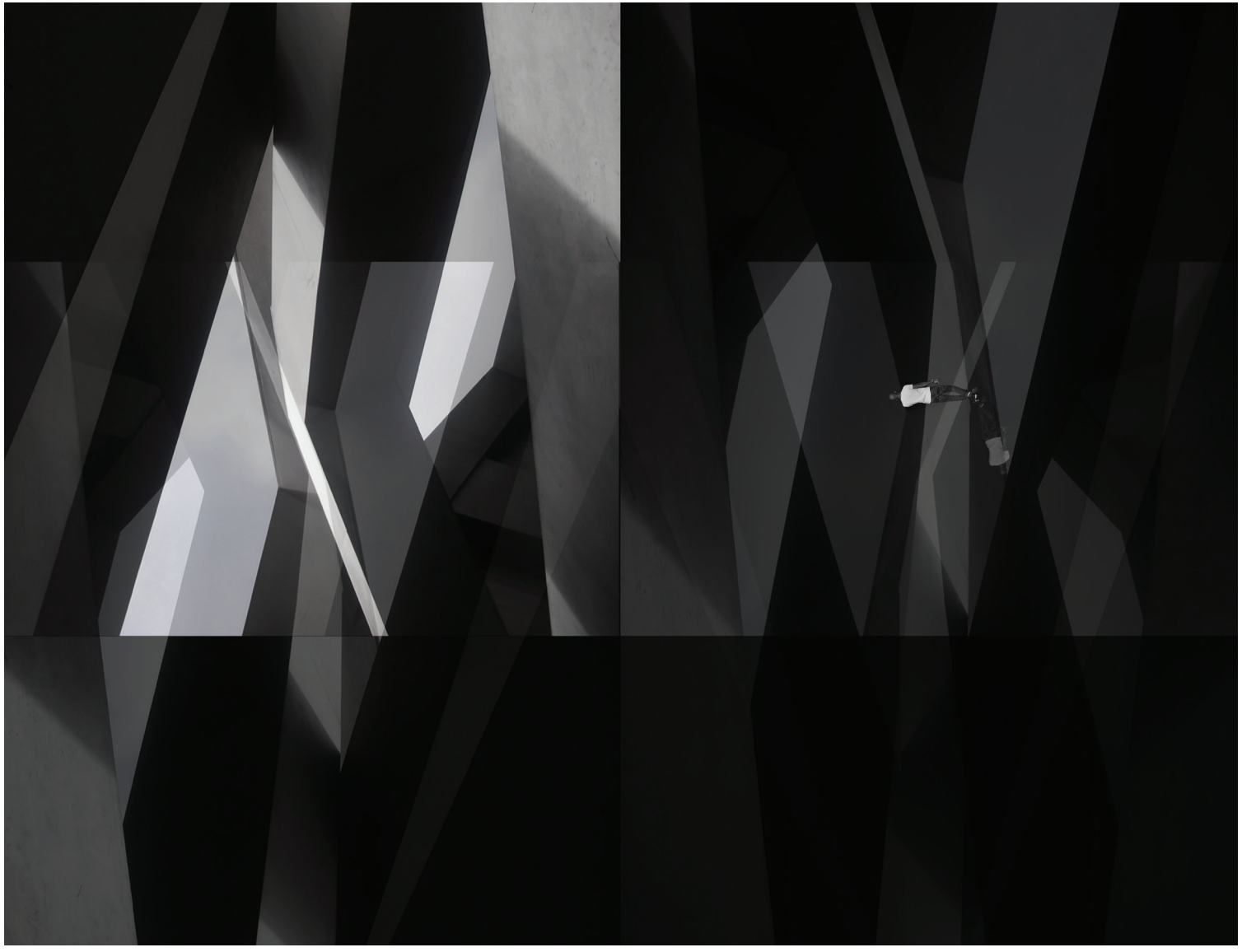
URBAN SPACE



Exterior



Interior



Borderline Memoria

Human Migration Center: Social Condenser, Witness and Propaganda

Ava Rahimi Farab | Advisor: Keith Mitnick

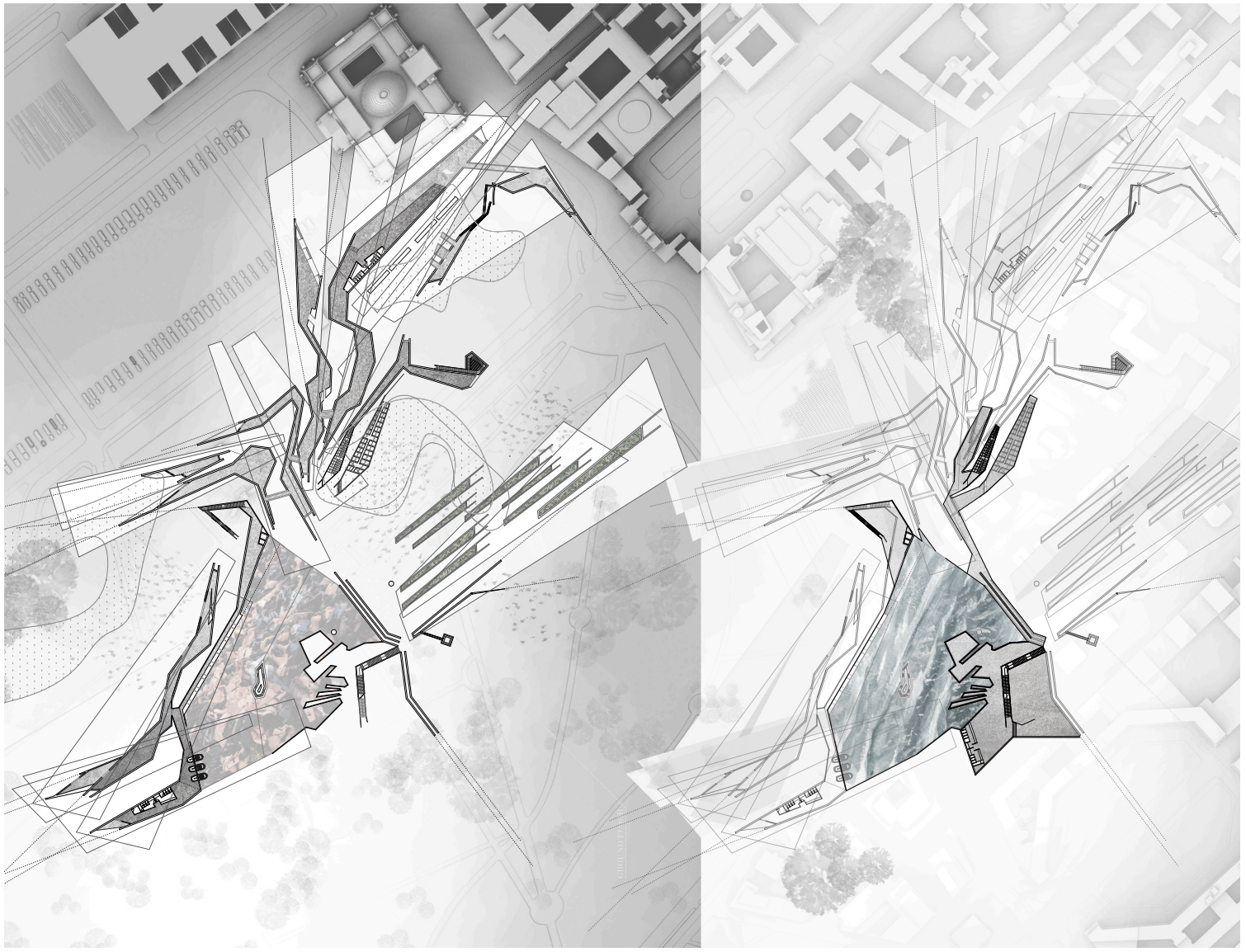
At the end of 2015, the number of people forcibly displaced had risen to a staggering 59.5 million. Worldwide displacement is at the highest level ever in recorded history. According to the United Nations Refugee Agency (UNHCR), every day last year, an average of 42,500 people became refugees, asylum seekers, or internally displaced persons (IDPs). More than 1 million refugees crossed into Europe in 2015, sparking a crisis as countries struggled to cope with the influx.

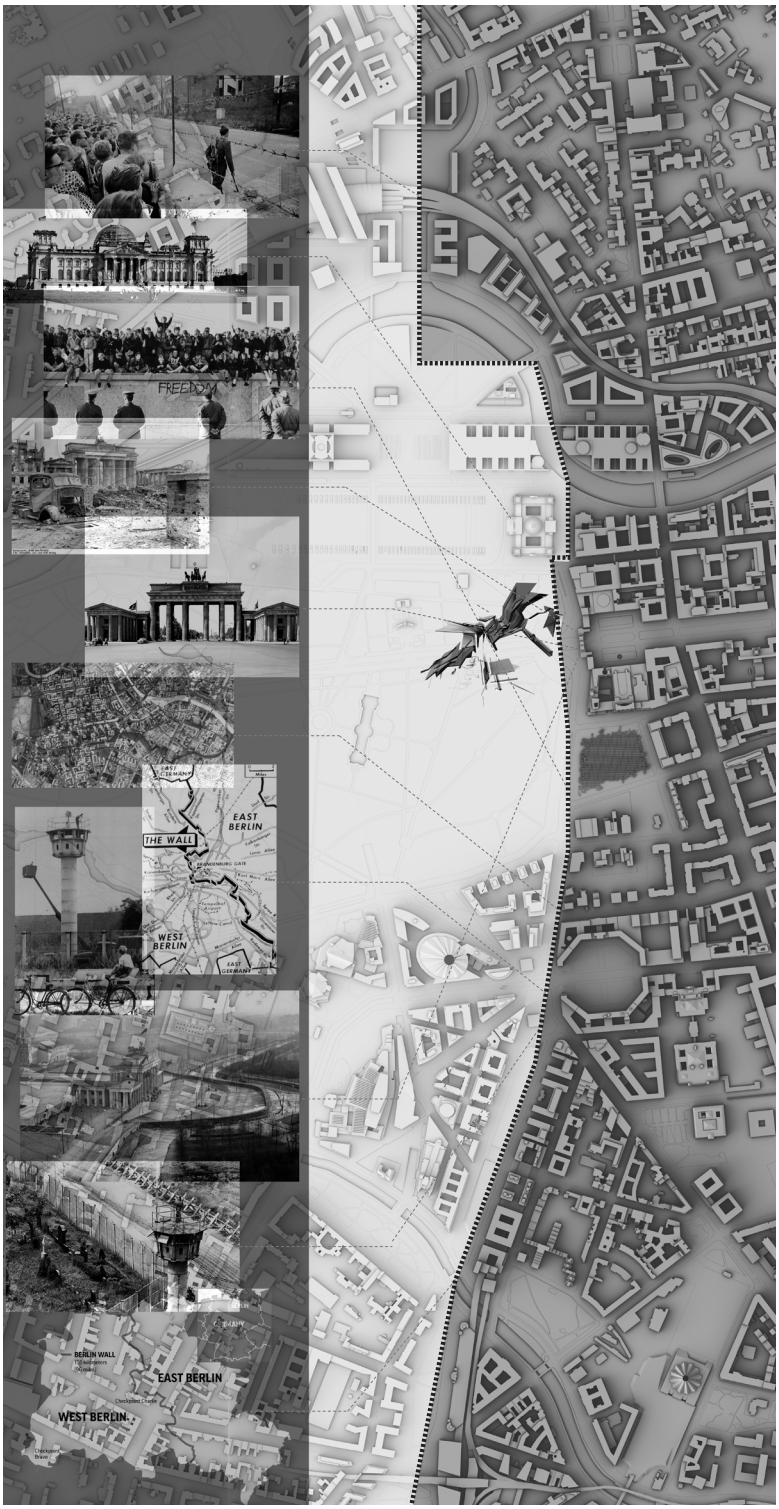
Borders, barriers, and walls are the primary ways in which a nation exercises sovereignty and control over national territory. In contemporary history, the sovereign state has preferred temporary security arrangements as a way to create permanent political facts on the ground. "Temporality" and "the state of emergency" are the very nature of the frontier, and the very condition that allows it to maintain a level of lawless brutality that would not and could not be otherwise tolerated.

Present day governance deploys techniques that operate in and upon the individual body as an apparatus of disciplinary security. The correlative development of particular disciplinary mechanisms simultaneously try to rule a multiplicity of humans. The extent that their multiplicity can and must be dissolved into individual bodies can be thus kept under surveillance—trained, used, eliminated, and unmade, forming relationships between state power and identity formation.

This project relies on the works of Michel Foucault, Hannah Arendt, Eyal Weizman and Ai Weiwei to employ architecture as a political instrument, as propaganda for and witness to the global refugee crisis. It implements architecture as a simulator to resist the mechanisms of power, which have led to extremism, xenophobia, and the segregation of society.

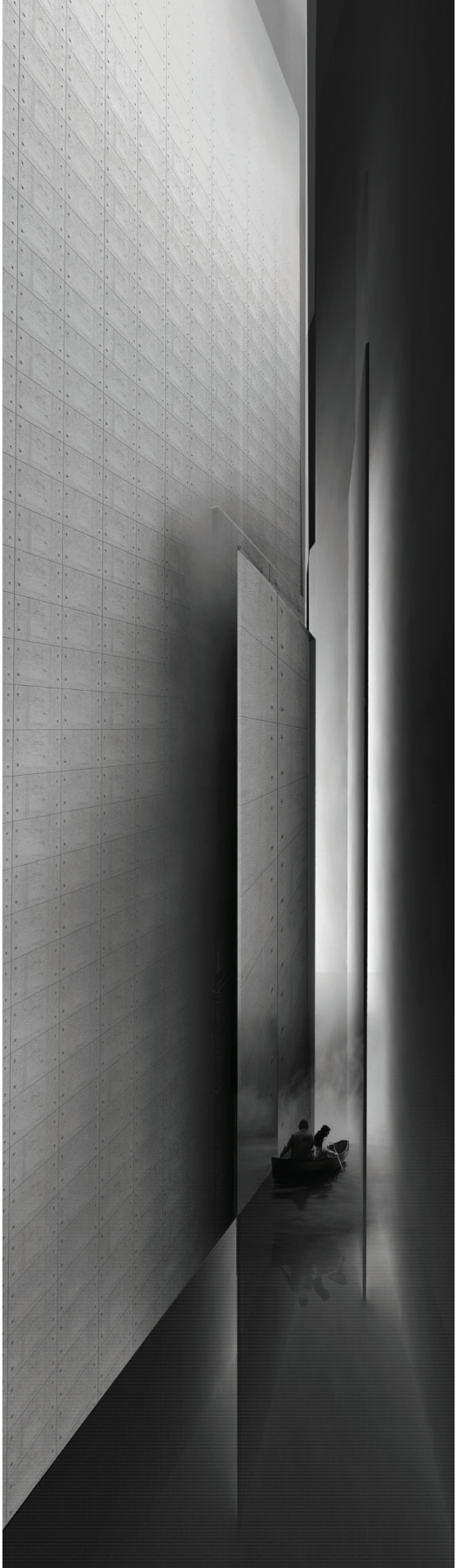
Using a Deleuzian terminology, the project insists that resistance must be produced, and the architecture must be used against (borderline) architecture, to formulate a new conversation around the issue, and to generate alternative sociopolitical dialogues and scenarios between people of belonging and people of displacement.





SITE

The site is in Berlin and builds upon the memory of the Berlin Wall as a border. The Brandenburg Gate has historically been the door to Berlin. The Berlin Wall, situated right outside of the Brandenburg, divided the city. The Gate was held by East Germany and the Reichstag by the West. Sited in the center of the city, the Berlin Wall is integrated into the project as the "Berlin Wall Gallery," and the marginalized refugee problem is made visible as a centralized focus.



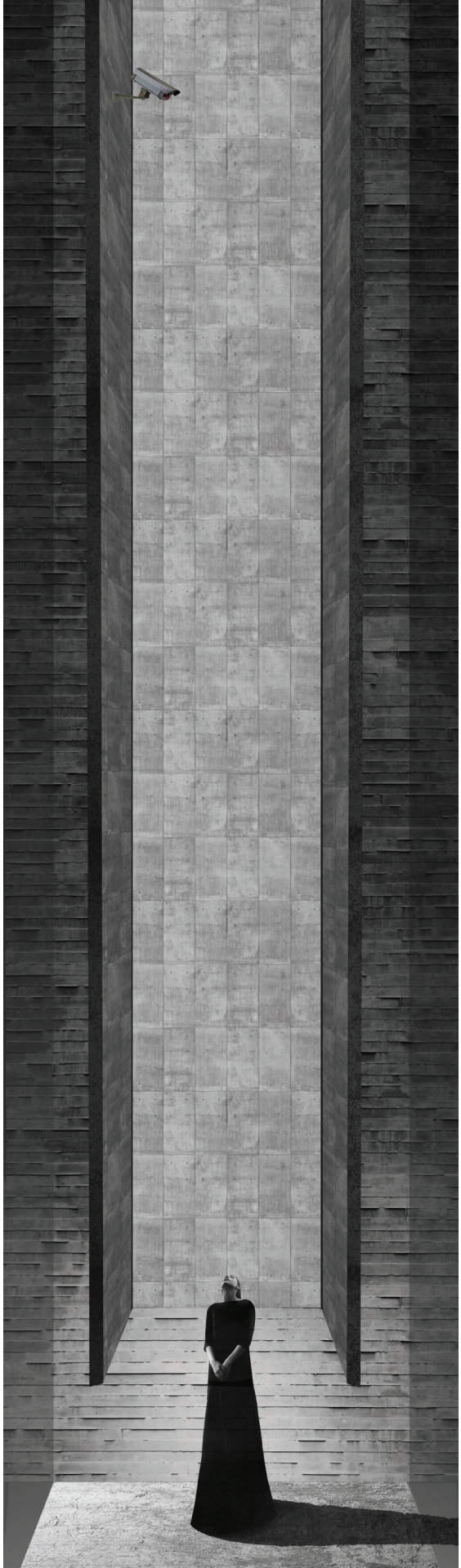
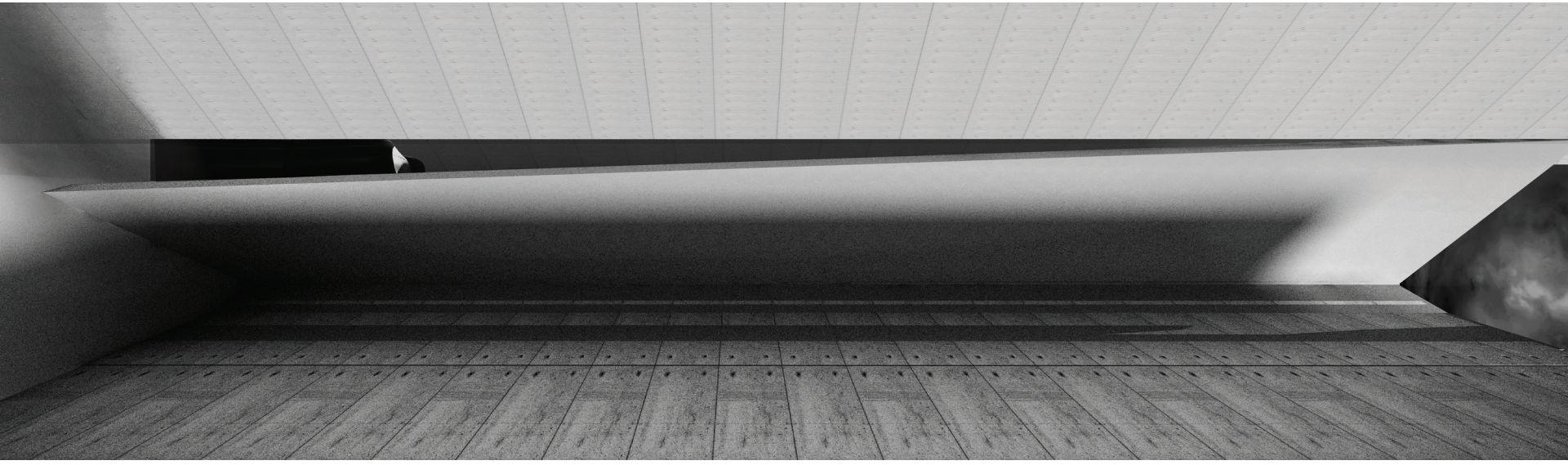
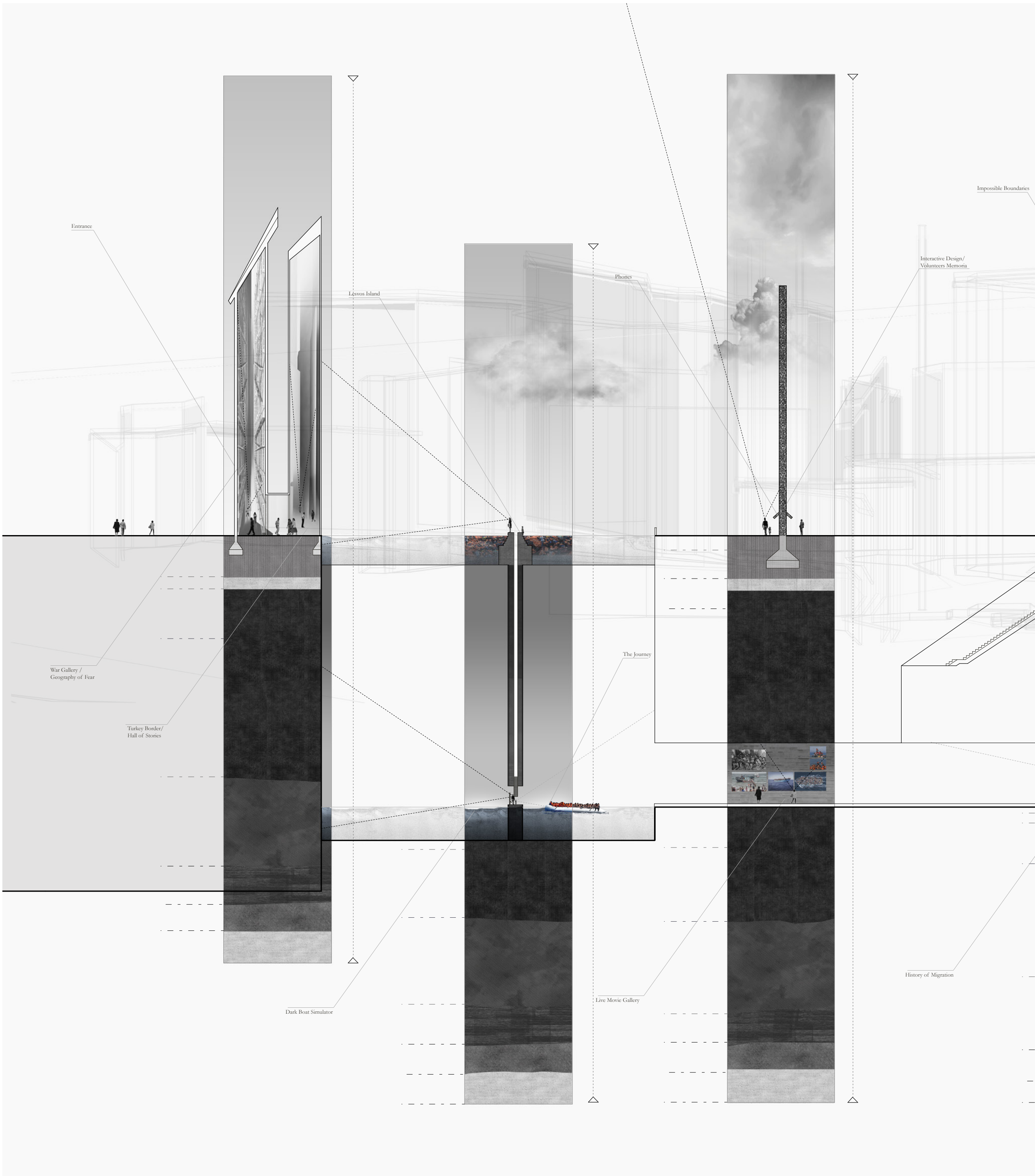
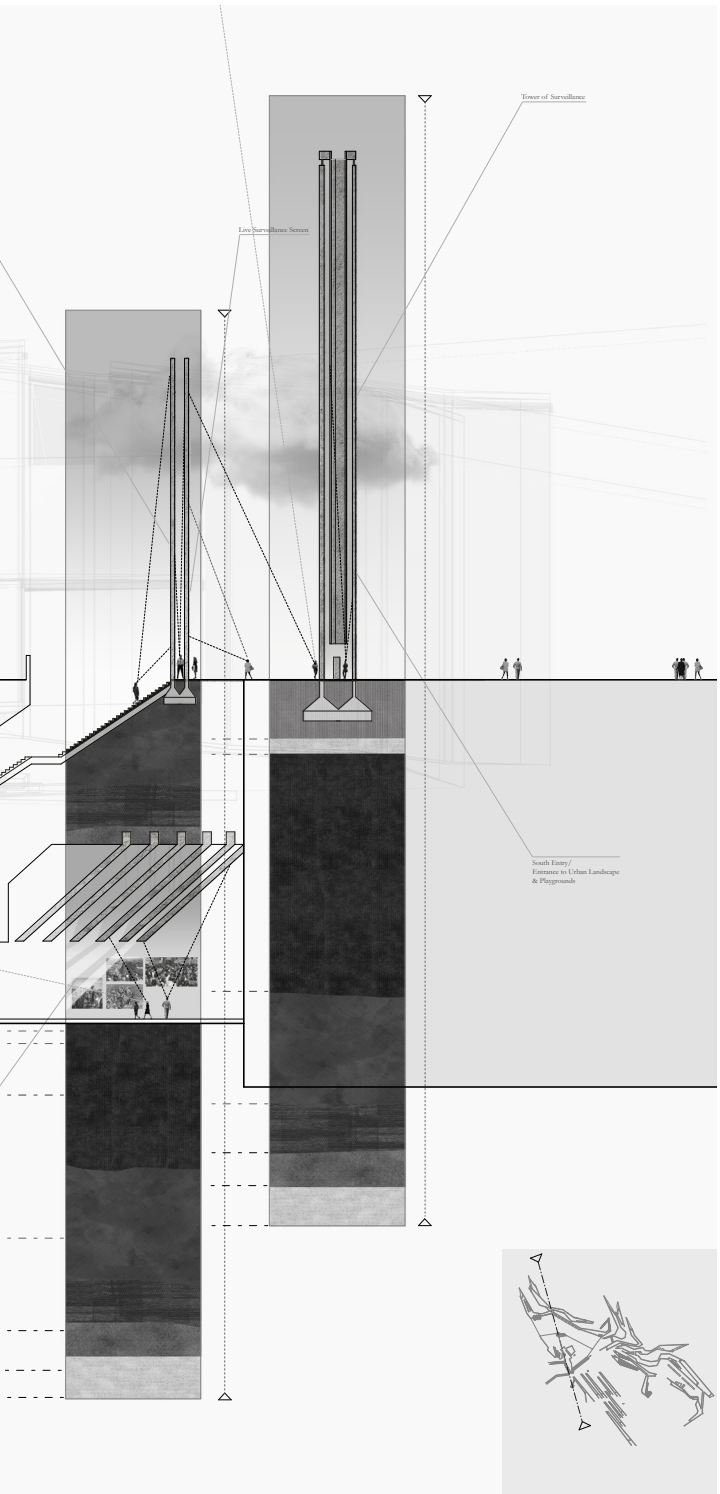


Figure credited to photographer, Noel Oswald.




Entrance
Lesvos Island
Phones
Impossible Boundaries
Interactive Design/
Volunteers Memoria
The Journey
War Gallery /
Geography of Fear
Turkey Border/
Hall of Stories
Dark Boat Simulator
Live Movie Gallery
History of Migration



SIMULATOR

The project produces architectural and physical realities of border and migration conditions, making an experimentarium to simulate the sensations and realities that happen on the borders, and en route to the destination. Visitors walk inside tall and narrow walls, with openings similar to the architectural relationships of the territorial borders. Here, there are openings into which people must crawl, replicating the conditions on the Hungary-Slovenia border.

The surveillance tower replicates the sensation of being under constant control; constantly recording the people around. When visitors walk into the tower, their image is captured and played outside for other visitors. People within the tower do not know the recording is playing outside and those watching are unaware of where the images came from.

Sea travel is the most fatal of all refugee routes. A replica of the Lesvos Island in Turkey is seen from the Turkey and Greece gallery surrounded by a sea of life jackets, and is only accessible through the underground level. Here, water symbolizes a fatal trespassing—but the real journey begins in dark waters. In order to successfully visit all the galleries, visitors need to cooperate and interact with each other to open certain passes and doors. Underground, visitors take a boat from Turkey to Greece. On the way they stop at Lesvos Island, climb up above the ground, and call to other visitors in the Greece gallery, asking them to open the staircase and the way inside.

WITNESS AND PROPAGANDA

In many of the galleries, there are screens that are showing what is happening at those borders in real time. This part of the program is a forensic witness to the crimes of war and different procedures that are taking place along these journeys.

SOCIAL CONDENSER

Social condensers were a form of architecture practiced in the former Soviet Union. The aim was to create spaces that bring people from different classes of society together. In this project, social condensers bring people of displacement and belonging closer together. The marginalization of ethnic and social minorities has fueled extremism, xenophobia, and segregation. Playgrounds, halls of stories, social gathering spaces, classrooms, and spaces outside for dining are used to bring together people of displacement and people of belonging. ■

DETAIL OF
SAN MARCO

Literally Autonomous

Michal Ojrzanowski | Advisors: McLain Clutter & Andrew Moddrell

A literally autonomous Venice is a claim for an architecture that is timely, present, and meaningful. Capable of reinterpretation, it carries a sense of collective memory through an urban object that realigns architecture with cultural production. Aesthetically oscillating between city and building, a literally autonomous Venice is both material reality and disciplinary construct.

Reasserting the role of architecture into La Serenissima's public realm might hinge on an arranged marriage of the literal to the autonomous: an allegiance framed as opposite within the art-historical discourse, but one that might reinfuse legibility—and therefore meaning—into the lifeless city, creating a city of image.

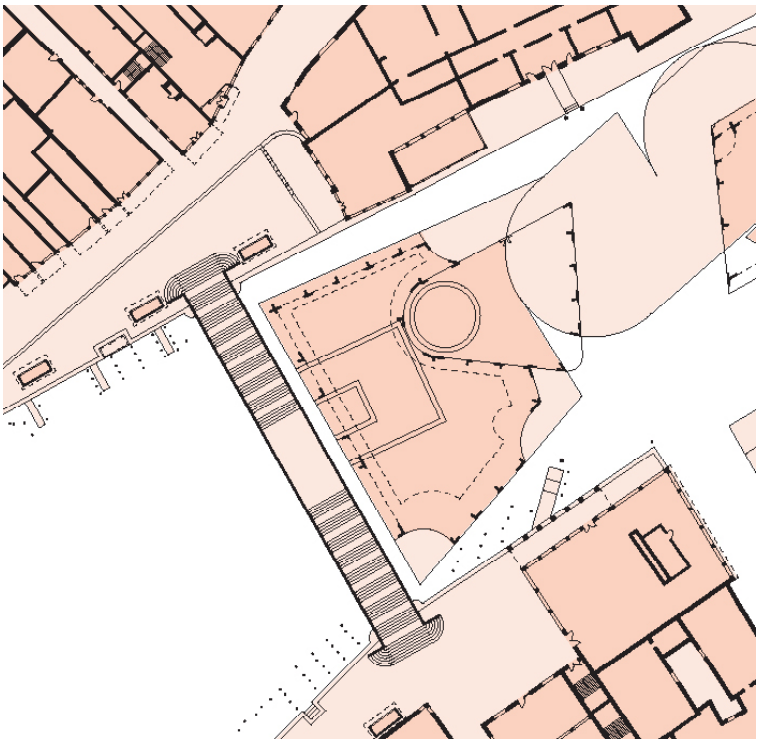
The proposed urban object, a barge floating along the Grand Canal, completes and introduces new formal compositions—spaces of contemporary collectivity—while deconstructing the city at large into an assembly of tangible parts: brick, stone, wood, plaster, and terrazzo.The object becomes a diagram reflecting both collective aspirations and secular value, begetting once more an active reading of form that separates the cultural and economic qualities that constitute the city.

Since its inception, the Venetian Republic was rooted in pragmatism and collectivity at its core. Until the early seventeenth century, the Law of Daulus—an edict of cultural uniformity—was evident in its urban tissue. For the sea-bound city state, this shared ethos of *mediocritas* sought parity in architectural expression, dress, and conduct.

These strictures are emblematic of pressures placed on newfound (utopian) societies and in this instance resulted in a clear literalist reading of the city, one composed of parts and pieces, things and symbols. Financed by patrician Andrea Loredan, the Ca' Vendramin Caleragi—with its Renaissance motifs, stone façade, and vertically articulated emphasis—broke out of this horizontally-oriented, Gothic mold. In so doing, the political and aesthetic bases of the formalist project of autonomy aligned as each found a state of exception from amidst their context. ■

PLAN 1:PONTE DEGLI SCALZI

The barge moves imperceptibly slowly, continuously gliding along the Grand Canal. As it moves, it creates new formal compositions along the way. At times, the barge creates unfamiliar focal points and axes as it aligns with known landmarks, extending existing piazzas and creating new ones from once disorganized scraps of space.



DIAGRAM, ISLAND TAXONOMY

As the newest addition to Venice's urban tissue, the barge has an ambivalent relationship to both urban and architectural scale.

PERSPECTIVE 1: PONTE DEGLI SCALZI

MAP OF CULTURAL INSTITUTIONS

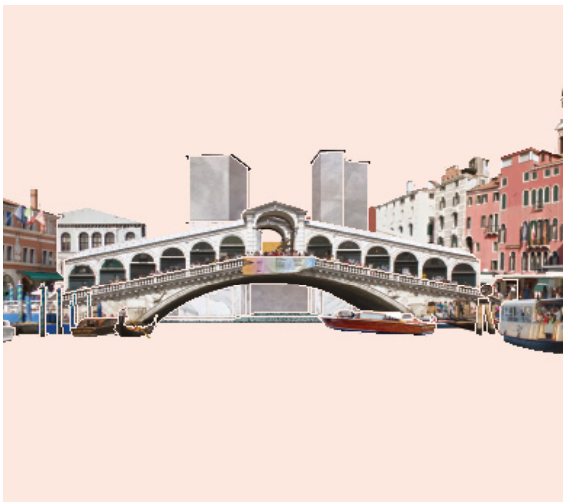
PHYSICAL MODEL

Hinges, notches, indentations, and offsets become self-referential analog cues for the internal logic of hinging, sliding, and abutting implied by the form. These articulations typical of objects of everyday use precondition reception of the space. We can intuitively tell which parts will fit with one another and the path they will take to get there. This active reading of form is carried through to the existing urban tissue as we anticipate the barge will interact with its surrounding in a similar manner. This analog relationship is a found condition already present in Venice at multiple scales.

PERSPECTIVE 2: SAN STAE

PERSPECTIVE 3: CA' PESARO

PERSPECTIVE 4: CAMPO DE LA PESCARIA



PERSPECTIVE 5: PONTE DI RIALTO

PLAN 2: SAN STAE

There is only one piazza in Venice: the grand Piazza San Marco. All other public spaces are *campos* and are always anchored by a church. Their English translation to simply 'fields' reveals the generic, non-hierarchical spirit of the city's urban realm. At San Stae, as the *campo* is contained by the church's analogous counterpart, this ubiquitous field condition extends through the floating urban object diffusing distinctions between interior and exterior.

PLAN 3: CA' PESARO INTL. GALLERY OF MODERN ART

Today, arts institutions once more play through a centuries-old diagram of power as they move into palazzi along the Grand Canal. Contemporary art becomes the only cultural product commensurate to the stature and value embedded in these formal objects. In-so-doing, they recalibrate architectural form from its social code. Palazzi frontages, once entry vestibules to private residences, become the public faces of newfound cultural institutions.

PLAN 4: CAMPO DE LA PESCARIA

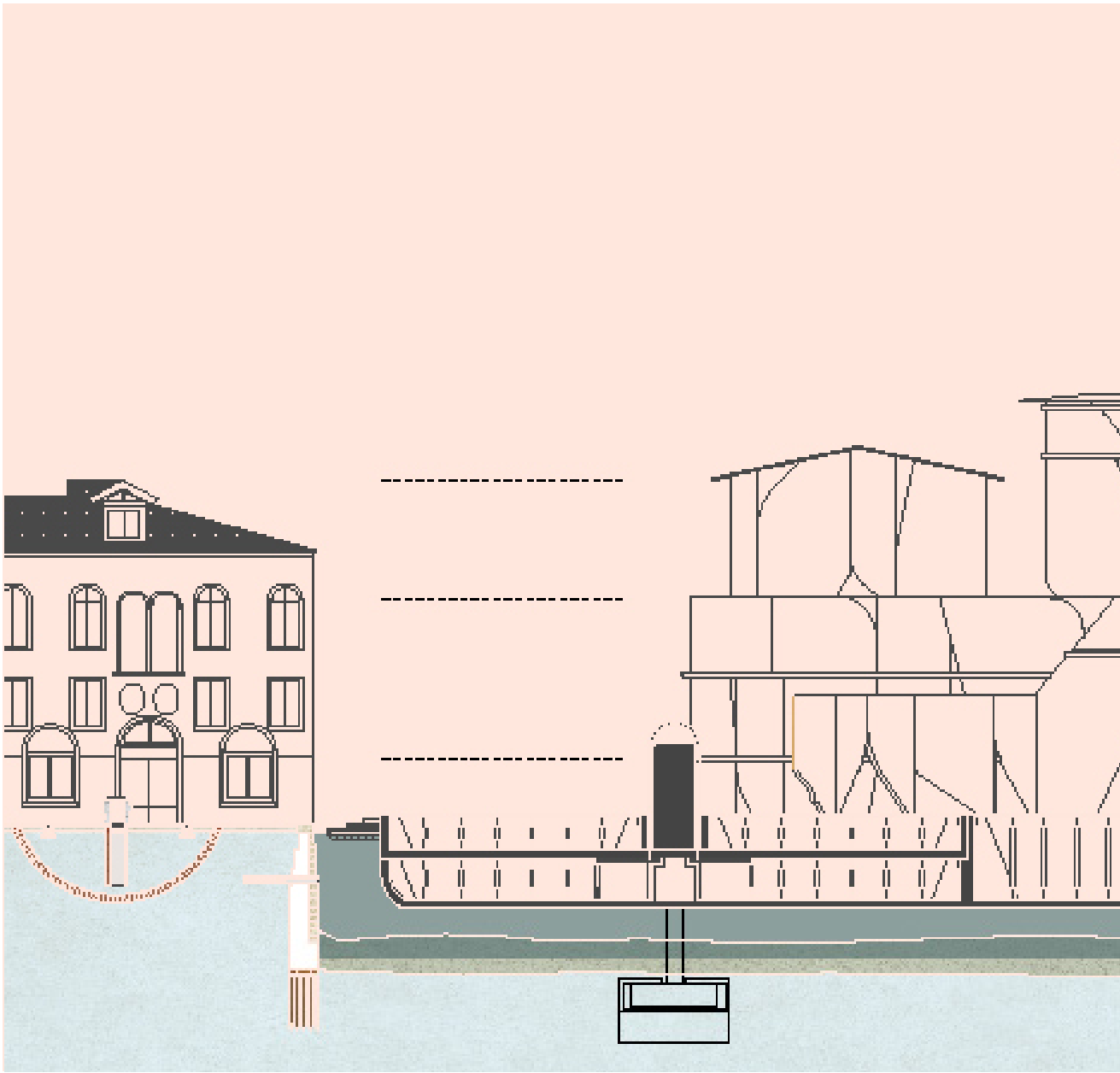
As it unites, the urban object works to diffuse the city. Experienced from the typical tight and confined vantage point, the barge flattens its surroundings into constituent parts. Venice's innumerable alleys end at new termini, and the Grand Canal itself is bifurcated into characteristic but not so grand *riello*.

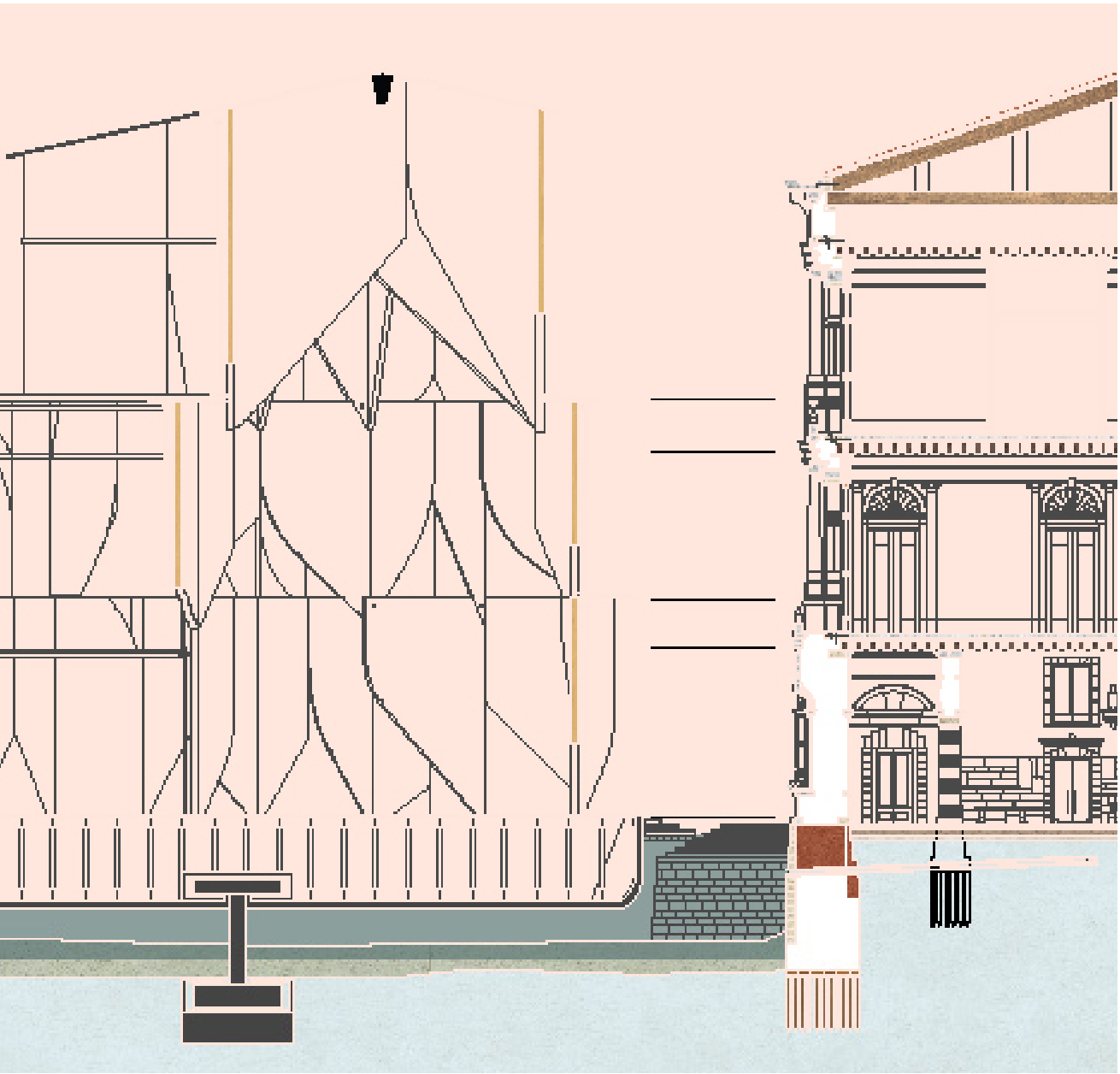
PLAN 5: PONTE DI RIALTO

The barge grafts the Riatlo as its frontispiece forms an exogenous whole. The bridge takes on an unexpected relationship to its context in scale and function. Once simply an object linking two banks, it becomes a portico to the forecourt of an entry sequence into the adjacent Fondaco dei Tedeschi on the east bank.

SECTION ACROSS GRANDE CANAL AT CA' PESARO

As the barge propagates sculptural form, it simultaneously resists a complete in the round reading by way of an imperfect tectonic relationship of cladding and structure. Gaps and overlaps abound, reminding us that the barge object is actually hollow. Through these gaps, we see the materials of which Venice is made deconstructed and rearranged, again underlining the fact that the existing building stock is composed not of solid, opaque wholes, but discrete bits and pieces assembled together into a radical instance of static equilibrium.





"...architecture shows continually that the very basis of its existence is in the unstable balance between a nucleus of permanent values and meanings, and their metamorphoses in historical time."
–Manfredo Tafuri

INSTALLATION

A half scale imposture and some guests: caught in the act...

ABSTRACT

The following work is curated in a specific sequence, with varying degrees of separation, starting from an 'original' source: the *Epic of Gilgamesh* tablet (the oldest documented narrative known to man). The work intends to utilize both text and documentation to walk through various trajectories of representational possibility. Fragmentation and misinterpretation is desired. Some images are found or appropriated, and some are fabricated and reproduced...again. Some text is illegible. Citations are erratic, and sometimes go against the rules. The work does not aim to achieve legibility, but instead strives to reconcile with unfounded knowledge.

Twenty-Five Karats

Authentic Fictions

Kallie Sternburgh | Advisor: Perry Kulper

Twenty-Five Karats[1] explores the agency of authorship, using narrative as a vehicle or medium for which to deliver content. As content (the material, subject, or substance) is constantly in flux—evolutionary, changing—the material generated over the duration of the thesis term (and beyond) takes on an indifferent attitude towards content itself, and instead, is more concerned with methods of storytelling, narrative, and agency (i.e. how something is told is more important that what is told).

Using various forms of representation, the structure of the work examines variability and methods of delivery (actions favored over artifacts; the roles of a proxy, or surrogate, over the actual material or goods) against different backdrops or mediums. Rather than inventing the end of some means, the duration of the work focuses on the means, curation, and the lack of invention. Architecture, at its best, is an act of translation. Nothing is original, but is rather, a reiteration of existing substance—re-organized.[2]

[1] Coined the name ***Twenty-Five Karats*** to signify its associated value as a material artifact: gold, a material that is universally exchanged. The unit "twenty-five" referencing the impossibility of its existence—as twenty-four karats signifies the authenticity of a material that assimilates "pure gold," through the exhaustive extraction and alchemy of a "less pure" substance.

[2] An analogous reference to the Neo-Assyrian tale, *Epic of Gilgamesh*, retold. See flood tablet, Library of Ashurbanipal, circa seventh century B.C.

TOP LEFT

Sears & Roebuck kit home, the "Newcastle," Model no. 3397, circa 1933–1940.

BOTTOM LEFT

The Rooftop Garden of the Charles de Beistegui Apartment (Le Corbusier, 1929–31).

ABOVE

Denise Scott Brown and Robert Venturi. Wedding Day. Source: Unknown.

Twenty-Five Karats is a collection of artifacts (both natural and artificial, fact and fiction, given material and fabricated constructs) that re-evaluates our relationship to historical content, archaic forms of documentation, and other appropriated methodologies of representation.

Twenty-Five Karats seeks to test and/or emblemize the very loss of knowledge (the message, data, form, or allegorical meaning) to which we are victims within architectural discourse. Using the constructs of a house (See Sears and Roebuck Archives[3]), *Twenty-Five Karats* becomes about varying forms of authorship, using representation as a rhetorical tool to hijack multiple narratives on which content is always contingent.[4]

By taking the position of a documentarian, the work of the thesis curates a series of lenses (both real and fictional): a reincarnation of content that begins at a source. Starting at the beginning of all narratives, the infamous *Epic of Gilgamesh*[5] is a story only understood through the re-assembly of knowledge—re-fabrication through its own fragments.

[3] "Sears Homes 1933-1940." Sears Archives. n.p., 21 Mar. 2012. Sears Brands, LLC. Web. 29 Mar. 2016. <http://www.searsarchives.com/homes/1933-1940.htm>.

[4] "Now how many of you liked Forrest Gump? This is story telling. I believe in multiplying stories, as opposed to believing that the one you're telling is the truth. Which is why I worry about your [Martin's] story about New Urbanism, even though I happen to agree with it: I hate New Urbanism too. But I believe that tricksterism is better than 'truth' telling."—Jeffrey Kipnis on the question of agency, with Reinhold Martin at the GSD, Harvard 2010

[5] The oldest narrative known to man and the earliest surviving work of documented literature —dating circa 2100 B.C.

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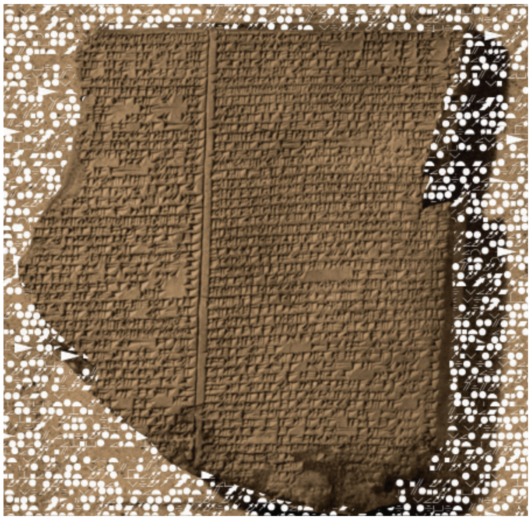
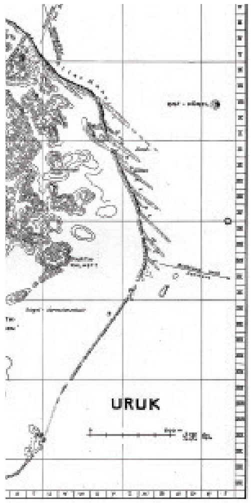
Working through the conventions of representational technique, the work evaluates various conditions of staging, rhetoric, and forms of translation to generate a series of objects, things, and/or constructs which perform as stand-ins, doppelgängers, and substitutes. The epic re-telling of the story has multiple, indeterminate endings.

The work generated out of *Twenty-Five Karats* seeks to question how we both implicate and are implicated by architectural discourse. Suspicious imagery and uncanny artifacts evoke a new act of vigilance in architectural exchange. Some of the work presented here is indeterminate or believed to be lost. Half-truths. Fabricated evidence. Appropriated history.

Twenty-Five Karats consists of both new constructs and archaic artifacts; authentic frameworks and counterfeit agents; imitating preservationists and credible reproductions. The true crime at hand may be hidden in plain sight. However, the objective of the work is not to reveal all to the observer, but to encourage a vigilance in the way we use and produce new forms of work.

Twenty-Five Karats is a collection of evidence, a curated space, with the appearance of normalized productivity. The work subverts its own content and challenges the notion of authorship found in representation. Architecture, as a productive act, can be seen as a process that both builds up contextual evidence and embeds new visions—the indeterminacy of this relationship is where the thesis resides. ■





TOP LEFT

A fraction of the entire *Epic of Gilgamesh* tale, re-collated.

TOP RIGHT

Neo-Assyrian clay tablet. Epic of Gilgamesh, Tablet 11, the story of the Flood. Known as the Flood Tablet, circa 1800 B.C. Currently located at the British Museum.

BOTTOM RIGHT

A map interpretation of the ancient city of Uruk. J. Jordan (1931), Memoirs of Prussian Academy of Sciences, Philosophical-Historical Class, No.4.

LEFT

The "Newcastle House," reincarnated.

TOP

to be continued...

BOTTOM

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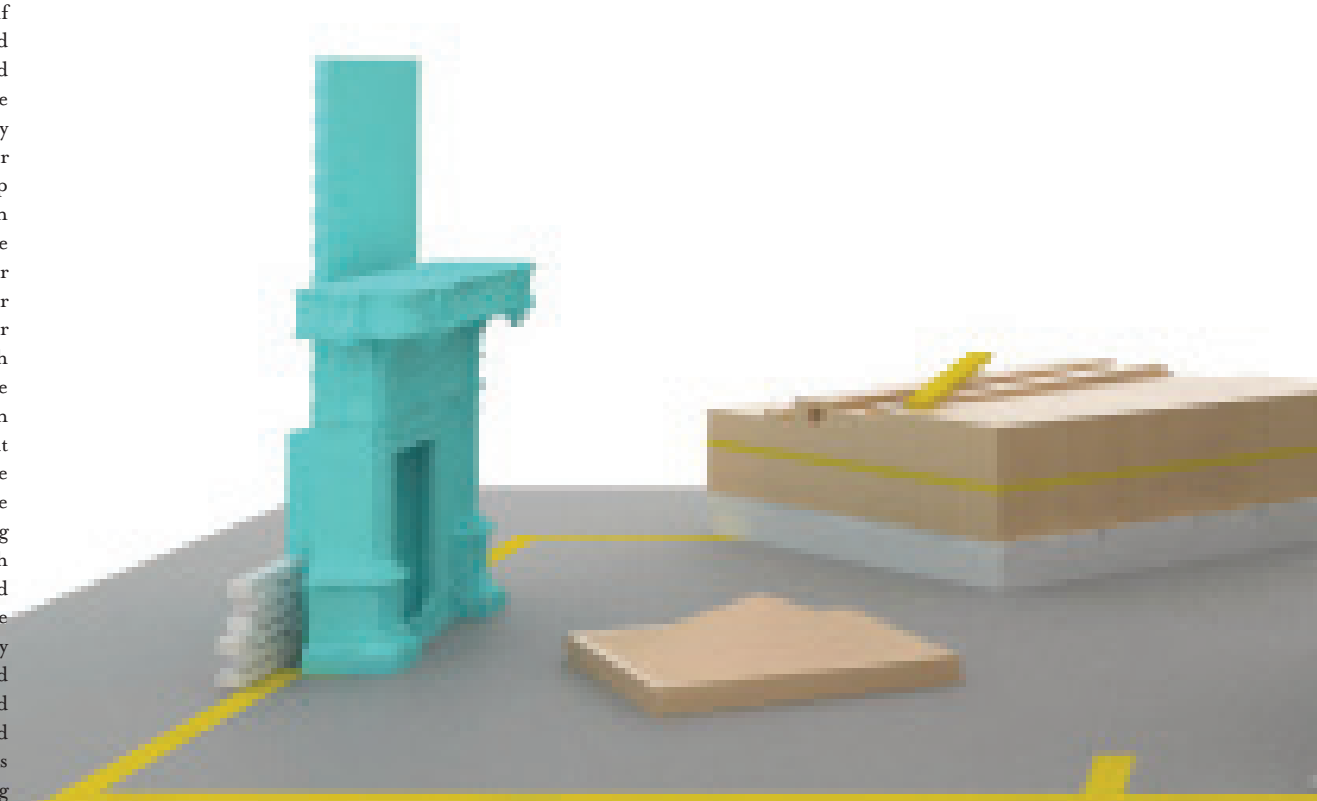
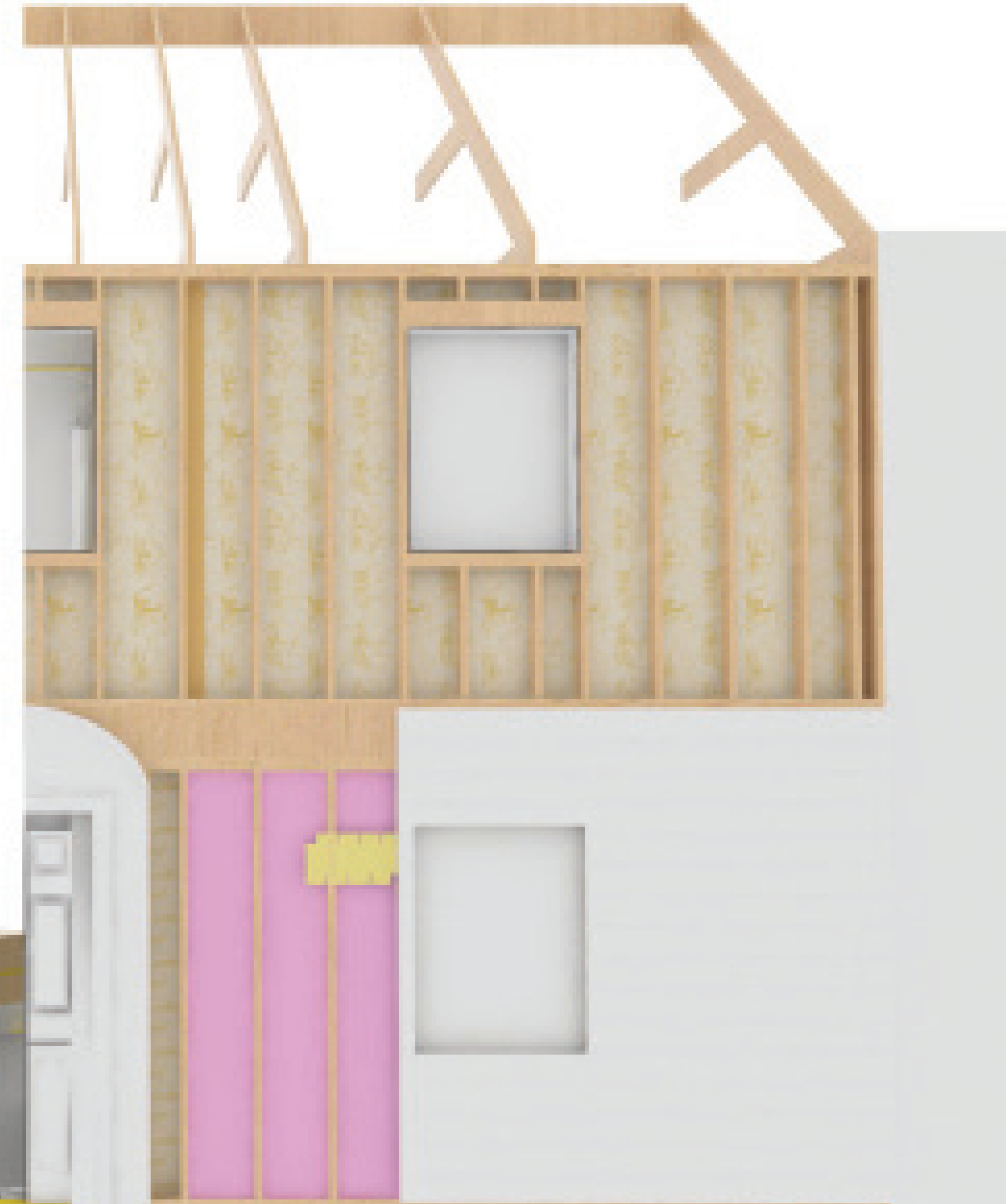




Ninety-Nine Percent Perspiration

NEIL M. DENARI

Neil Denari is principal of the Los Angeles-based firm NMDA, Neil M. Denari Architects Inc. which focuses its work on the manifold issues pertaining to architectural speculation. Mr. Denari has had a distinguished career as a teacher, and is currently a tenured Professor of Architecture and Interim Chair of the AUD at UCLA.

October 8, 2017
Dimensions sat down with Neil Denari for an insightful conversation. Neil was visiting Taubman College to lead Practice Sessions No. 3 and to lecture on what he has called: "The Same and the Different." *Dimensions* was able to talk with Neil about aesthetics, the digital, and practice as they relate to his own work and architectural culture at large.

GRAPHICS

Dimensions 30: Your work seems very graphic in its conception. Can you talk about the role graphics play in your practice?

Neil M. Denari: Graphic culture is something that, along with material culture and concrete culture, I have always understood as being inseparable from practice, even though they are very antagonistic. Of course, in today's world where you can consume whatever apparent material and concrete world you want (apart from the one that we live in) through film, photography, video, and everything else; then the reason why we work on things outside of that private connection is that the environment is becoming more and more of a backdrop and a substrate to life played out in terms of access and speed. You don't look at a building and get your news. In Greek culture, you almost did. Now it's an absurd sort of idea that you get your news through, "a representation of culture." We're continuing to make buildings that ask questions about the vivid or the identifiable, or, "What does it mean to be legible?" but using techniques that are associated with two-dimensional forms of media. I'd like to believe that what we're trying to do is not make a platitude like "make architecture relevant again" or "architecture has slipped in the cultural status." I don't think architecture is going away. I don't think it's going to die. I don't think it's less relevant. I just think in terms of our optical field, it's been repositioned. Even though we as architects go to our offices and we focus on buildings; if we're making a housing project, we're really building a substrate for somebody's life to be played out. The extent to which they make identity with the building as being, "That's my building," we don't really know how that plays out.

I like to think that we're trying to get architecture in between you and your phone. I like to think conceptually we're trying to inhabit that one meter of space to not distract you from life. Another thing I learned on the Internet is that the average person checks their phone 200 times a day. I believe that, and I'm not sure we're checking architecture 200 times a day.

It's a transformed world and so architecture should be something more than a floor plate and roof that allows you to check your phone 200 times a day out in the rain. The environment can still be more purposeful. That's a bit of a romantic idea about architecture, but we want to use techniques that allow you to read the buildings, whether you're trained or not. There is some consciousness about them that makes them feel like they're collaborating with the world of media, rather than a project which says, "Architecture is different than your phone. And I am going to do everything in my power to remind you and tell you that it's different." I believe that what we're trying to do with our work is carry out a contemporary discourse that makes architecture collaborate rather than resist.

We want the affective nature of architecture to feel as though it's working with media rather than stating, "We're an old heavy discourse in medium and we're persistent and we're not downloadable and we're kind of the guardian of the real." We do not use the graphic to give the impression of the ephemeral, because in terms of building architecture we are as committed to craft as a good Swiss architect. We want it to last a long time, we want the joints to be perfect. It's not a scaffolding or a stage set trying to produce effects. It is dense, and real, and with the same "firmitas."

D30: That makes a lot of sense in the context of collaborating with media culture rather than trying to outdo it, or replace it with an extremely thin architecture. We have a way in which we want it to be engaging.

ND: Yes, or moralizing and saying, "Here, it's made of bricks, it's real, and you should pay attention to that."

AESTHETICS

D30: Your practice seems like it has recently transitioned on an aesthetic level. You mentioned that you were the kind of architect who wanted everyone to believe something was beautiful, and that beauty had a particular set of aesthetic qualities. It seems like today you've opened up to more aesthetic possibilities. Is there a specific reason or moment where you decided to be more open and less particular?

ND: As someone invited to the school I represent a certain generation. I am now in my late fifties and that's different than Michael Meredith or Sam Jacob who are ostensibly a generation younger than me. You can't discount time and the evolution of the work. I have always wondered, over the course of being a professional: How do you generate ideas that are somehow authentic, but also keep moving and developing them in a way that's not strictly with the tide? How can you work on something new and not simply buy into a global generic? One of the ways to do that was to question the outcome of, "It must have certain kinds of attributes." I didn't build for a while after school. I made drawings and installations, and I wasn't interested so much in doing a bathroom renovation to get started. I was, "Let's keep working until somebody gives us something more substantial." By the time you get into the contingencies of practice, you can't force your completely pre-determined set of ideas. Some of the answer is the contingencies of practice that you wouldn't otherwise have if you were working within your own editorial world of which I was for a number of years: entering competitions, rejecting the program if I didn't like it, etc. Now it's about applying the principles to the context.

You can't practice if you operate in a mode of disappointment and compromise. I am an idealist. I look at every possibility as being something that will find a level of discomfort. I hate the idea of total comfort. Visual and cognitive comfort is not what we're seeking. As an architect, if I don't always feel some level of discomfort, then I can't work. This is a way of talking about discomfort that hasn't been strictly converted into an idea. We don't put out projects that we don't feel like, in and of themselves, have a particular type of quality; the bandwidth of what that is now is very elastic.

And quite frankly, it also allows us to do more work and embrace more sorts of projects. So for instance on towers, to get a slenderness ratio on a tower that works with the core and a floor plate, you have to go up to 300 meters to get it right. We do 100-meter towers; 100-meter towers are bulky. "Well, how can we get it to be thinner?" "Well, you can't. This is the animal." I love that. It's freeing and it allows us to take on a lot of work if you imagined it in some ideal world. So I would say it's driven mostly by the contingencies of practice as they force one to change. And I'm all about changing, but doing it in an authentic way. And I appreciate the fact that you say, "Things have transitioned," because that's the one thing that's important. I wouldn't want anybody to say, "You've just been doing the same thing for 25 years," yet I'd like for people to say, "Well, this is still your work, even though it's morphed."

CURATION

D30: In your lecture, you pointed out a transition from production to curation via the emergence of the web. How does a hyper curatorial culture play with how architecture is read as an individual project and as a discipline at large?

ND: In a world of access, dramatic access, the world is a playground. How do I decide what to spend my time on? What will I look at? Before the web you had to claw and scratch and find something in your subculture. When you got there, you knew that's where you were supposed to go and it was a real mission. Take music for instance. You went to the underground record store to get the bootleg and said "That's the one I want." And the bootleg '45 was always there. But it's a different form of access now where you're always one click away from whatever you want, or two clicks. How do you determine how you curate your world even though we as architects, we are charged with producing stuff in the world? We're producers of culture, but simultaneously we're just like everybody else and we collect and consume culture. Sometimes I think that the urge to collect is because you don't make. If you make, you spend most of your time putting stuff in the world and you're not as obsessed with collecting back. It's not a truth or a truism. It's a theory about energy. Today we're all at least collectors of stuff, of images, and bookmarks, even though we make. The issue is whether you curate or don't curate. For instance, with students I would say, "So you download a lot of stuff. Right? Do you feel like you're curating anything?" And they go, "What do you mean, 'curating anything'?" "Well, think of what a curator does in a museum. They create a show, they think about the space." "No, I don't. I just download stuff." I am not sure at a general level how we're getting more curatorial as opposed to more dilettantism. I can download a few things and then become a dilettante because I have access, right? But close reading, and organization, and archiving, and being able

"Let's keep working until somebody gives us something more substantial."

to situate and edit, this now becomes another problem—or let's say another discipline to teach. You're curatorial about your design work. It's going to be exactly the way you want.

So I actually think that we need to teach: What does it mean to be curatorial outside of the world that we're making? Because the curatorial world goes back directly into what it is that we make. The web is the ultimate number one resource right now. It's quick, fast, so what to do with it? Whether it's popular culture or our particular discipline, the age of access raises the saying, "But we still love the different and the different can only come about if you're reading closely and are very discriminating, and if it only takes a little bit to switch something." So that's a big piece of advice for you as students: When you're trying to do your thesis and you've got to abide by the idea of a thesis, offering some small, little trope for us and not just polishing the stone, then figuring out how to curate your interests and frame them is a new technique that everybody needs to learn.

THE FUTURE

D30: Do you have any prediction about what the next generation of architects might be at the dawn of?

ND: (Pauses). Well, let's see…

D30: Can you tell us the future?

ND: I do have some ideas based on what I'm seeing in terms of not the medium of architecture, but how it will be practiced and produced, and how architectural education may change or be rethought. It's all based on contemporary contexts. Taking a step back into the web and the digital, and our relationship to those tools, if you said, "I'd like to work on a museum" and you work on a museum, and it gets built, and so forth, and that museum has 1 million visitors per year versus an app that's downloaded 40 million times, you might ask yourself, "You know what? I'm of a generation that would like to help the world, I would like to help it, or make it better, or change it." And the digital affects people more frequently and more often than let's say a specific building. It's almost a fact. This raises a question of whether or not you would choose the medium of architecture to deal with the issue of affecting society. If you thought about it in a different way, which is like, "I would like to go build a community center in a village in Haiti and touch the lives of 2,000 people who I know can come together in this building." The differences on ethical, and emotional, and cultural level. But you're thinking, "Well, I'd like for what I do to have relevance." And the question is: At what scale and what audience? When U2 started their band, they said, "We would like to be the biggest band in the world." And by God, they made it. And Sonic Youth, my favorite band, said, "We just want Neil and ten other people to listen to us because that's all we're thinking about. And we just want to affect those lives."

The practice of architecture as I do it could become extinct in the future because it will continue to be too hard to compete with big offices. The auteur model could go by the wayside and what you would get is bigger offices which guarantee security. You will get your building and it will work. I don't know if it's true but if you guys looked at that and said, "I'm not sure that's what I want to emulate because I see the challenges in accepting the eighty-five percent that doesn't get built and fighting tooth and nail because we don't want to draw Best Buys. Somebody else does that, and that's fine. I just don't want to draw Best Buys."

The question is: What are you on the dawn of? I would say you're on the dawn of having to ask: To what extent do you want to affect humanity with the skills and interests that you have, at what scale, and in what means?

And the other thing is—and this may be part of an outcome of that—if you want to shift the way in which you and your skills and your interests can play out, then the idea would be to find the methods to be able to do that in a way that doesn't incur the same level of risk, which would be about, let's say, the development of the exhibition as a project where temporality is in your favor, and budget is in your favor, and yet you could still maybe find a constituency for communicating ideas that may only reach one audience. They may leak out into a bigger public.

That's something that I see that's very strong and continuing for younger architects; even though I did them in my thirties. I actually think that to a certain extent there is a renewed idea that this level and type of work is related more to the speed of the web and avoids the lag and the anticipation and finding ways to collaborate with contemporary culture. So I sense you're on the dawn of finding actually ways for architecture to be more engaging and collaborating, which unlike my project, is using tools and techniques but applying it to traditional building. I believe that you guys will be finding other more clever ways to work with media and systems to be able to advance ideas, find happiness, and still feel like you're affecting something. That's what I think. I think it's great, too.

PRACTICE

D30: In talking about the project in Japan, you said, "Well, you just build stuff and then people want you to build more stuff." Where might architects have to find new ways of working when they start their own practice?

ND: Starting practice at one level for you will be more varied and different than what I did. All I did was graduate and then wake up the next day and imagine I was still in school and yes, I had a job and but I just did my drawings and kept making projects and so forth because working in the office wasn't supplying that, and so it was just, "What's the next idea you can think of?" When you're in your twenties, you're not weighted with certain kinds of responsibility and that was a real free fall for me. Not in a bad way, but in an untethered world where I was able to say, "I am interested in ideas."

I didn't really know how to convert my ideas into a medium of exchange until some time down the road. And it was quite frankly just building up a reputation as somebody who was sort of working and tireless and had some small cultural capital to get to the point where somebody would say, "I guess I trust you to do this because I feel like your ideas are good." You could be much more business oriented and entrepreneurial and find a product and say, "This is what I do" and be a young person and sell it. And I think that that's useful today because I came out of more of the old fashioned, "Just keep working on your ideas" meritocracy and so forth. You build something and then you have evidence. And then it's a question of somebody would say, "Could you give me one exactly like that?" That's of course taking the different and then turning it into the same because you did it. And fortunately our clients always want something great and unique, but they don't ever go, "Could you just do that, and then that, and then we'll be fine?" They always feel like it's an open-ended sort of thing.

D30: It was brought up that you have been known to make thousands and thousands of section drawings. How does this notion of practice as an almost obsessive repetition influence your practice as an architect?

ND: I think that the simple answer is: I have always believed that—and it's classic—I have always believed that it's ninety-nine percent perspiration equation or the 10,000 hour outliers model. The Beatles played in the cavern in Liverpool for six hours a day for three years and that's how they became The Beatles. Because they just worked at it. So it's simply just saying that if you have a personality that's got the tolerance to work at something as a discipline—I would even call it a craft—then you have a pretty high possibility of getting good at it. If you go to Juilliard and you study violin and you play the repertoire and you know your job is the best and ultimate job that you could possibly get would be to play in the New York Symphony first violin and you would play the repertoire of the masters. In other words, you would be the ultimate craftsperson with incredible skills but you would never write a piece of music. So you can perfect a skill like that and have an incredible position in the world. The issue is how you use repetition to develop new ideas versus hone skills that can only be condemned to pure craft. So that's the dividing line between working and sweating. But of course it's working and sweating on ideas that you can feel like will move the conversation. ■

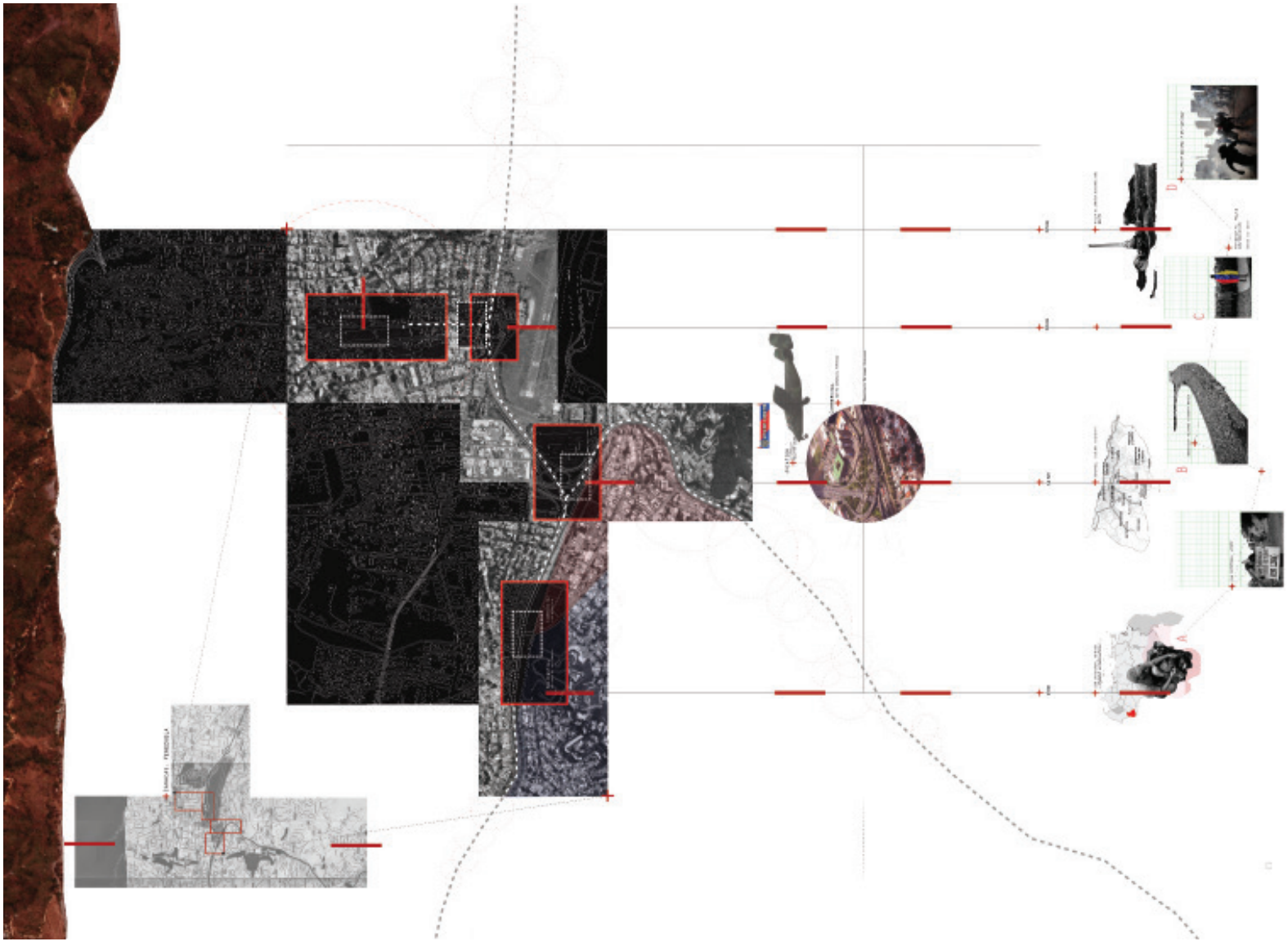
"I have always believed that it's ninety-nine percent perspiration equation or the 10,000 hour outliers model. The Beatles played in the Cavern Club in Liverpool for six hours a day for three years and that's how they became The Beatles. Because they just worked at it."

The design and production of *Dimensions* has occurred regularly for thirty years and as such, interruption has not been part of its agenda, nor is it ours. However, a moment stuck within or between seemed an appropriate place for pause. A pause rather than an interruption; reflection rather than distraction. As editors, we have provided a generous margin as space to unpack, critique, praise, comment, and unfurl the work. Fill them up, or perhaps they are best left to lie empty?

This volume is already a reference to work that has been passed over by time, and its contributors have since followed many different trajectories. *Dimensions* is a record, but unlike many records in the digital age, it is not constantly refreshed—it is always a year behind and appears well after its content has been relegated to memory or evolved past its moment of presentation. While this statement may be obvious and part of any publication, we have stumbled—or have been abruptly thrust into a world where the differences between the past, present, and future are less clear. At Taubman College, it has been a period of sustained transition. As the journal heads to press, the search for a new dean continues and the building addition nears completion. All the while, the people constructing the school's culture continue to flow through its various programs, redefining excellence by their own means, and their own work.

Dimensions 30 brings into focus the work of recent graduates, emerging practitioners, and invited seasoned guests that seems particularly relevant to what have been, are now, or are soon to be important conversations within the discipline of architecture. *Dimensions* is—by its design—not all encompassing or comprehensive. We hope this volume critically frames the possibility that we may speculate, propose, act on, resist, and return to certain topics again or at another time. In an age of multi-authored "facts", and social echo chambers that reinforce already held beliefs; moments of reflection are ever more important. We are never exactly sure who we are addressing, or in what moment they have arrived at this page. So, whether we are meeting for the first time, have recently said goodbye, or have been together all along we want to welcome you to this edition of *Dimensions*.

Stephanie Bunt
Hannah Cane
Scott Deisher
Karl Heckman
Katie Huang
Samantha Okolita
Lucas Rigney
Sophie Ruf



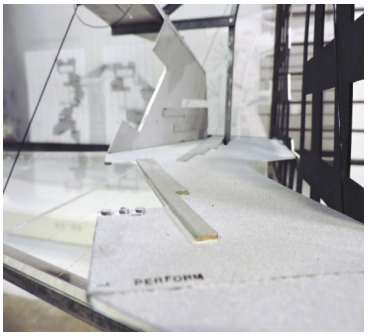
Disobedient Architecture

Staging the Political Façade of Protest

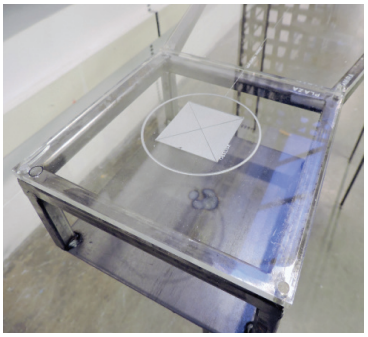
Diego Garcia Blanco | Studio Critic: Dawn Gilpin

Architecture has always been as intrinsically political as it is spatial. As marches and occupations take place in cities during activist movements, the urban fabric and the people who inhabit it play a crucial role in shaping conceived, perceived, and lived spaces as both physical and psychological constructs that enable collective action and living. This thesis explores the spatial and political potentials of a parasitic building envelope as an opportunity to radically re-imagine protest dynamics in an age of advanced democracy. The building envelope has thickness as well as an immediate connection to the intimate spaces that constitute the interior of the building. Thus, the building envelope is able to behave both overtly and covertly, which creates a refuge in which protesters are able to perform publicly. This provides protected spaces for activities that occur outside of the public perception.

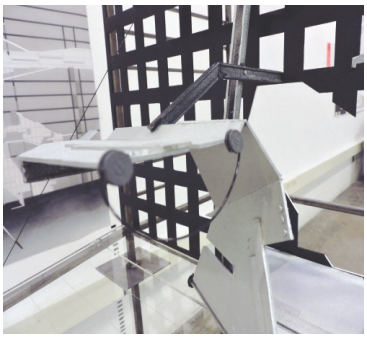
The building envelope has both a thickness and an immediate connection to intimate interior spaces. The thickness of the building envelope performs passively and aggressively, providing a refuge for protesters that transcends physical shelter alone and provides a platform for protest, surveillance, reorganization, resting, and living. Ultimately, the building envelope is a stage, a mediator, a connector, a threshold, a face, a symbol, and an inhabitable vertical spatial construct that acts both as protest and for protest. ■



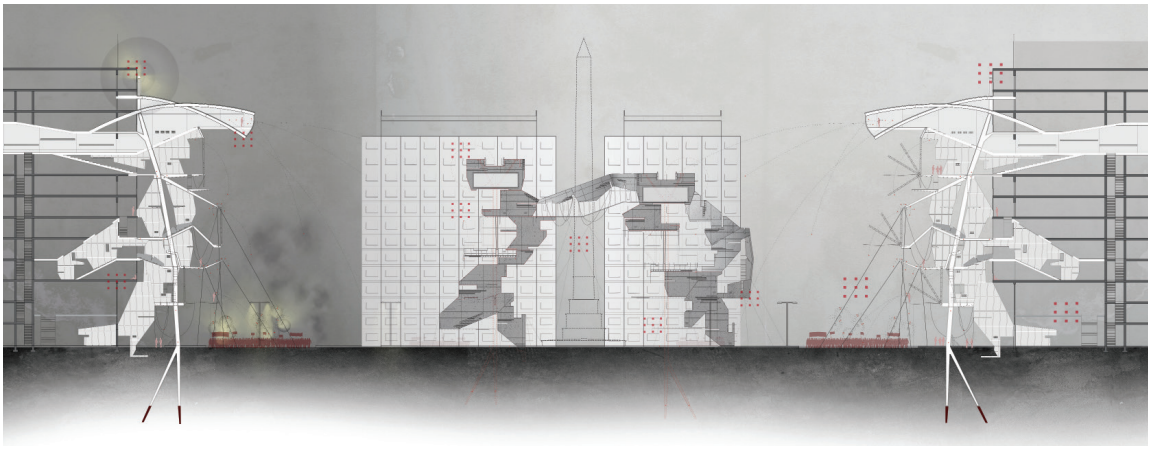
1ST LEVEL (PERFORMANCE)



GROUND LEVEL (OBSOLETE PROTEST)



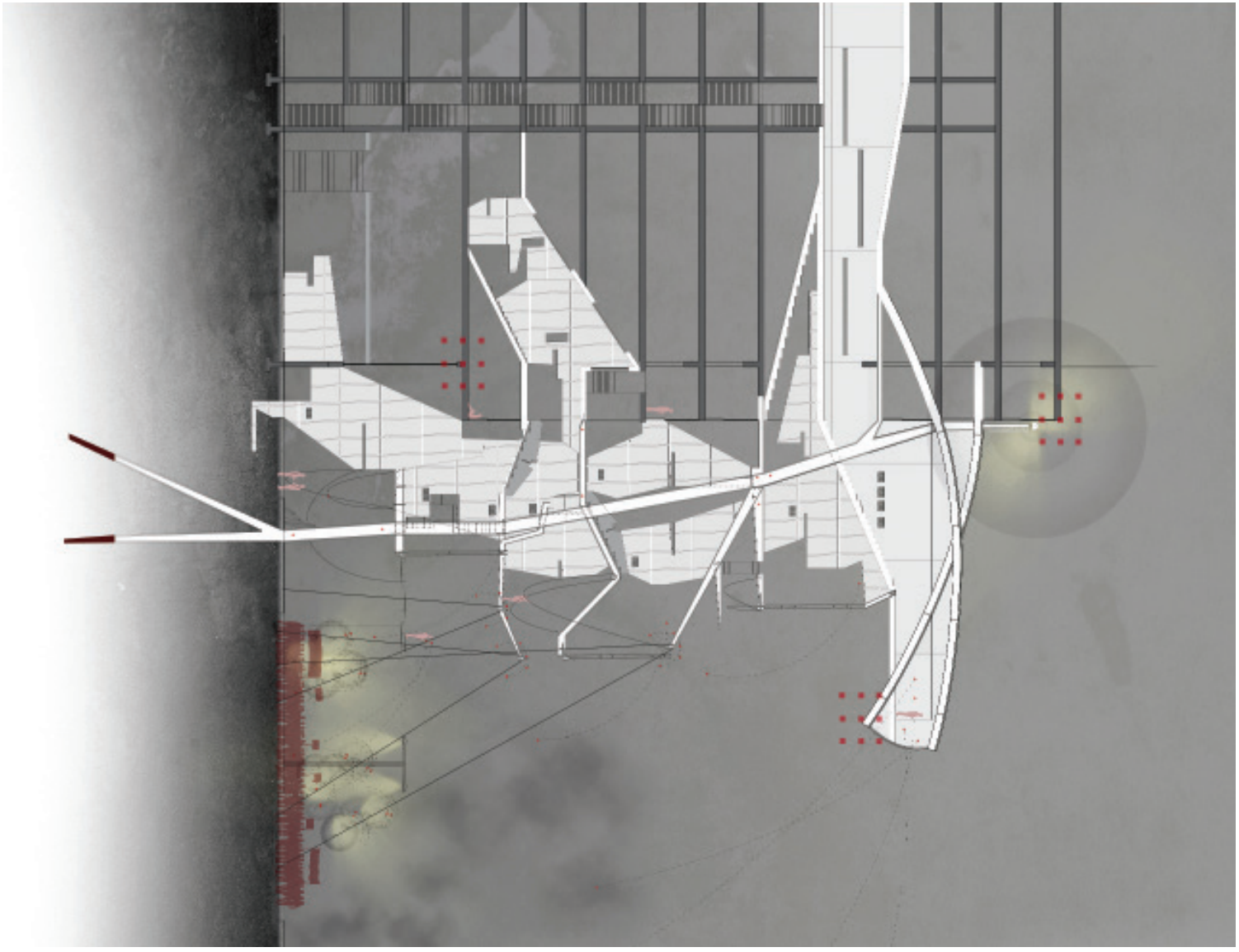
2ND OR 3RD LEVEL (SURVEILLANCE)

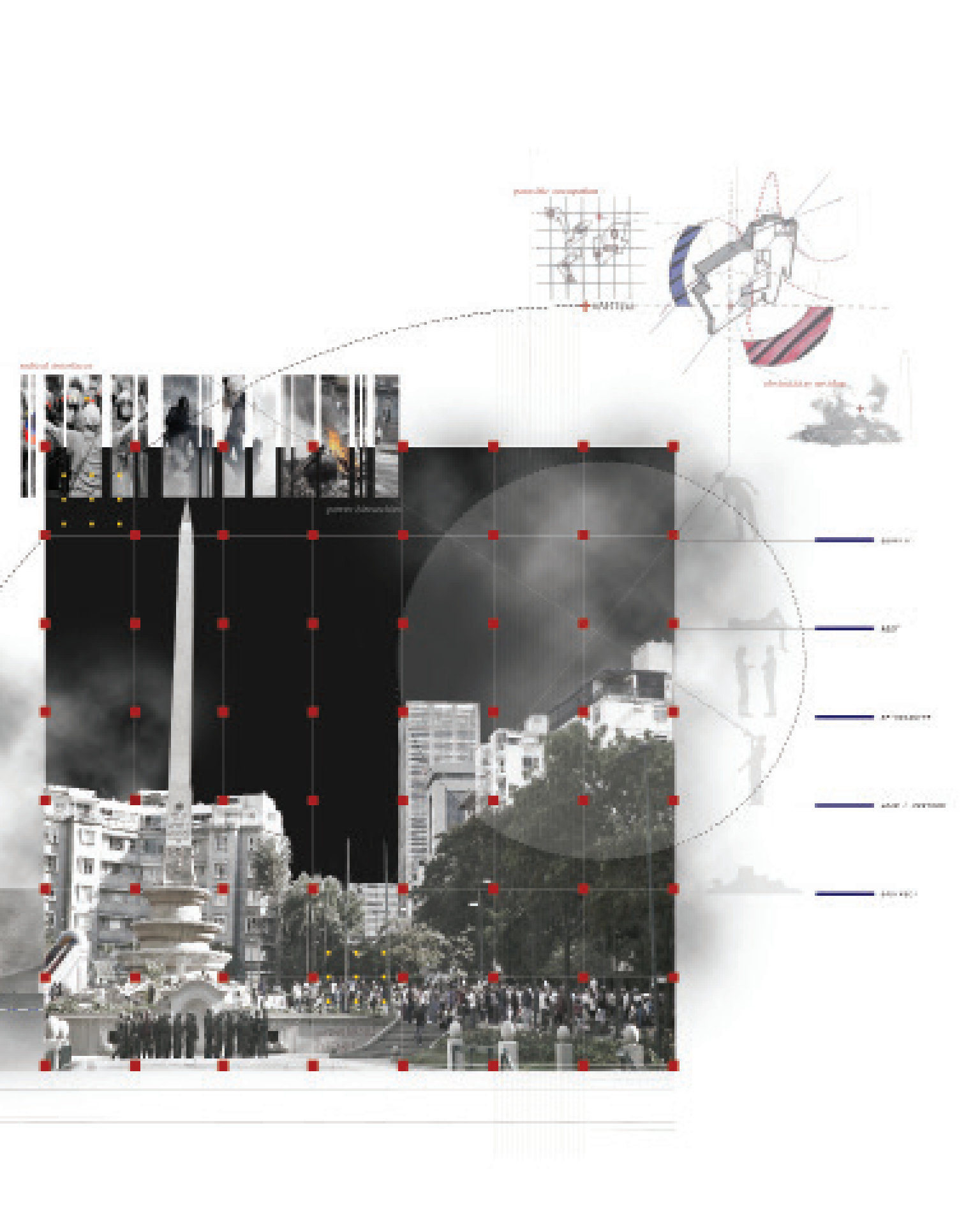


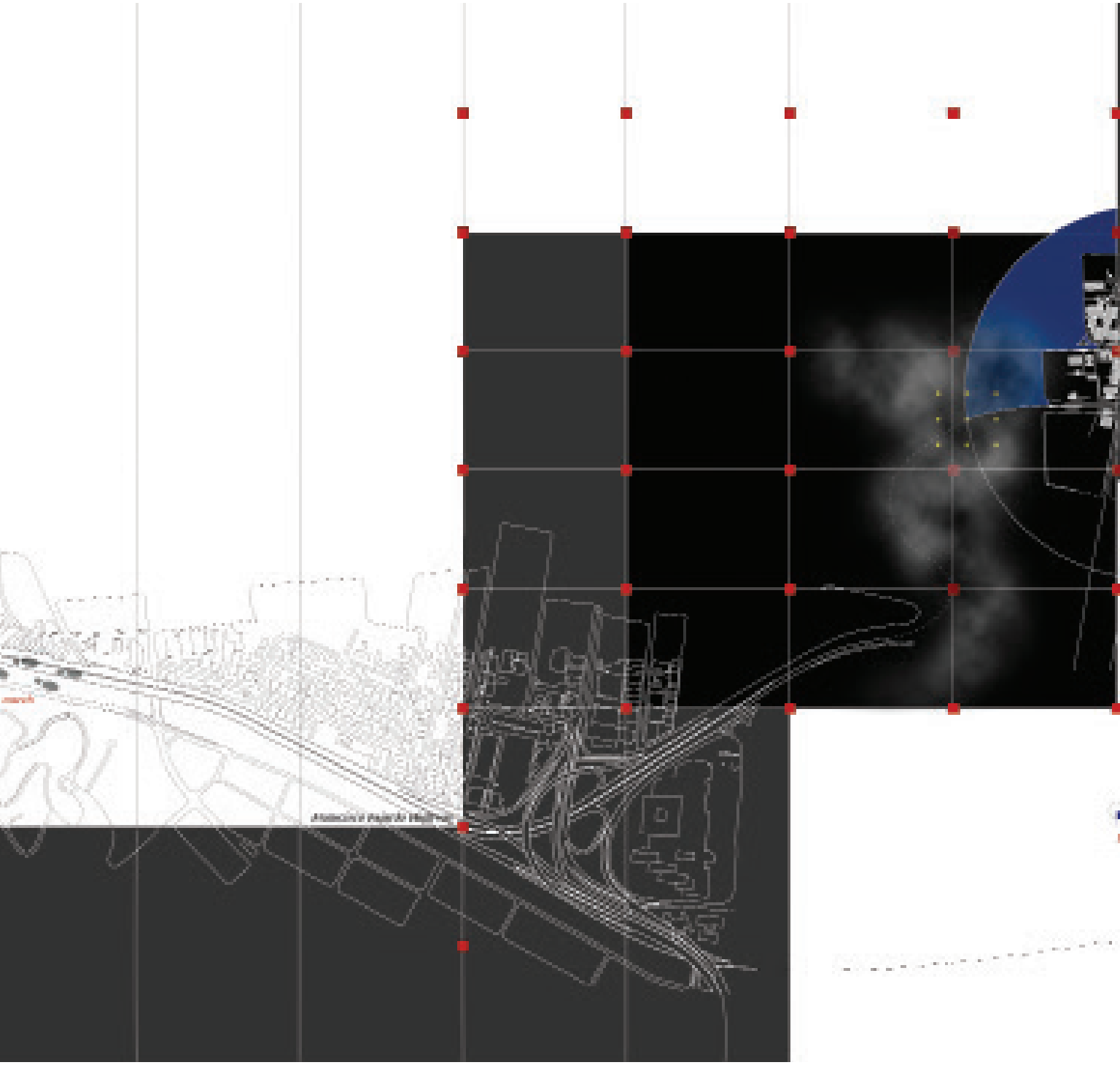
PARASITIC INTERVENTION/S

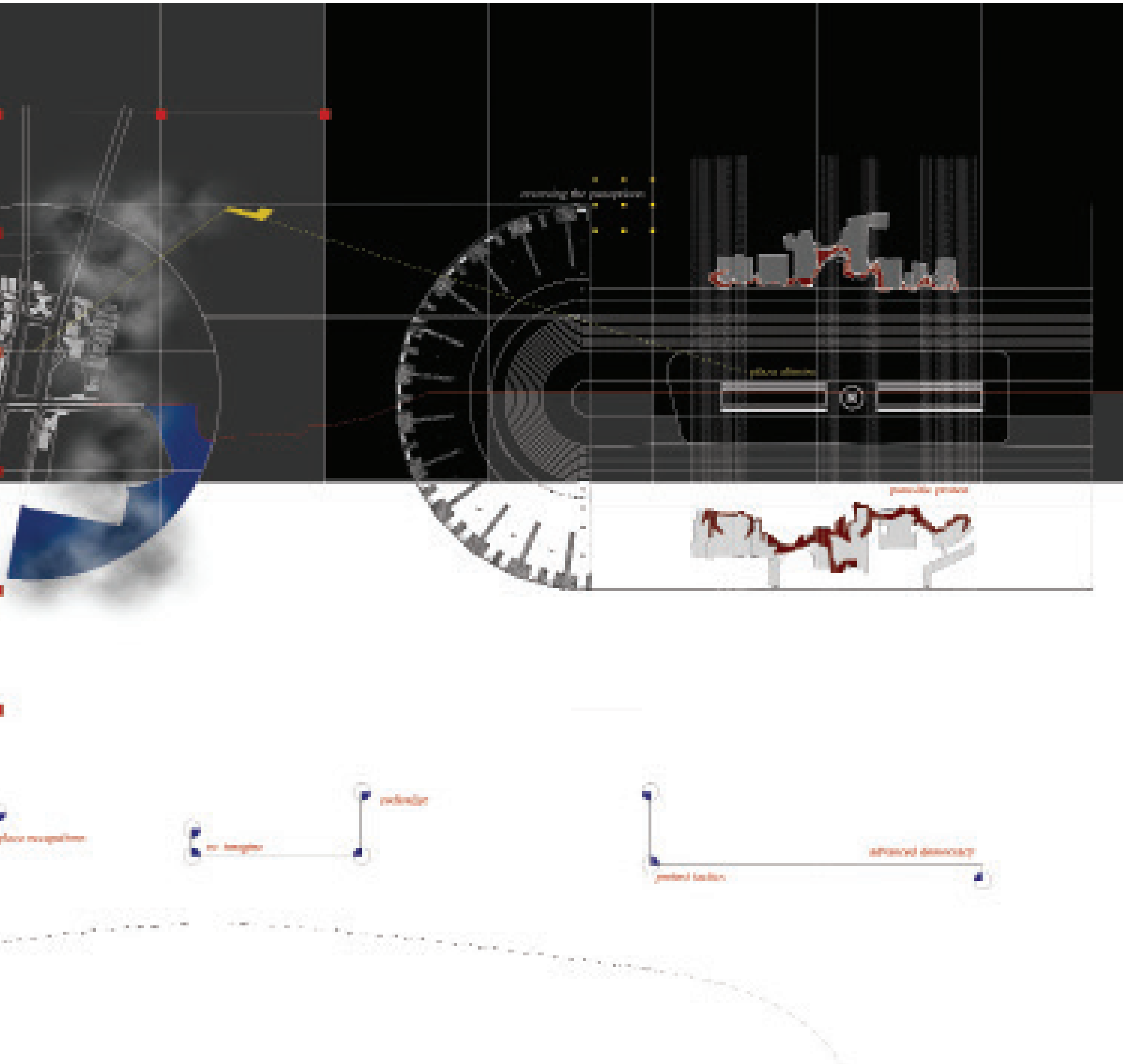
The intervention is parasitic and takes over the building's façade, but also infiltrates the building's interior. This creates interstitial spaces that protesters can occupy, perform, and find refuge in both physical and psychological ways. These structures work like a mechanical scaffolding, composed of W-flanges, pulley systems, and retractable cladding elements constructed from the residue of the protest barricades. This parasitic performance machine is ephemeral and speaks to the ad-hoc nature of the protest/occupy movement.

An architecture of infiltration and disruption aids the protester in their political and social agendas through shelter, refuge, and spectacle. The architecture becomes as much a tool for protest as it becomes protest itself. A re-envisioning of protest dynamics from the horizontal condition to the vertical condition decreases the vulnerability of the protester and heightens their status to that of the oppressive and authoritarian governing forces at play.








advanced democracy

Fugue State

Kitae Kim | Studio Critic: Anca Trandafirescu

Hikikomori are recluses who seek extreme isolation as a reaction to their hostile social environment perpetuated by the conformist culture of Japan. These people find escape by taking refuge in their rooms, not coming out—sometimes for years.

How can mobility grant agency to a group of people that intentionally isolate themselves? How can this mobility simultaneously enable anonymity while also reflecting back on the society that created its necessity? This project proposes a networked counter-memorial beneath Shinjuku, Tokyo that creates trails of fog throughout the city streets in order to bring access to and for the Hikikomori. It refuses to be a permanent monument rooted in a locale where it can be neglected. It uses a system of constructed vapor that invades the everyday spaces, co-opts the banal, erases the existing, and disrupts the familiar. At the same time, the memorial's fog is unstable. Its material can be shaped but not controlled, reflecting on the nature and role of an invisible and almost forgotten people. ■

WHITE-OUT GRADIENT

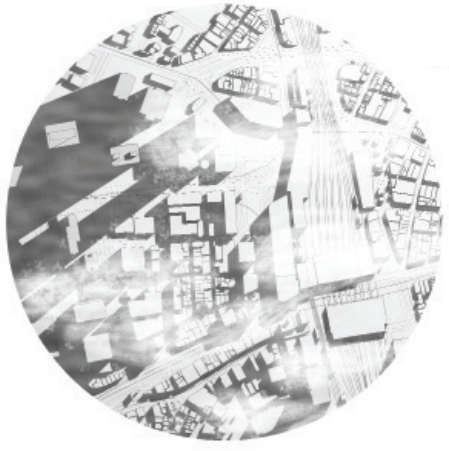
Expansive gradient of environment
Distorted spatial perception
Inconsistent public space

FOG NETWORK ACTIVATED

An atmospheric memorial for forgotten, invisible people
Ubiquitous, artificial, invasive, unstable

WHITE-OUT PATHWAYS

Camouflage trails for Hikikomori mobility during daytime
Disrupt pedestrians' perception of people and space
Erasure of the built environment

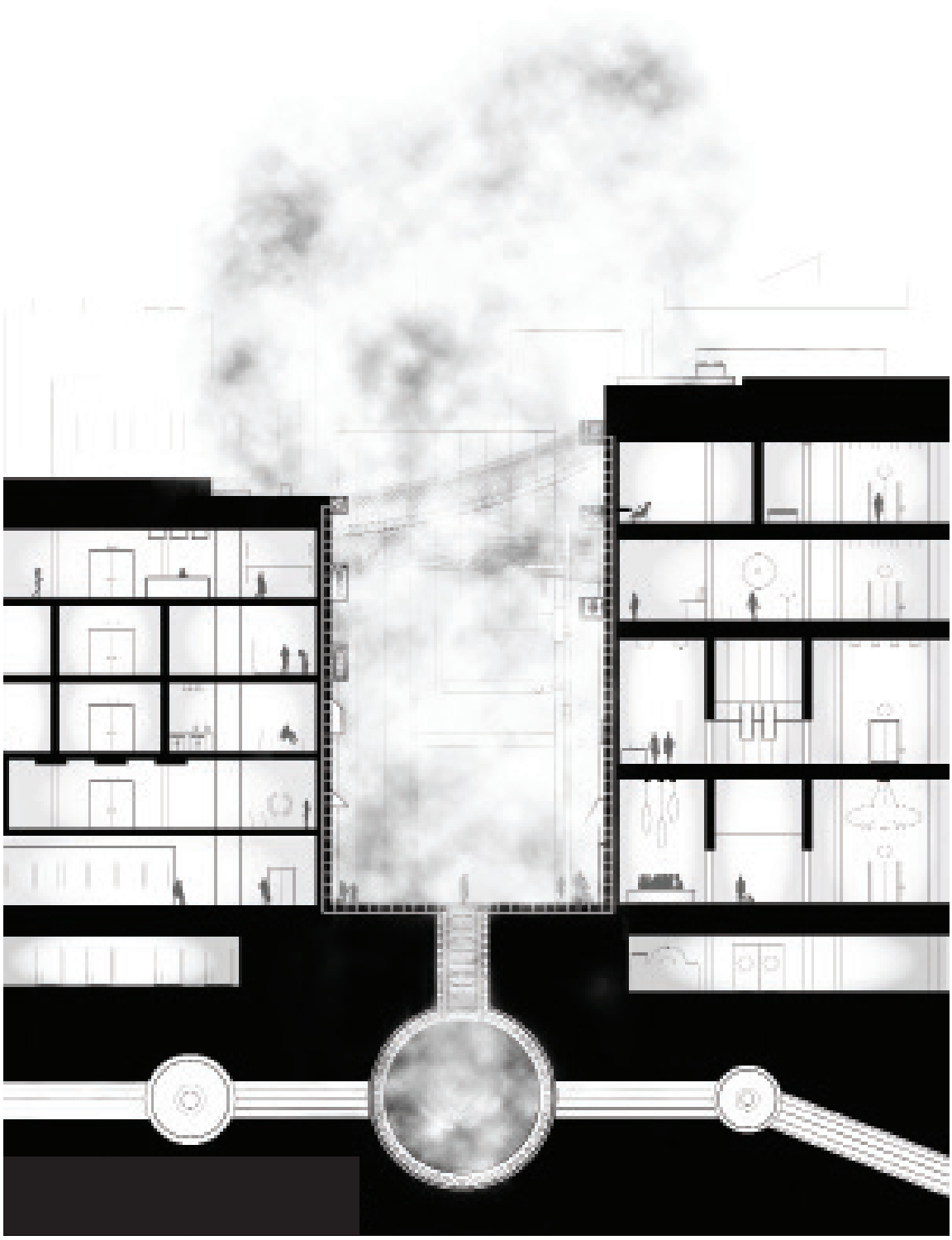


WINDY CONDITIONS

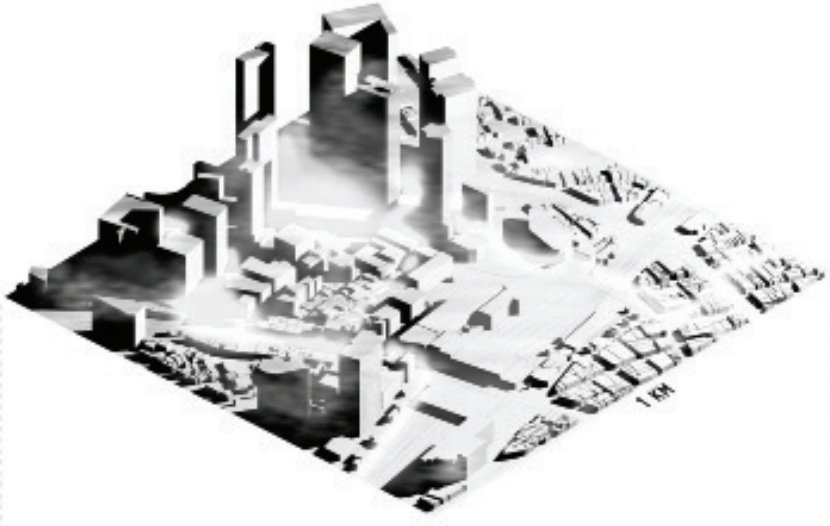
Uncontrollable atmosphere
Disintegration of trails
Opportunity for visibility/resolution

FOG NETWORK (STREET SECTION)

Cut through fog ballas, stack and fog nozzles , and condensation nets attached to buildings.



DEPARTMENT STORE SECTION (FOG INVASION)



Co-Opt

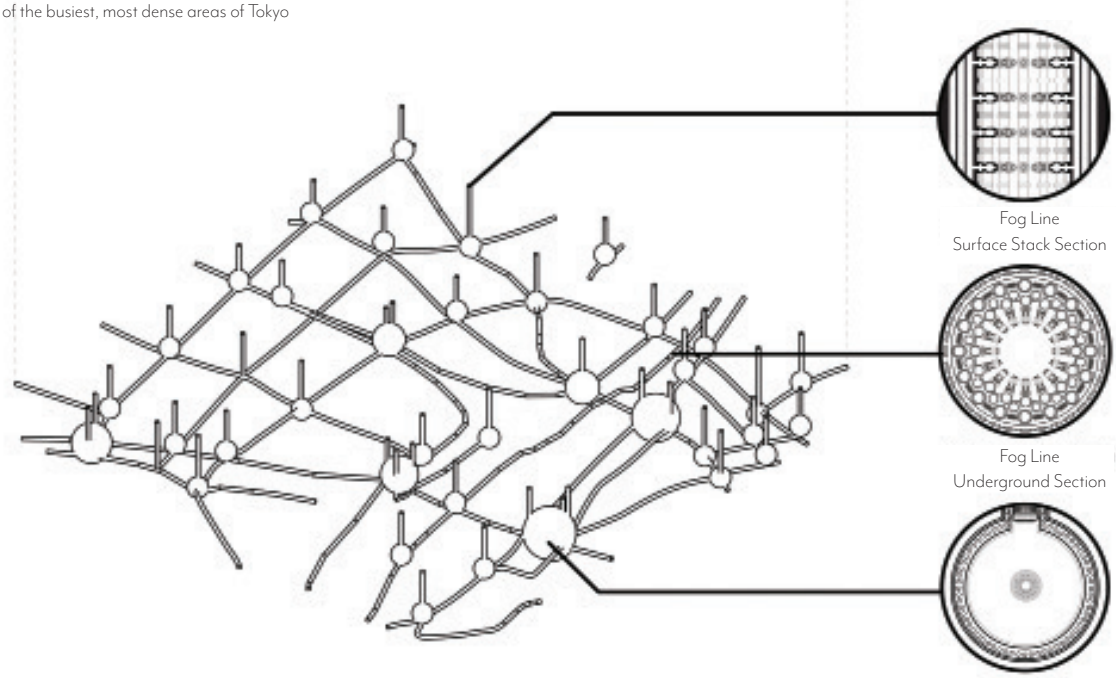
Civic Services

Personal Atmospheres

Weather

FOG MAP

Shinjuku Skyscraper District, Tokyo, Japan
One of the busiest, most dense areas of Tokyo



Fog Line
Surface Stack Section

Fog Line
Underground Section

Fog Line
Ballast Section

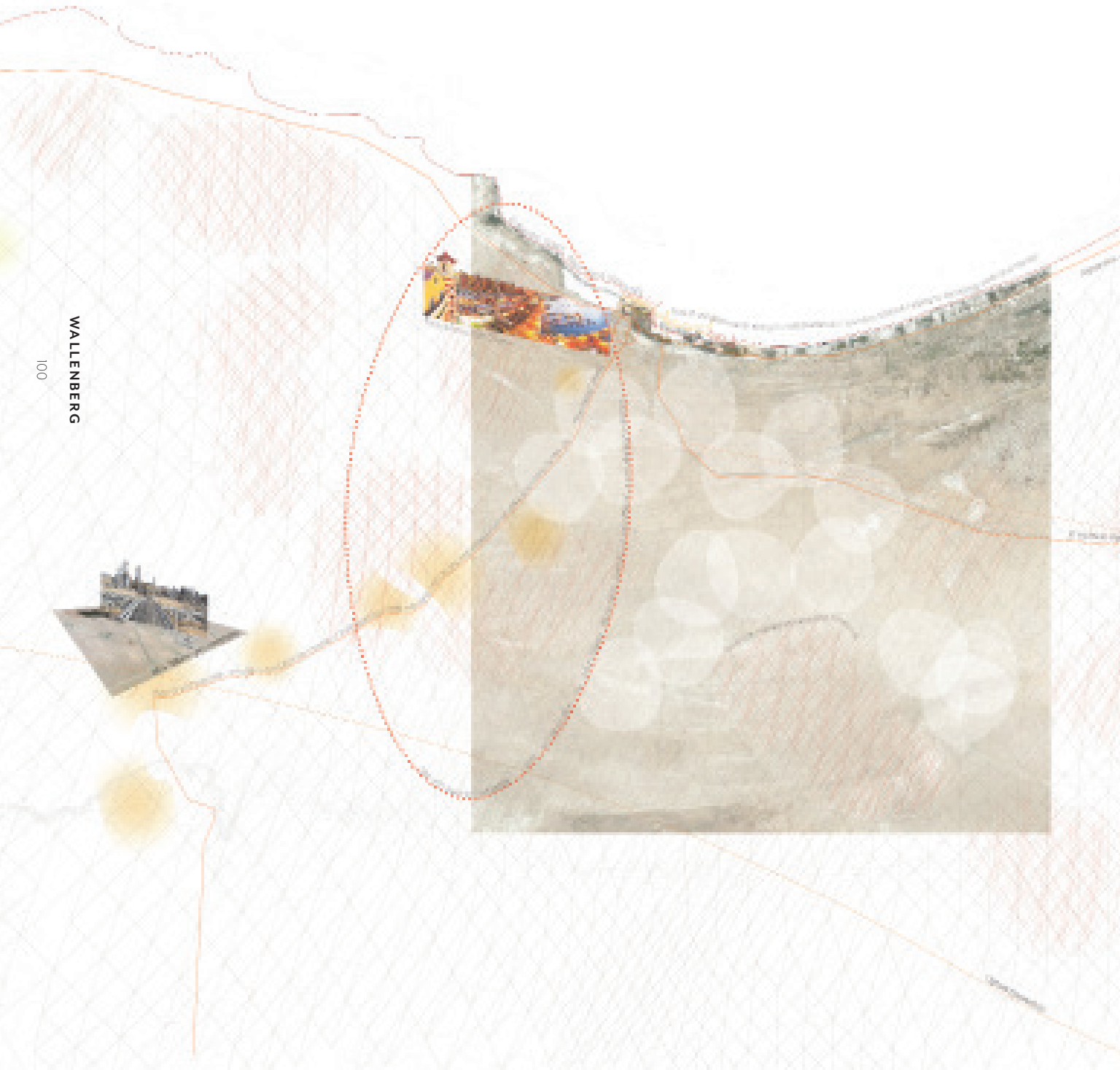
FOG LINE INFRASTRUCTURE AXONOMETRIC

Triggered during morning and evening rush hours

NOZZLE COMPONENT

EL ALAMEIN MAP

Geographical map of El Alamein embedded with a series of findings. Indicates bands of land cleared for tourism and natural resource mining, natural gas and oil fields, marked minefields, potentially hazardous regions, the region of the World War II El Alamein Battle, and territory the Bedouins have inhabited for ages.



Inscriptions of Security

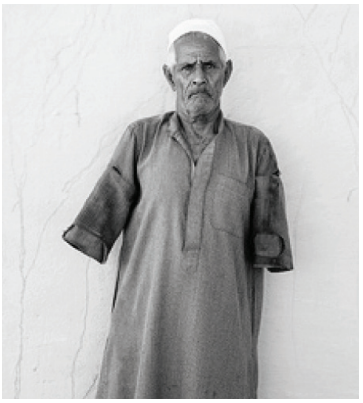
Kati Albee | Studio Critic: Dawn Gilpin

El Alamein, Egypt is a World War II battleground that has tormented natives of the landscape for decades. Since the battle, detonated landmines concealed in the desert have caused over 8,000 civilian casualties. This haunts individuals with maimed appendages, unable to participate in customary practices.

The nomadic Bedouin population has existed in a realm of negotiable refuge for ages, but is now deprived of fluid movement across their homeland. An architectural ecosystem seeks to return whimsical migration patterns to the population, bridging the gap between volatile territories and a sense of security. Through an ecology of biomechanical devices, as an extension of the Bedouin culture, the precarious site will attempt to recapture a sense of refuge. Various species will operate along a spectrum of physical and psychological roles while embedding the territory with tangible inscriptions of security. ■

MASTOOR ALL ATTLA

Injured in early 1990s; he was dining in the desert with friends when their campfire triggered a buried UXO (unexploded bomb). Mastoor lost his arm, left eye, and penis. After the explosion, he was unconscious for one week and awaits corrective plastic surgery.



DAWL MOHAMMED

Injured in 1958 east of Gelala, while out collecting firewood with another man. He spent forty days in a hospital in Alexandria. The other man, his cousin Faize, was killed.

ALI MOHAMMED AWAD

Dug up a metal object he found in 1994. When it exploded he lost his thumb, arm, and right eye. The vision in his left eye is impaired and he is nearly deaf. Ali was with a relative who was also injured; nearby villagers found the other man carrying his own hand.

HUDA

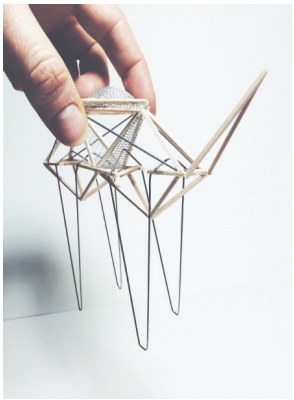
Huda "Right Path" was returning at sunset emitting a glow with magnifying intensity. The family watched Huda lower herself above a landmine, shudder as she accepted the blow, and trot north to dispose of the mine. Huda is still capable of eliminating two landmines before obsolescence.

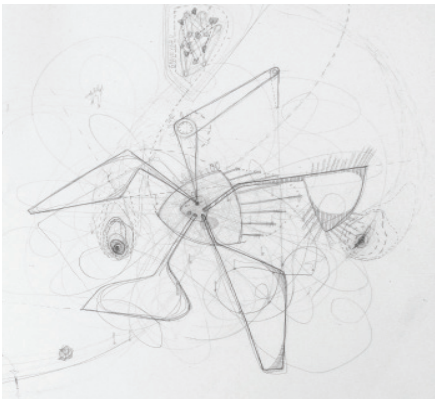
RUWAYDAH

Ruwaydah "Walking Gently" is a young dromedary still in training. His family is programming him to understand the boundaries and extents he is responsible to care for. The Bedouin son adores his dromedary, searching the horizon for his return at nightfall.

NEGMA

Negma "Star" has a particularly affectionate relationship with her family. A mutual flow of care and loyalty transpires. Anytime Negma returns home, her family ensures all gears and bolts are secure and her sails are patched. In return, Negma tends to their territory each and every day.



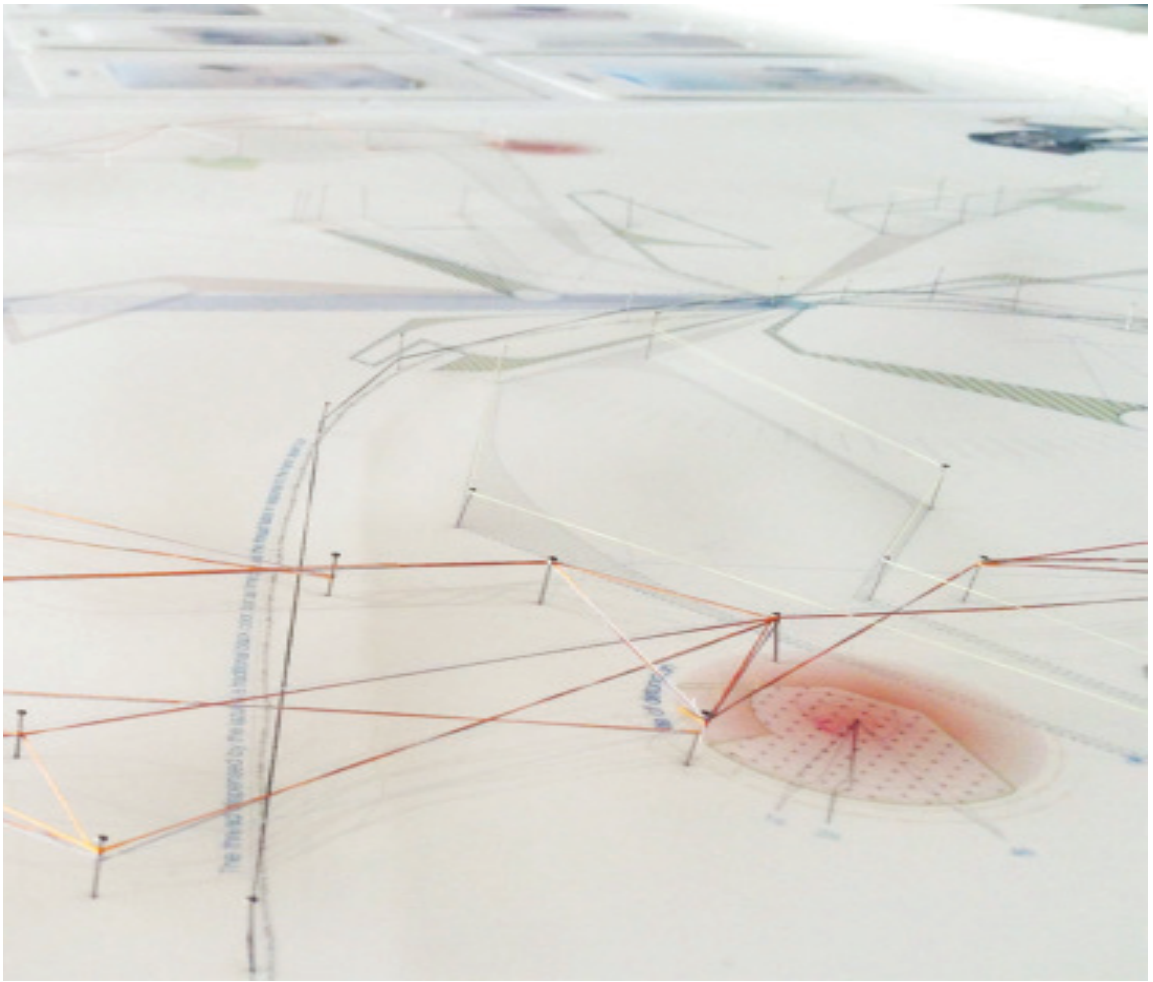


LEFT

Study models assisted in the development of the dromedary, which helped to determine what functions it must shoulder in order to provide secure refuge for the Bedouin people. This model focused on designing a stomach able to withstand landmine explosions.

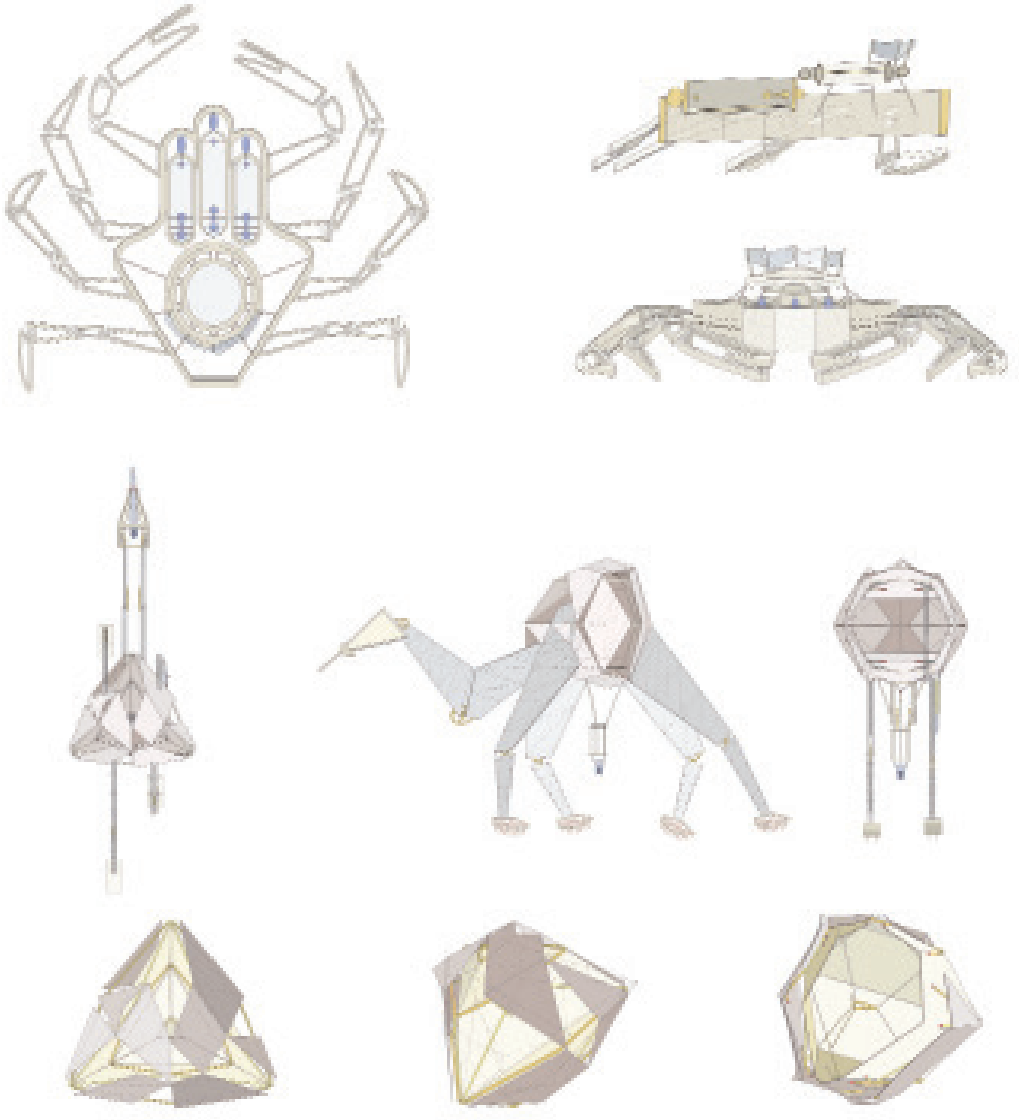
RIGHT

Through sketching, a methodology was created for the biomechanical devices to survey the site and migration routes, each species providing a varying range of physical and psychological refuge.



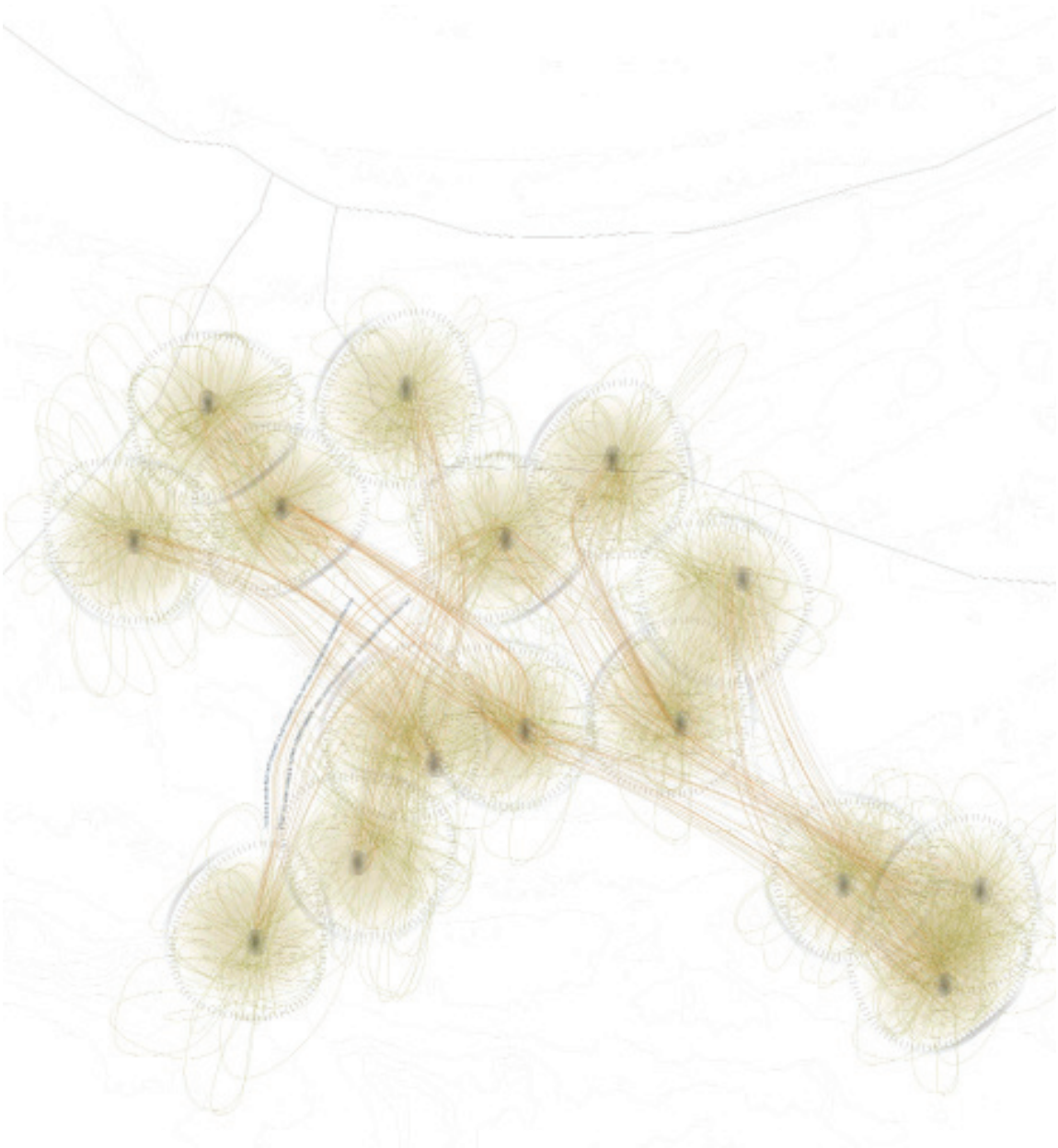
SYMPOSIUM MODEL

Final installation at the Wallenberg Exhibition— using thread to demarcate the paths of security that the biomechanical ecosystem employs. It uses a variety of intensities, particularly through color and density, to symbolize dangerous areas around the periphery of the campsite.



ECOSYSTEM SCHEMATICS

Embedding architectural organisms into ecosystems of precarious sites, architecture seeks to bridge the gap between volatile homelands and a sense of security. A system of biomechanical devices is employed to remedy the space—both physically and psychologically—ensuring asylum for drifting populations. It tends to the landscape employing a methodology that responds to cultural customs and practices of indigenous people, leaving behind tangible inscriptions of security.



BEDOUIN MIGRATION

The Bedouin people have been deprived of fluid movement across territories considered their homeland since World War II. The aim is to return sweeping, nomadic migration patterns —typically determined by seasons—back to the people who take refuge here.

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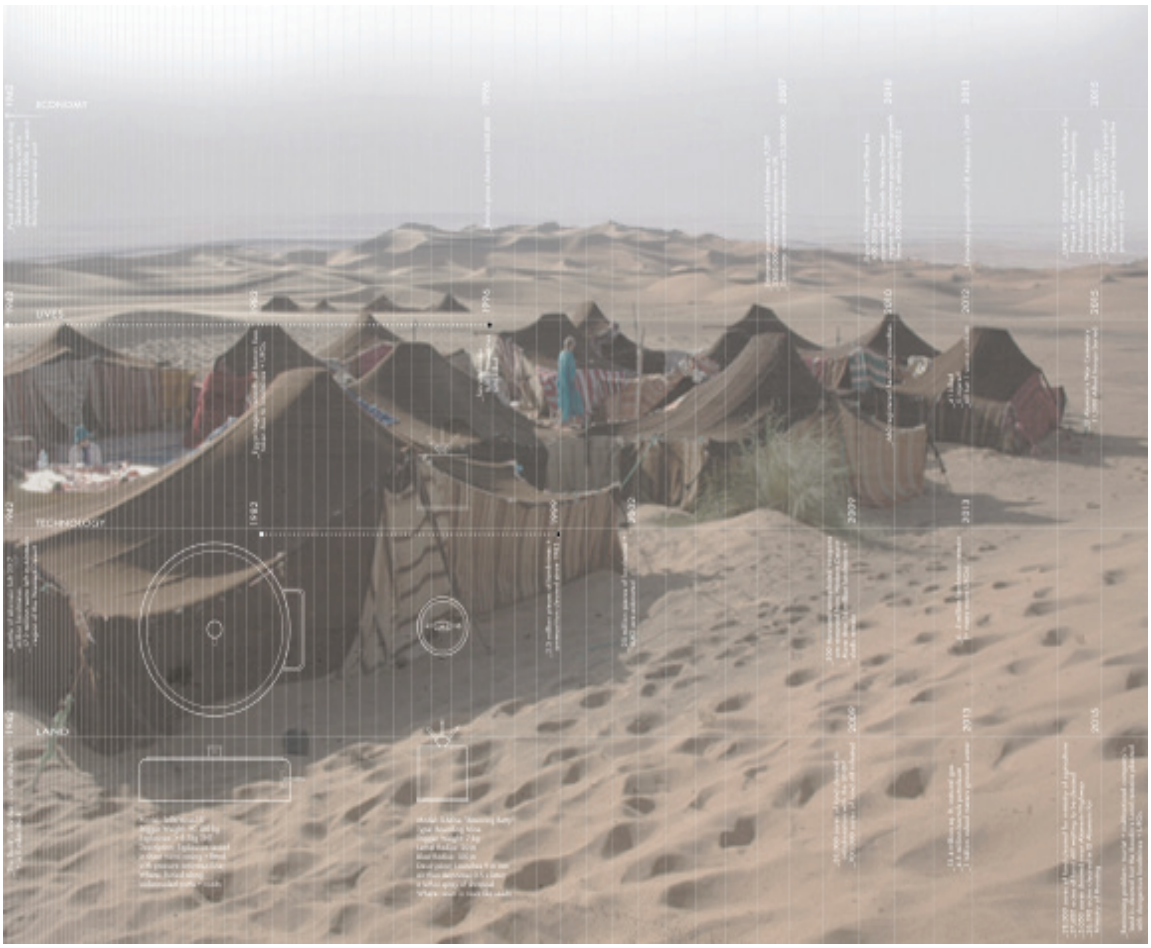
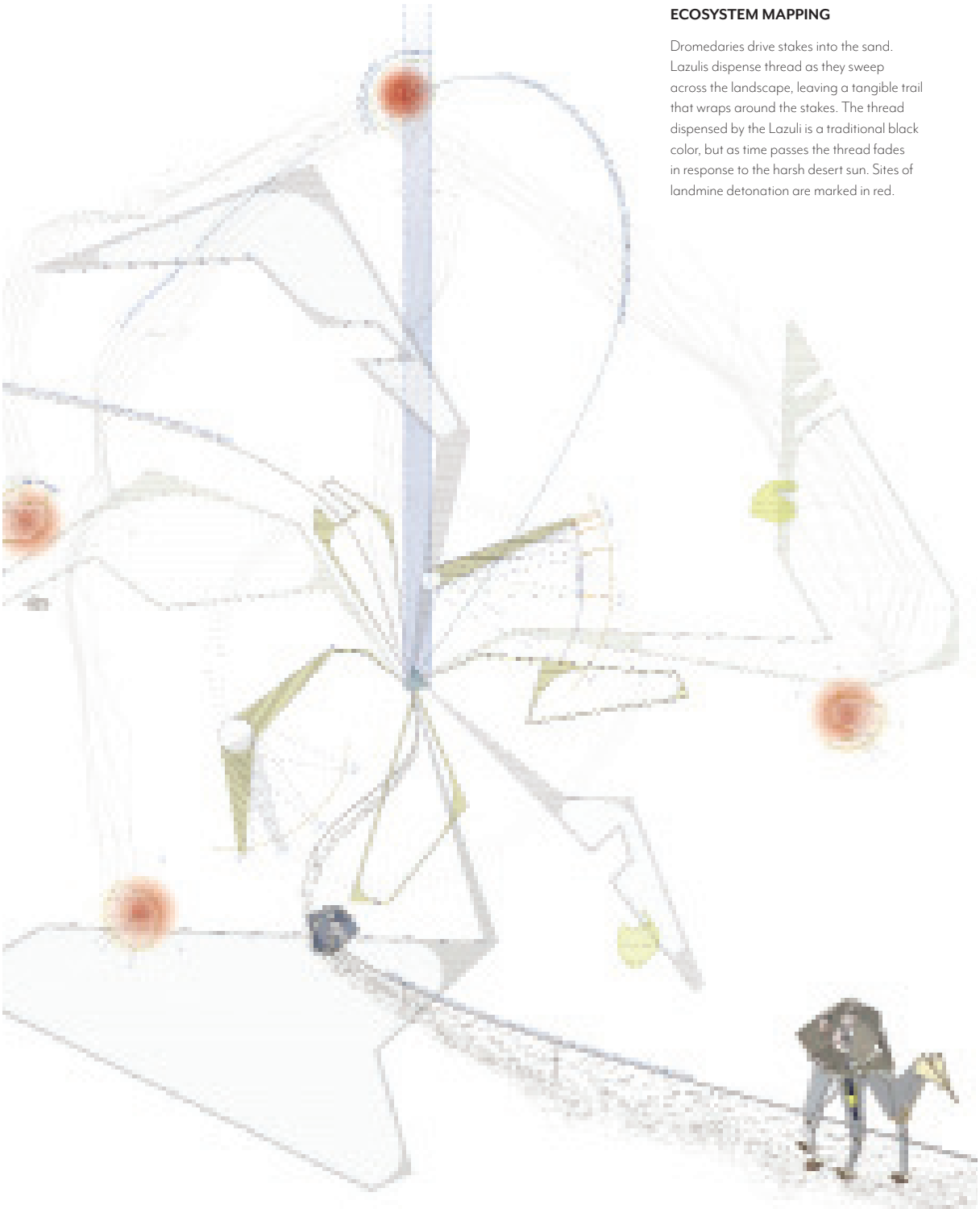
SITUATIONS DAY/NIGHT

Scenes depicting the close bond formed between Bedouin tribes and the ecosystem consisting of Lazulii, Dromedaries, and Khamsas. This is possible through careful integration—responding to cultural customs and practices that have existed for centuries.



TIMELINE

A depiction of the progression—in relation to economy, population, technology, and land—that has transpired in El Alamein since the World War II Battle of 1942.



ECOSYSTEM MAPPING

Dromedaries drive stakes into the sand. Lazulis dispense thread as they sweep across the landscape, leaving a tangible trail that wraps around the stakes. The thread dispensed by the Lazuli is a traditional black color, but as time passes the thread fades in response to the harsh desert sun. Sites of landmine detonation are marked in red.

TOGGLE

Time-lapse photo of table between states

TAB(U)L(A)E

A Post-Digital Work-Space for the Production of Discursive Imagery

Trevor Herman Hilker | Studio Critic: Dawn Gilpin

TAB(U)L(A)E speculates on the act of drawing as a means by which the architect might engage problems of the preposterous. When taking on questions like "refuge," conditions of complexity—crises of incomprehensible scale—necessitate ways of working that require equal parts complexity and agility. The project has produced images that consider technology, ethics, prosthetics, and sites of destruction due to war and climate change in response to the social problem of refuge. The images are a study in the act of drawing that engages a phenomenon of association between orientation (horizontal/vertical) and modalities of production (analog/digital). TAB(U)L(A)E proposes a speculative work-space that facilitates a "toggle;" an act of moving between modalities and orientations that enables the possibility for complex drawing practices, but also anticipates their abstraction. A table that affords one to produce work, and a tabula by which this cultural production becomes intelligible.

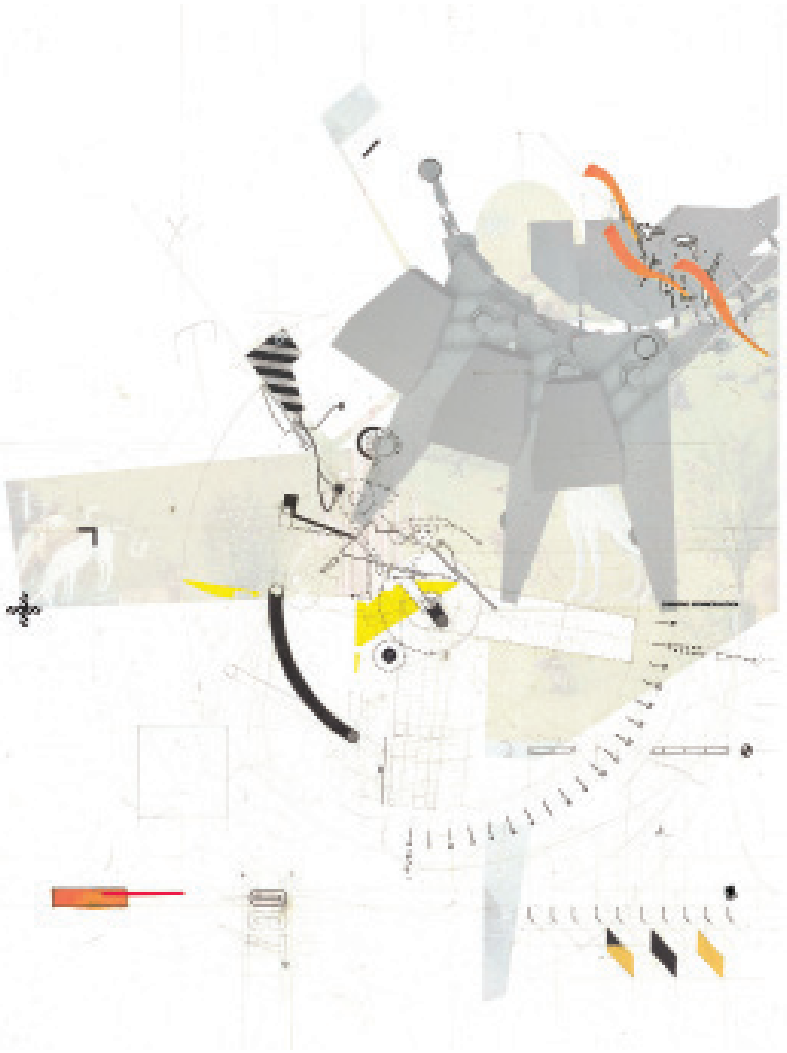
The dialogue between horizontal table and vertical tabula draws from the reference and study of Diderot and d'Alembert's *Encyclopédie* and Leo Steinberg's *Other Criteria: Confrontations with Twentieth Century Art*, as they have been presented in Amy Catania Kulper's *Representing the Discipline: The Operations of Architecture's Discursive Imagery*. Through *Encyclopédie*, the relationship between the horizontal and vertical is understood as one of production vs. abstraction.

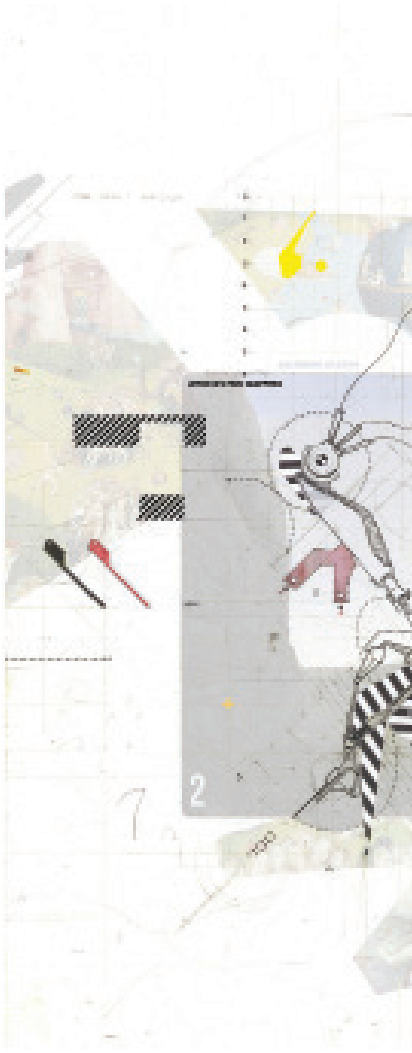
The table persists as the work-space, the site of production, while the tabula organizes and makes legible the product through organizing, delineating, and abstracting the tools and components from which the product is produced. Similarly, Steinberg's definition of aesthetic address—as studied through the scope of the flatbed printing press—expresses that the quality of being produced "in the horizontal" can be maintained as work moves to the vertical plane. This retention of the legibility of production enables an accessibility to the vertical presentation of the content, maintaining the reference points to the tools and processes of "making" as the shift in orientation changes an understanding of the work from "in production" to "in presentation."

The course of this investigation is continually challenged through a series of inquiries: Is it possible to produce the work on the table, to stage conversation as others gather around the table, to contribute to the production in the vertical orientation (as the digital dictates), and to enable access to the content of the work produced in the horizontal but displayed in the vertical orientation of presentation? Although TAB(U)L(A)E makes possible the physical act of drawing, can it also produce the site of its own abstraction? And how might the toggle from vertical to horizontal present new territories for exploring drawing as a discursive act? ■

TRIPTYCH (GROUND ZERO)

The actual artifact of cultural production rarely surfaces in Diderot and d'Alembert's *Encyclopédie*, but it pushes the work of TAB(U)L(A)E as the primary site of engagement. The image seeks to build context, to allude to a language of prosthetics/aesthetics and questions of technology/ethics embedded within the drawing itself.





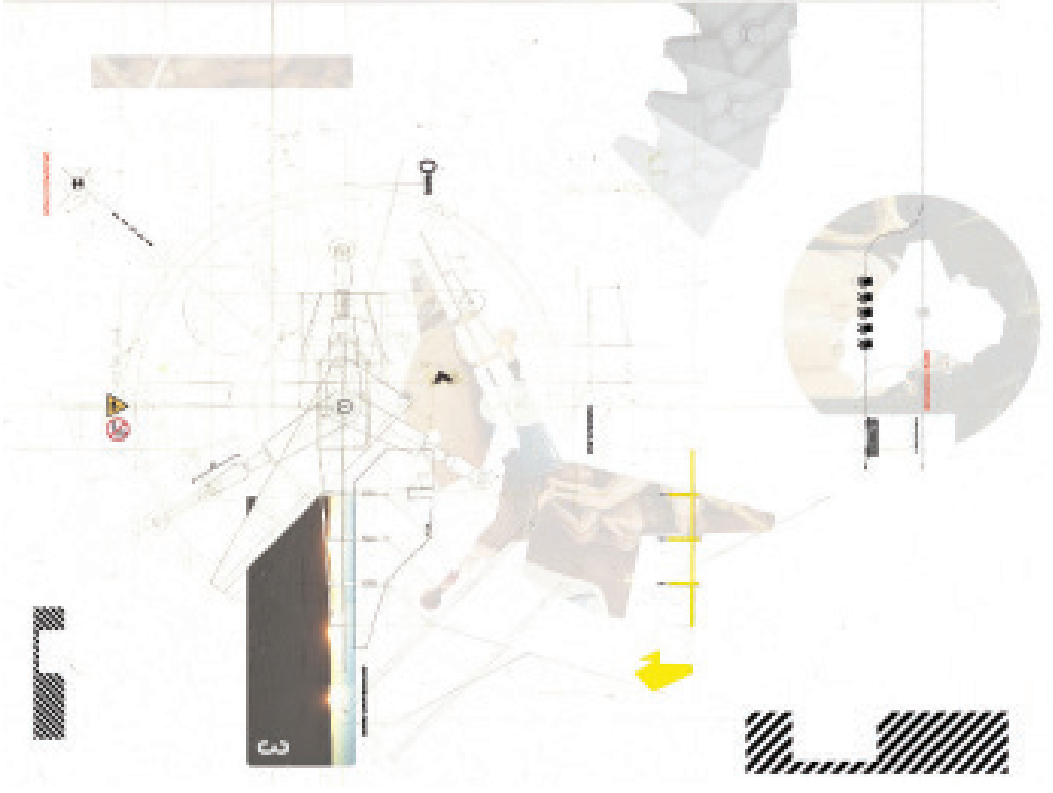
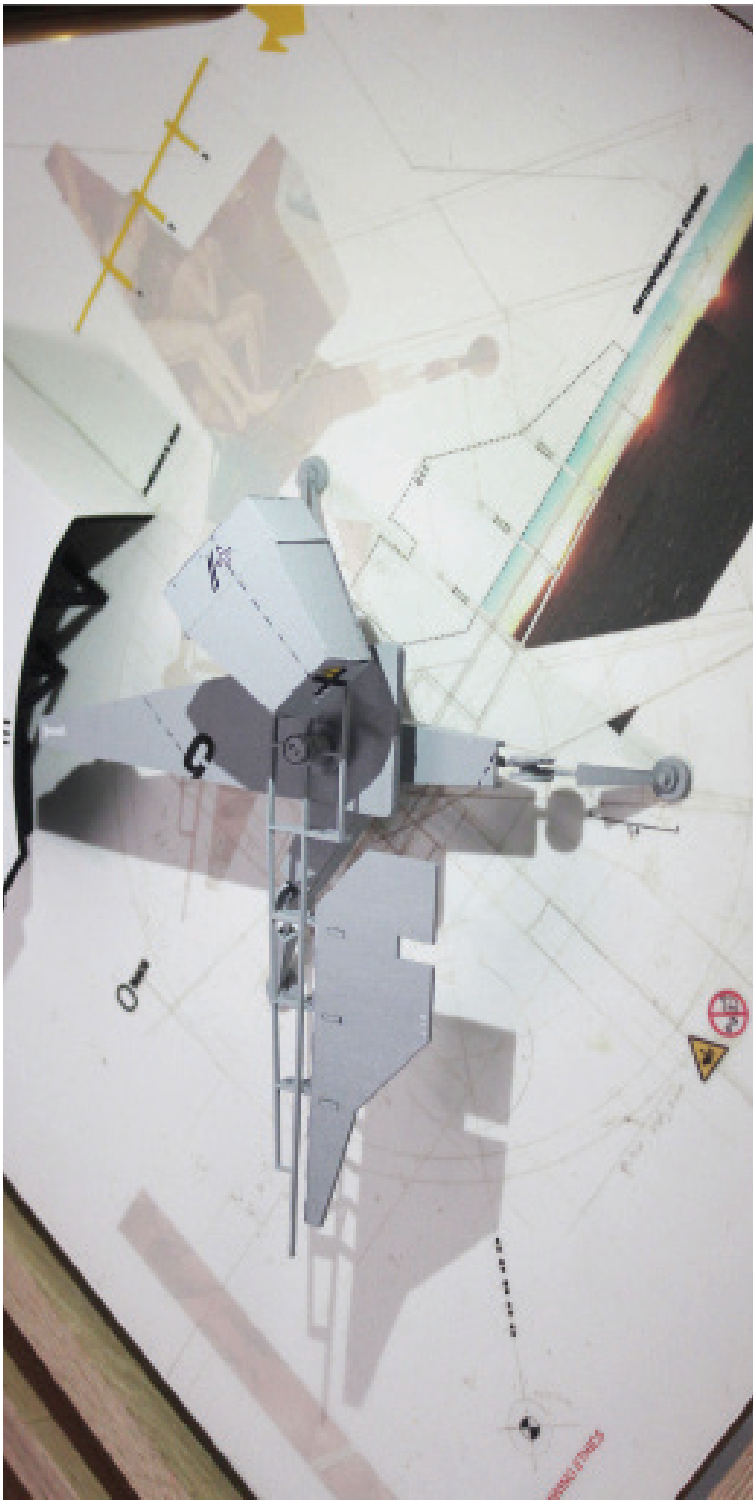


TABLE / TABULA

The horizontal table enables the production of analog work and allows more than one person to gather around its surface for conversation—its construction refers to the triptych, framing the drawing to allow its trans-orientation.
The vertical is the space of digital production and the position of the disciplinary test of aesthetic address. Does the work read as authorial, or does the tabula enable access to the often inaccessible thinking embedded in the discursive image?

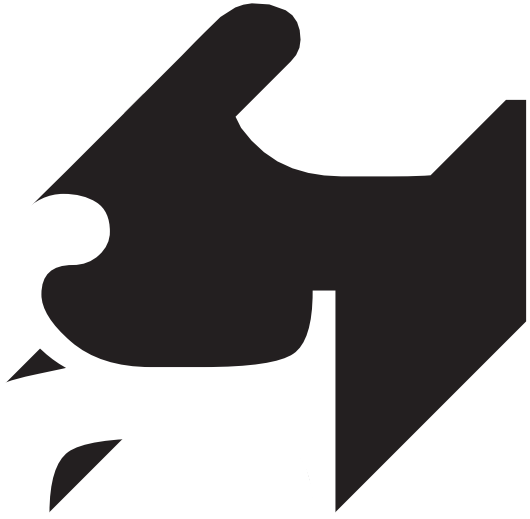


TOPOGRAPHY SCANNER
(3D ARTIFACT SHADOW SITES)

Born from a collection of horizontal/analog orthographic debris, the topography scanner has been pushed into three dimensions to inhabit the liminal zone of projection, exploring possible ways of working in the "third space." Crawling across the horizontal plane of the table, the scanner projects its shadow, recording qualities of both light and surface that become points of reference for the drawing's content.

PROSTHETIC WORK-SPACE

Produced from the act of "toggling," the interstitial zones between Vertical and Horizontal become ripe for inhabitation. The poles are laden with their associative baggage, but what of the in-between? For now, prosthetic armatures engage the liminal, populating it with ephemeral bits of drawing. Briefly, they survey its terrain in anticipation of the next move.



Mapping Conflicts

ABSTRACT

The proposal for the project was about the degradation and ruination caused by conflicts during select moments of history. These four boxes (eight installations) depict scenarios in which architecture can either camouflage itself as a site of post-conflict or protect itself from future acts of aggression or violence. In this regard, all of the architecture is inhabitable, it only appears desolate. The installations are in many ways dramatized, but there remains a serious intention towards the literal interpretation of this architecture.

Gideon Schwartzman, Yurong Wu, James Howe III | ASRG

In *Terror from the Air*, Peter Sloterdijk claims that the 20th century did not truly begin until April 22, 1915. That day, the Germans initiated the first chemical warfare attack on enemy troops. According to Sloterdijk, this act ultimately sent the century down a path of terrorism, environmental targeting, and a need for responsive design.

This project aims to demonstrate situations in which architecture acts as a shelter from foreseeable conflicts. Moments throughout history that demonstrate the destructive nature of human conflict begin a conversation of what is currently at stake in our cities. Aggression and ruination are dramatized to draw attention to the catastrophic effect of conflict. The project is situated in a less dismal context so the work can be optimistic about how to prevent or preserve these environments.

The history of the twentieth century traces a path of environmental targeting. Our spaces were weakened through two world wars, and a political stalemate involving countless ideological collisions resulted in both physical and psychological anxiety. Where we stood was no longer clear and the innocence of safety evaporated. Wearing scabs, tortured by the past and reminded by our wounds, it is time to heal. But how can we heal when we have scars to be remembered? Instead of remembering our wounds as a token of destruction, we should view them as an emblem of existence. Our scabs define us.

But what if this all could be prevented? An innocence maintained through evasion. The band-aid covers the wound, but it acknowledges its presence. It disguises it as something new. Could this be how we heal? If we are covered in Band-Aids will we still get hurt? This is a solution through response. But then again, maybe our lives should not be lived with the anticipation of affliction.

You never really think about it, do you? From the moment we are born, we instinctively begin to breathe—and continue this action until our last day. The constant need to breathe comes with the benefit of near perfect automation until a disruption causes us to become hyper aware. Whether through conscious choice (to hold your breath underwater) or involuntarily, (like the seasonal misery of partial congestion) once your body becomes aware of your breathing, your thoughts shift towards longing for your next unhindered breath, or the next time you don't have to think about actively breathing again.

Once passive, unseen, unheard—you find yourself thinking about the breaths you are making. Can you feel your lungs strain to expand and contract as you take another breath? Can you feel it becoming heavier the more you know it exists? Can you feel yourself finding it impossible to think about anything else? Is it not until we are detached or blocked from the very thing keeping us alive that we find ourselves aware of its absence and riddled with panic. The interference with the temperament of air stimulates our anxieties and fears. When the substance or the action becomes unfamiliar, we can no longer respond how we once did. The most common remedy to an anxiety attack is to focus on taking deep and slow breaths—to focus on controlling the movement of air through your lungs, counting the seconds until your body begins to assimilate a state of rest. Yet (ironically) in the spur of the moment, the last thing your body thinks to do is breathe.

Today, we'd like to share with you four stories; four intimate dialogues in writing; four recollections of fear. The four stories take us from the underground of Tokyo to the suburbs of Nebraska, from a Syrian boy's wardrobe to an American family's mailbox, from the night before to the seconds after. These are four individuals who found themselves dealing with the uncertainty of air, the strangeness of air, and the terror of the air. Please don't worry, take a breath and read on. ■

BLACK BOX

Hi O,

Sorry that I haven't written back in a while. Thank you for the books. Please believe me when I say this—I am deeply grateful for them, and any news you could share with me from the city.

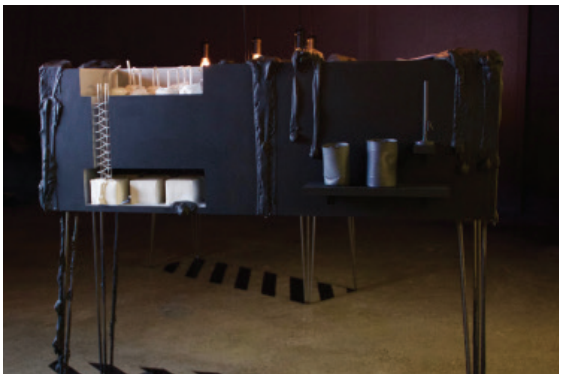
Something strange happened yesterday. Please don't laugh at me when I try to explain to you what happened. I saw a ghost! Not the ones that hide underneath your bed and scare you at night—this one was special. I swear I'm not making this up. It was near that tiny pond just behind the hill. Imagine a cloud that was sinking from the sky, that's what I thought when I first saw it. Shaped like a parachute, the ghost was translucent and pale as a sheet of paper.

Must still be early in the morning, no one's on the street yet. The ghost was moving fast through the sky with no traces left behind. I started running after it but soon realized there was no use. so I just stood there and watched as it rode the wind towards the forest. It drifted for a long while before finally starting to descend. By the time it was just over the forest, the sun had already come up. Shortly after that, there was a tremendous blast. The whole village must have woken up. The ghost disappeared in a fireball and a part of it came crashing to the ground. (Hopefully no one was in that forest!)

Later that day, the forest rangers and army personnel arrived. They kept the curious far back from the fallen ghost. They went in and out of the forest until dark, and left without any explanation. O, how I wish you could've been here to see it. You would've had a better idea of what it was. But for now at least, I am convinced. I saw a ghost. You believe me, don't you?

Anyway, Jenny says, "Hi."

Miss you,
C



PLASTER BOX

Dear E,

During my final days here I've noticed a particular theme that has pulsed through the city: extremity. Air heavier than lead, skyscrapers piercing through the sky, work schedules accounting for every second—Tokyo really is a place like no other.

The cliché rings true that the city can be either your best friend or your worst enemy. It has brought me my highest of highs and lowest of lows. I have never found such happiness or joy in the world beyond this city, nor have I ever felt so terrifyingly alone.

But it's different here, down below the ground. The only place in the city that extremity could not seem to squeeze through. The only place you and me could take a breath; where we are shielded from the terror and wonder above. Cast your mind back if you can, to when we first came to the city, when the subway map looked like the secret code from another universe. Do you remember?

He was just like that, you know? This young man I saw getting on the train, nervously looking around. I couldn't help but watch him from the other end of the carriage.
His hands shook as he opened a brown bag from his pocket. Two droplets and a few minutes later a mist enveloped the space. As I took a deep breath my stomach tightened and my eyes began to blur. I knew immediately , something was not right.

RED BOX

Dear A,

Hope everything went well with the paper you were nervous about since the last time I spoke to you. I don't even have the strength to get out of bed and switch on the radio these days, with all the terrifying things that have been happening. I saw Sally's mom in the grocery store the other day. I remember asking her while walking back to the house if she was scared. She wasn't really listening. She just nodded nervously and brushed it off. I really just don't know what to do now. Our street's been getting quieter and quieter each day. Everyone's running away or preparing for the worst case scenario. But what can I do, indeed, what can I do, other than just sit here and burden you with my worries.

Never make your most important decisions when you are at your most vulnerable they say. Wait. Be patient. The storm will pass they say. But what if the storm never passes? What if we find ourselves in the storm indefinitely?

All these pamphlets and flyers that have been coming through the mails. Like they think we really need any more reminders of the situation. Your brother told me they are giving them out at school too, but just in case, I've mailed you one.

Be safe,
Love,
D

YELLOW BOX

Dear R,

It's been such a long time.

But I found it. Hidden inside the ramshackle wardrobe among moth eaten thermals and old handkerchiefs was his bag with his proudest collection. I remembered the last time I asked him about it. As I placed it on the bed he grasped my hand. I could see his eyes light up and a grin spread across his face. Inside were individually labeled buttons of various sizes, rocks shaped like miniature trees, and a cassette tape of some singer from a foreign land. He never even had a machine to play it.

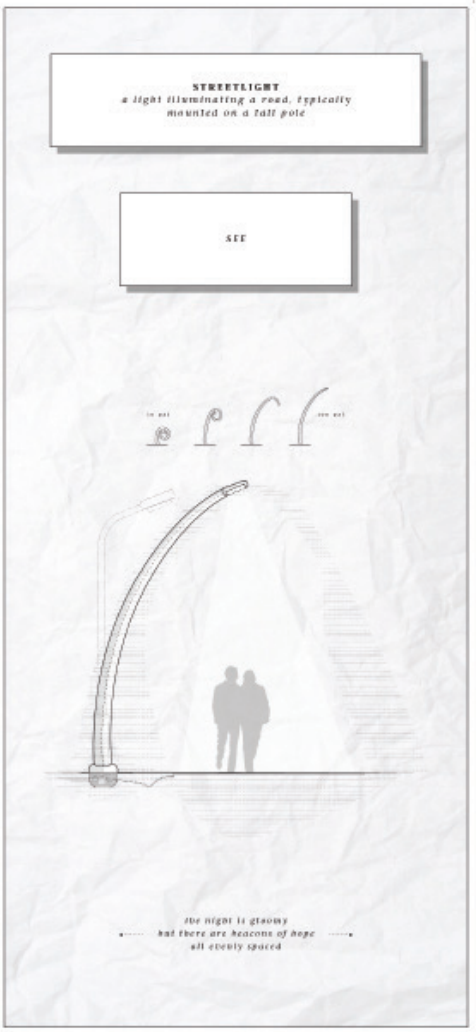
I remember him holding a red button tightly in the palm of his hand, slowly rubbing it between his thumb and fingers, as if petting an animal from another world.

He would then do what he always does, asking me to lay back against the pillow and close my eyes while he put the objects back one by one, hiding it in another corner of the room just before I opened my eyes again. How I wish this memory will never slip away from me. This bag, these little things, they are now the whole world between him and me.

As you might have heard, I lost my son.
L

THIS

A page, a screen, some text or perhaps an image.



THAT

An implied psychology of interaction with the visual work.

ABSTRACT

THIS and THAT is an architectural experiment grounded in the belief that the designed object has the responsibility of communicating with us as equally as we do with it. Manifesting in a series of inflated THINGS, these drawings, artifacts, sculptures, furniture pieces, and environments draw from notions of uncertainty to construct their experiences. Each of the human senses are metrics of evaluation for these THINGS. They must feel foreign, but ordinary. They must smell distinct, but calming. They must look grotesque, but inviting. They must sound abrupt, but curious. They must taste bland, but alluring. As the senses are pushed in positive and negative directions, certainty is suspended. We are not interested in the familiar, but rather the alternative.

This and That

Andrew Barkhouse and Carlos Pompeo | ASRG

The physical world is arrayed with object fields that carry with them embedded ergonomic logics. Material characteristics are deployed onto this object field to reinforce a desired interaction—the welcoming warmth of wood, the fickle cold of metal, the supple pliability of fabric. Then, once strategically deployed, iconography reinforces the established framework. We are left at the mercy of the subconscious…

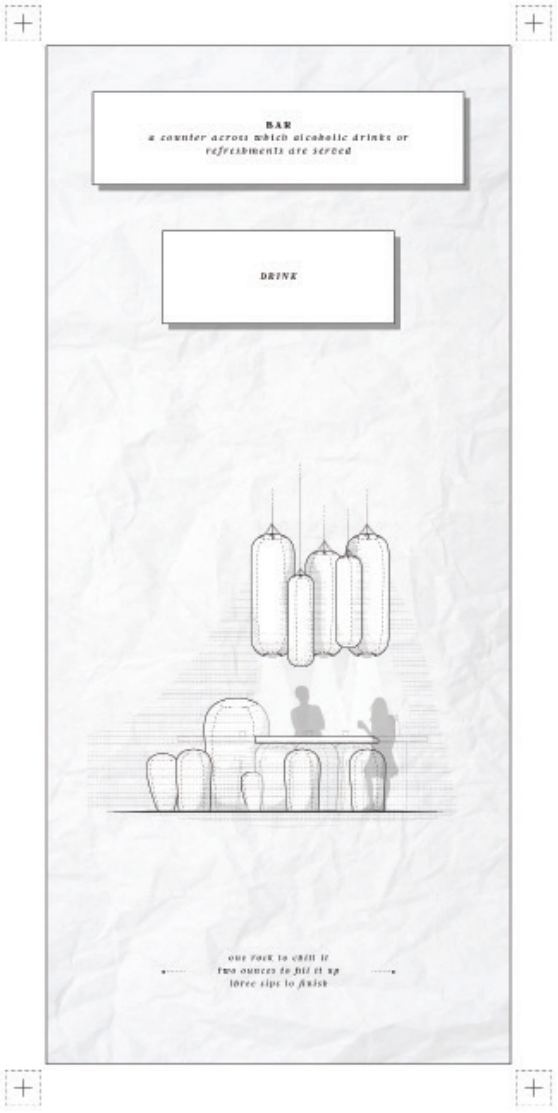
The destabilization of these perceptions through the hijacking of both materiality and iconography allows us to open new possibilities of interaction. Forms of unusual substance and structure are deployed and notation attempts to choreograph our bodies…

The notational role of iconography then begins to choreograph an experience through a destabilized and unfamiliar realm. Previously established logics of form and structure fade…

…We are simply left with THIS and THAT. ■

THIS

An object, a chair,
a playground,
a ball.

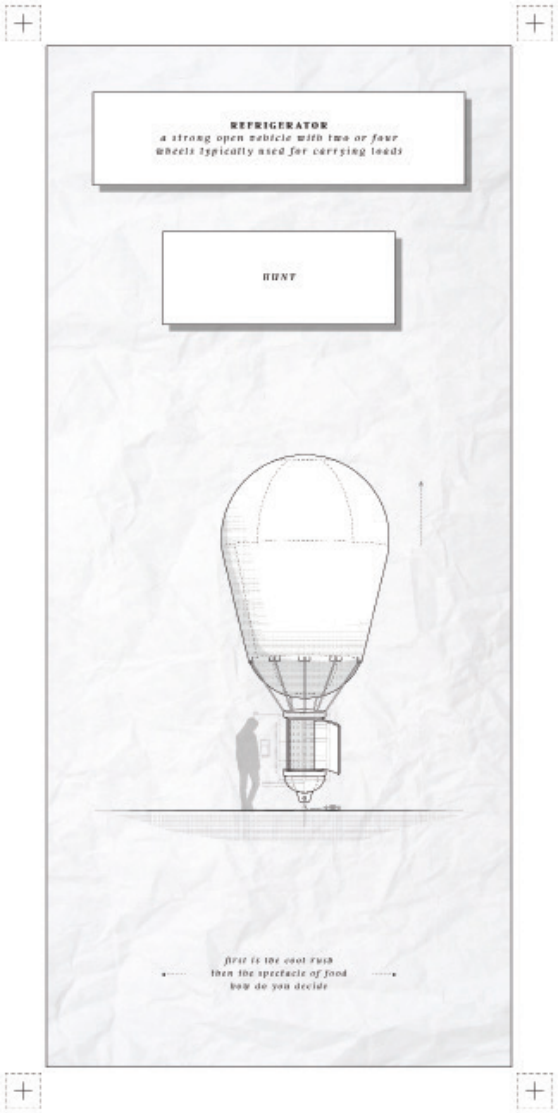


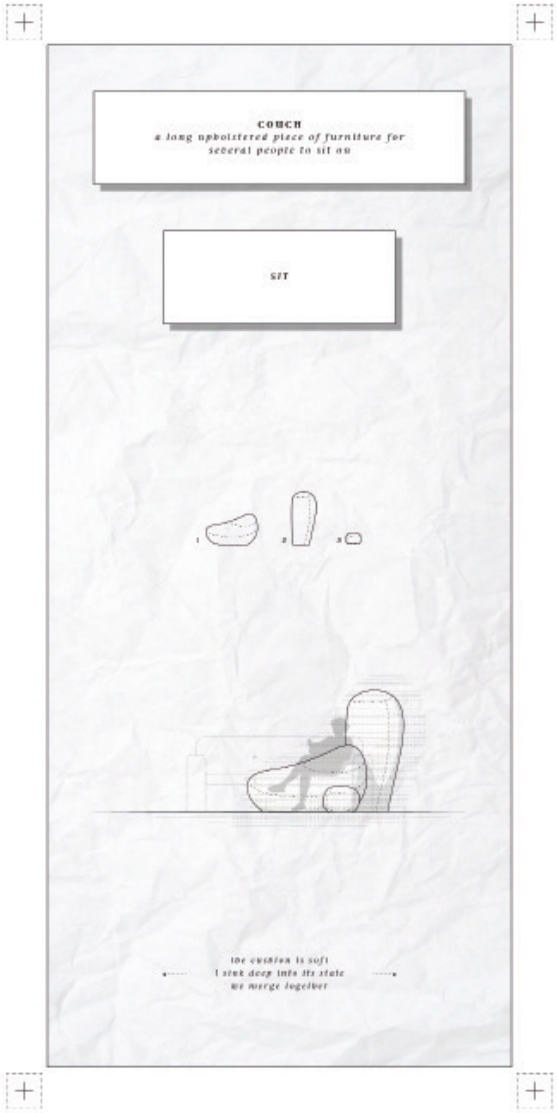
THAT

Implied
choreographies of
spatial interaction
between body
and surface.

THIS

A wooden chair, inviting to the touch, rigidly supporting our bodies.



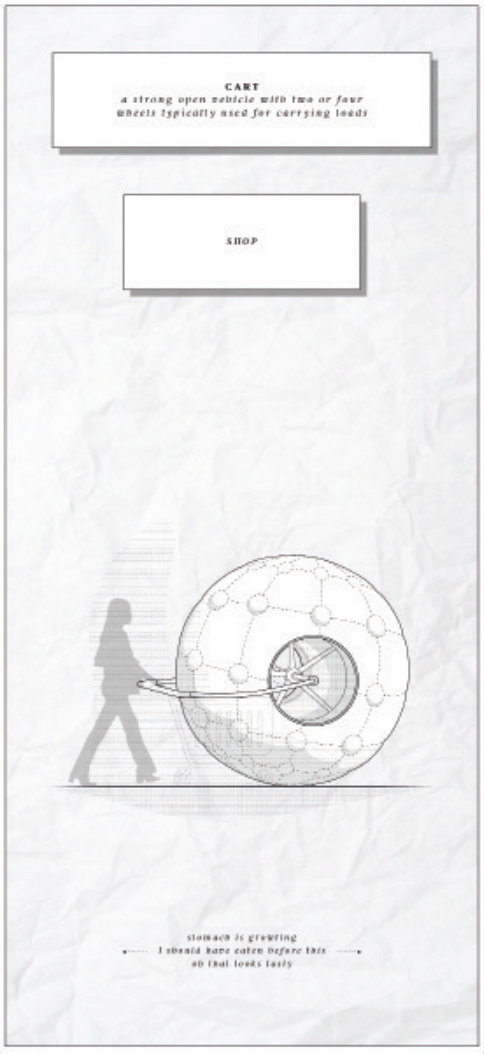


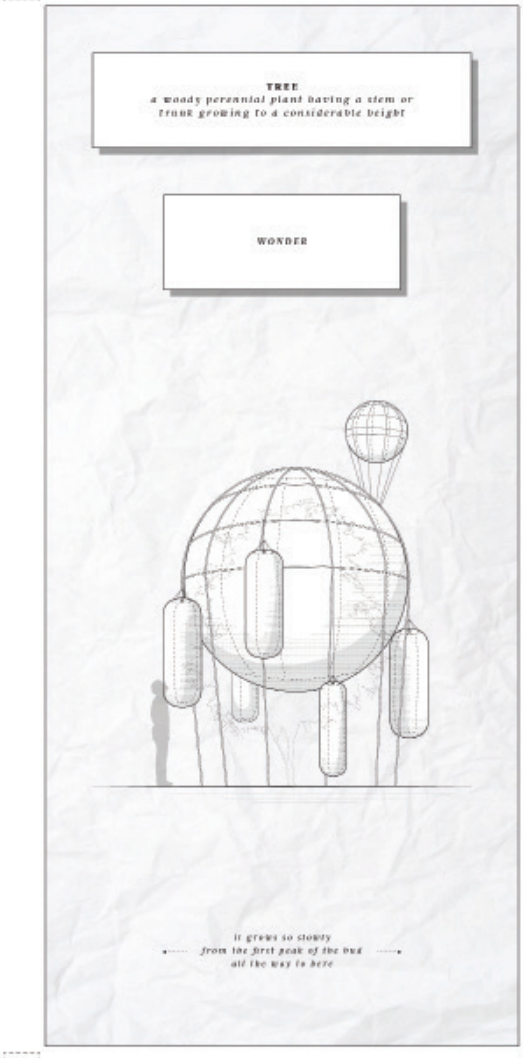
THAT

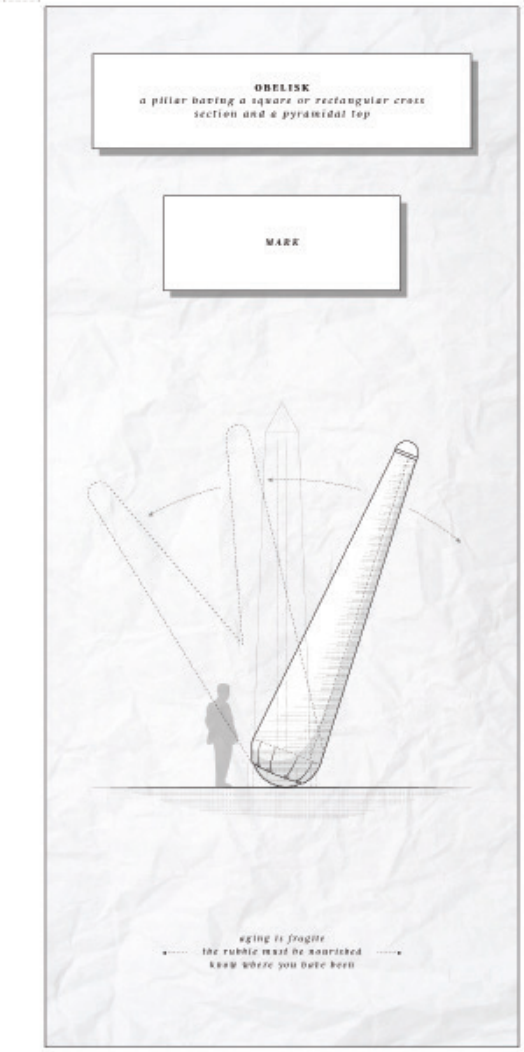
Inflated, bulbous fabric,the uncertainty of support, the comfort of malleability.

THIS

A soft form appears, our hands desire to touch. In the absence of that desire, the image of a handprint lures it in.







THAT

Our feet are buried under a sea of tiny columns. We are uncertain to tread. A set of footprints show us the way.

ABSTRACT

This project is about developing a language and method of translation between music and architecture. The connection between music and architecture has had a long history within the discipline of architecture. Often the translation and connection between architecture and music has been opaque and varied. The project developed around creating a more transparent and systematic approach toward the analysis and translation of music to architecture through digital means.

Synesthesia in Architecture

Olivia Lu-Hill, Anthony Gonzalez, Po-Jen Huang | ASRG

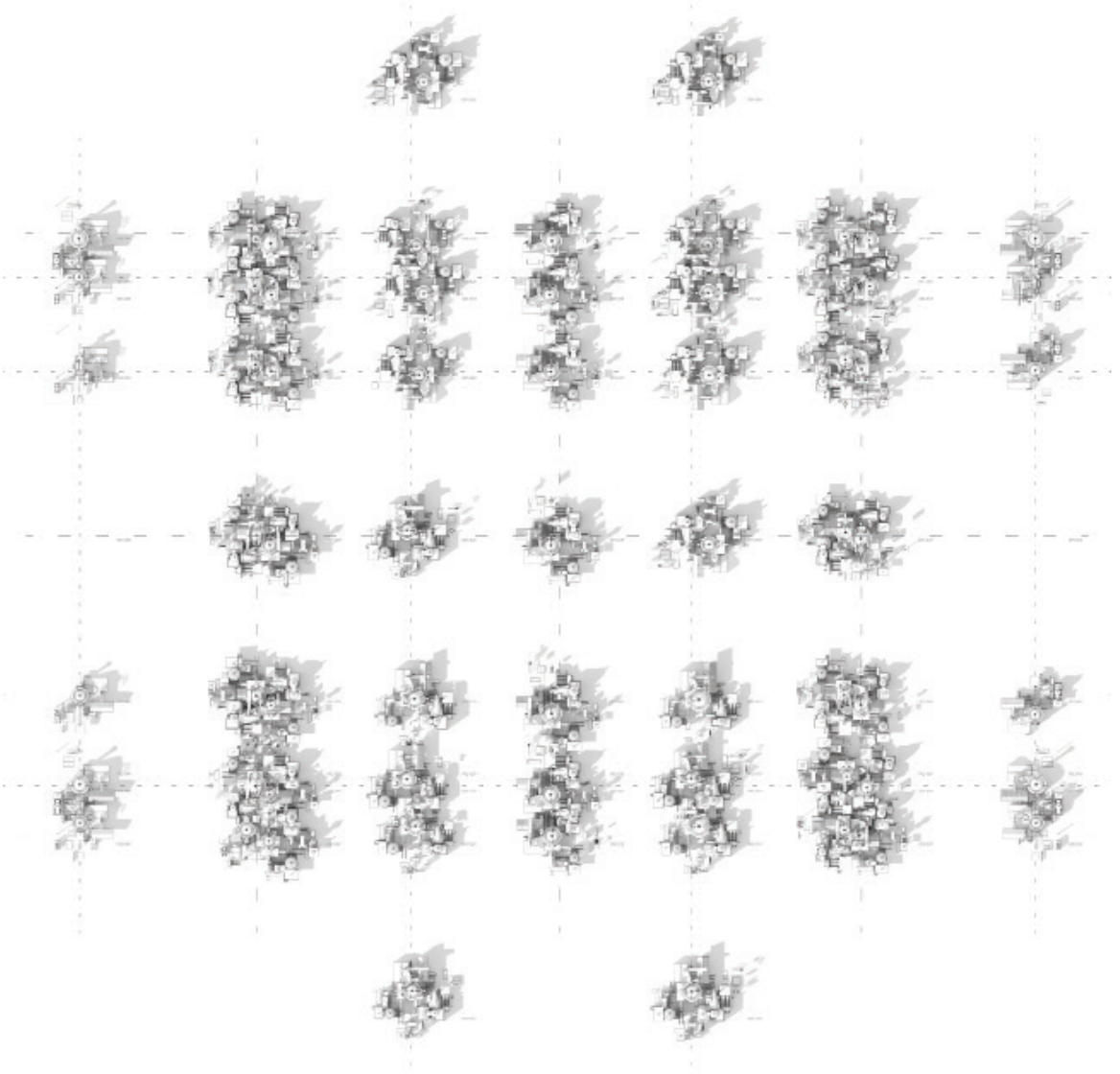
To create a language of translation, the work borrowed elements and abstracted plan diagrams from Durand's *Comparisons Collection and Parallel of Buildings from every Genre, Ancient and Modern.* The architectural elements were bound to sound frequencies, and the abstracted plans to musical tempos.

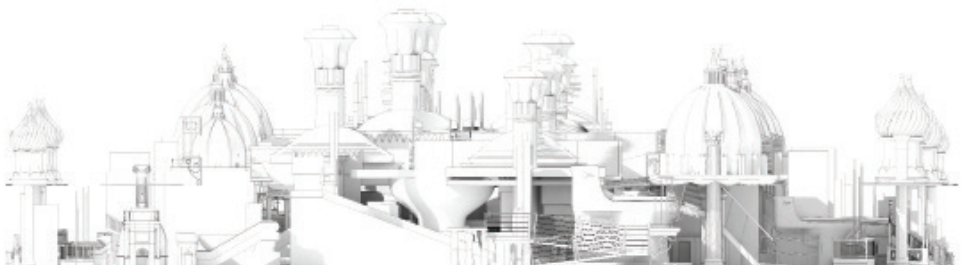
Selected songs were analyzed for tempo in beats per minute (BPM) in the process of translating music to architecture. Each tempo was associated with an abstracted plan diagram, which became the overarching structure of the composition. The sound frequencies for each beat were analyzed and the range of human hearing, 20–20,000 Hz, categorized into six families of architectural elements with eighteen elements each. These elements included basic architectural typologies such as the dome, arch, column, stair, toilet, etc. The elements were scaled depending on the amplitude of their respective sound frequency. Elements from one family were placed into a square grid at designated x, y, z coordinates. Each of the six families were then arranged in a pyramid structure. The method of translation and arranging elements was deployed across all songs, the six families of elements together forming a sample. These samples were placed depending on the overall BPM of a Durand abstracted plan diagram.

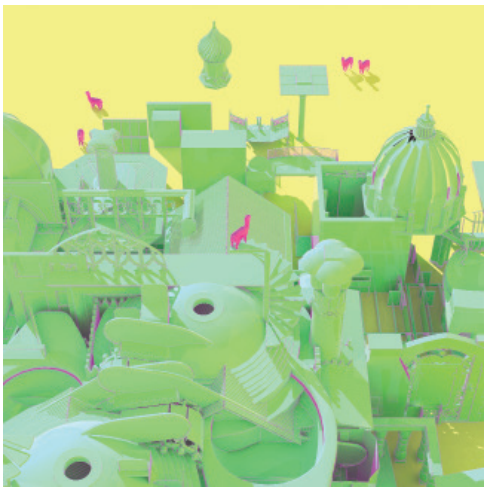
The project revealed various patterns in its process of sound analysis, such as the repetition of common specific sound frequencies that resulted in common architectural elements. At the end the translations were a multitude of collaged elements, eschewing traditional associations with form or function. Additionally, by viewing the translations individually, in video format, the pulsating clusters of elements bring new dynamism and temporality to architectural form. ■

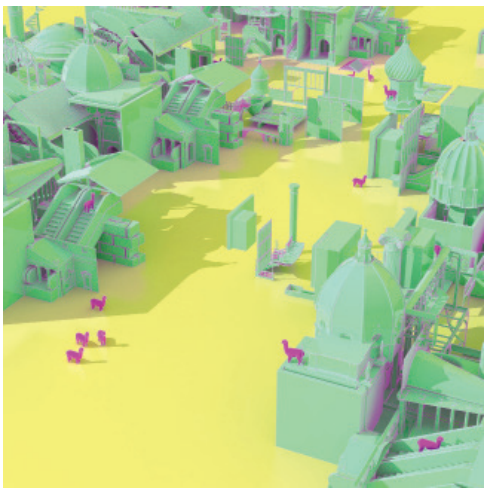
BOWIE

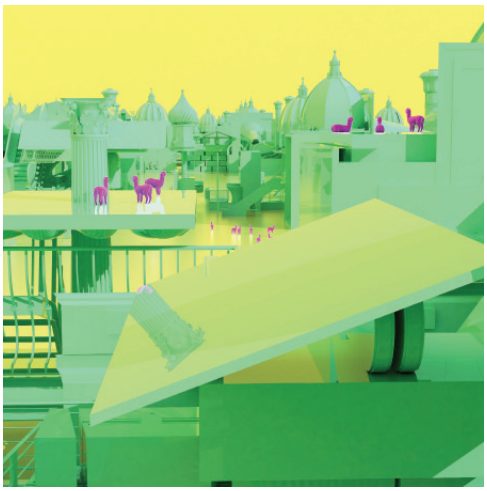
The plan and elevation of David Bowie's *Changes*.









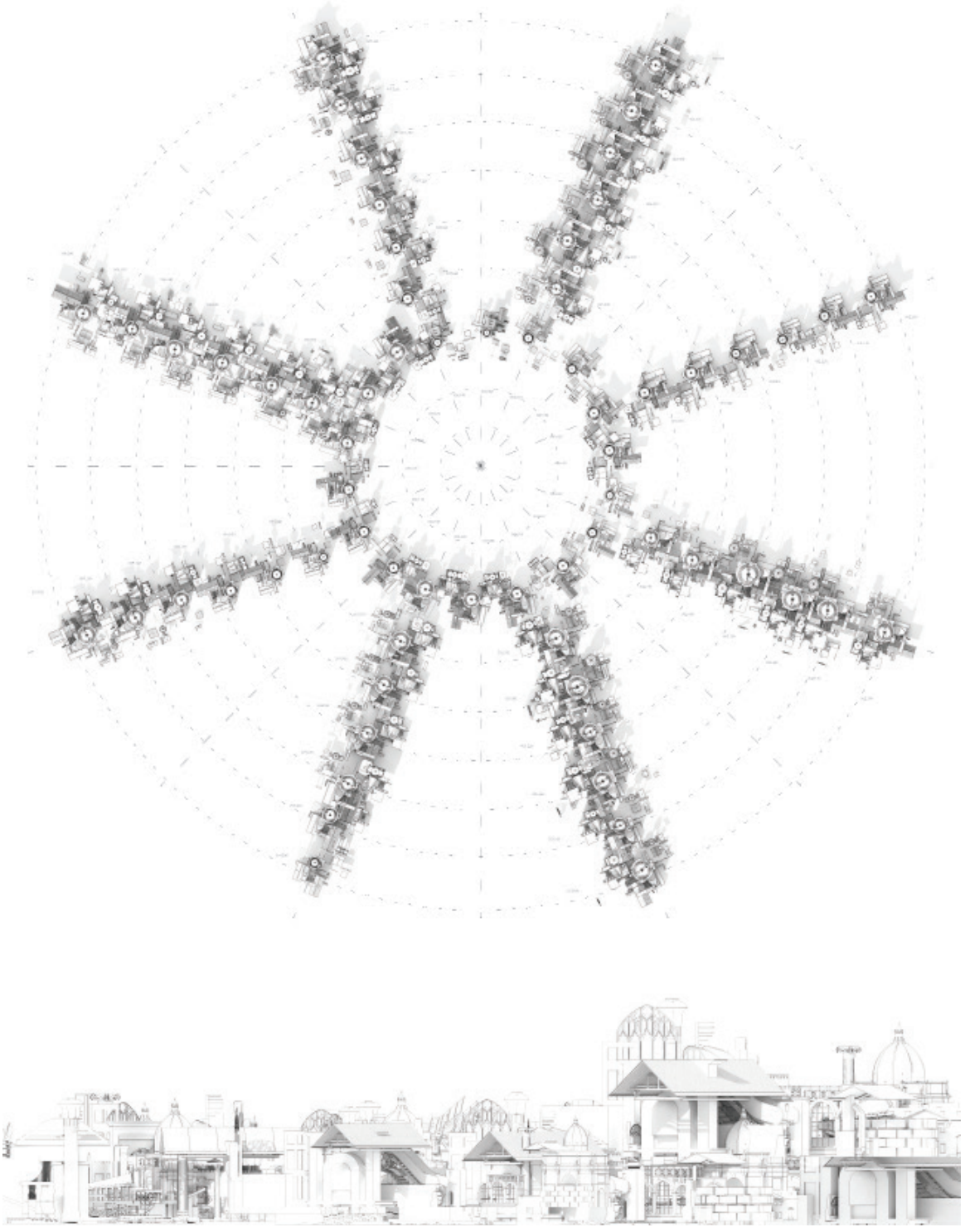


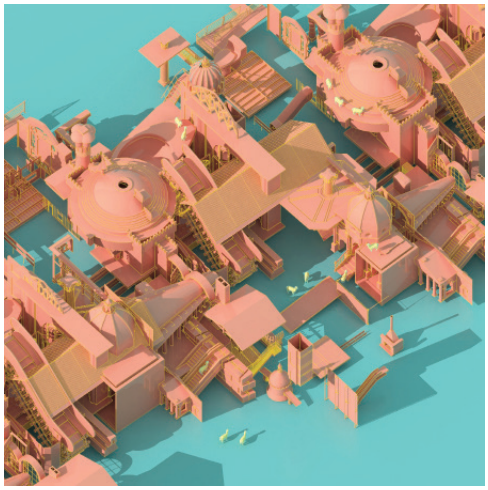
BOWIE

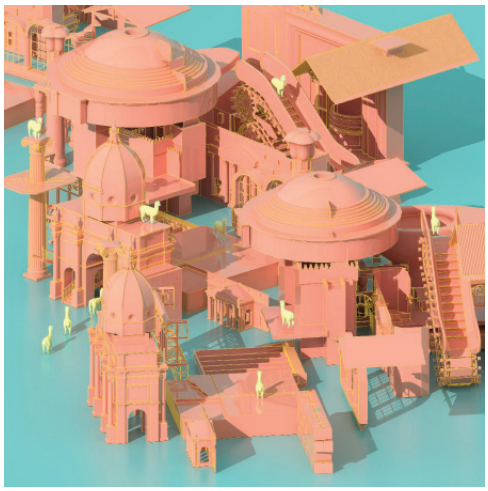
Renderings of the composition of elements produced by David Bowie's *Changes*.

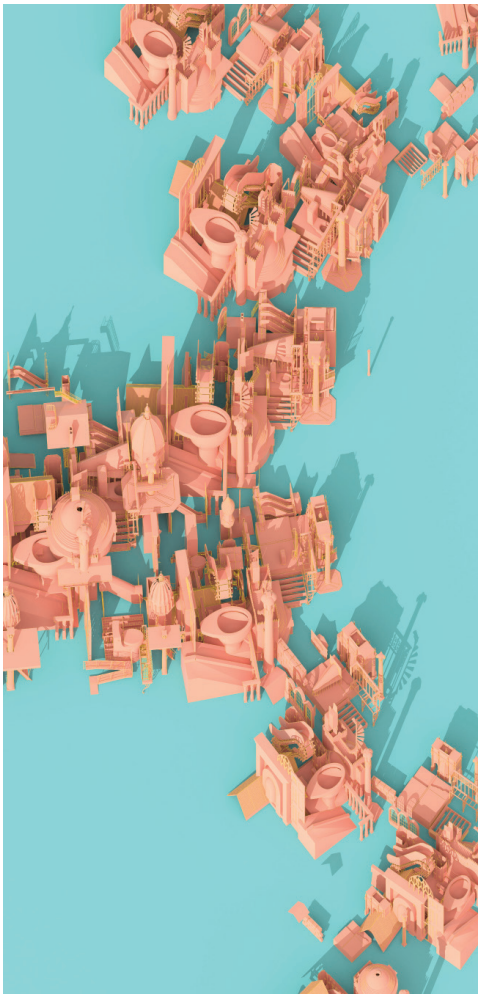
VIVALDI

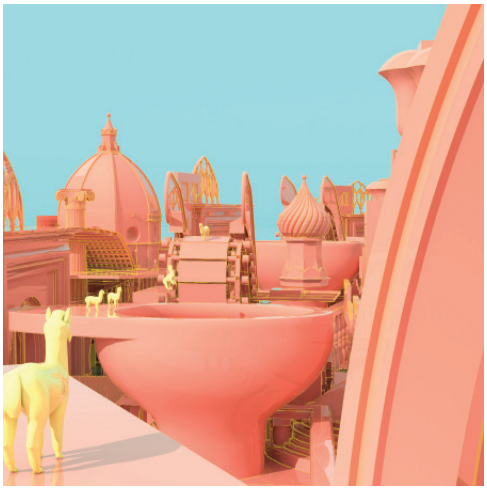
Plan and elevation of Antonio Vivaldi's *Winter*.





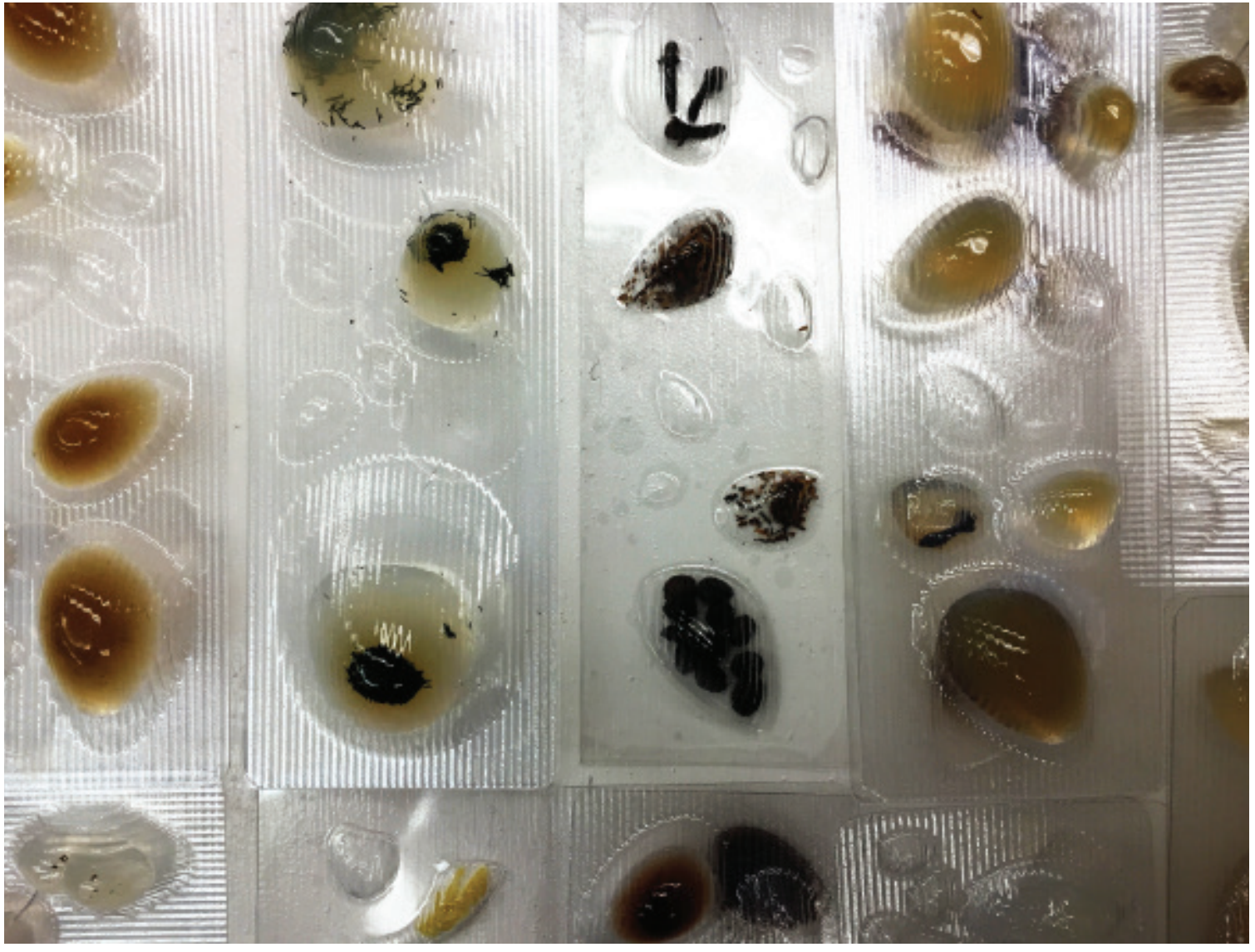






VIVALDI

Renderings of the composition of elements produced by Antonio Vivaldi's *Winter*.



Hyperosmic Space Apparatus

Fauzia Evanindya | Advisor: Robert Adams

This Master of Science Design Health Capstone research examines the presence of smell and artistic culture in spaces for health. It investigates the history of pharmacies and shifts in pharmaceutical practices as a part of the institutionalization of healthcare, and, through experimental form, speculates on the future of multi-sensory environmental stimuli and aesthetic experience. Abandoning the pharmacy's traditional role as the container and delivery vessel for medicine, *Hyperosmic Space Apparatus* encapsulates, carries, and delivers scents with embodied spatial memory. It operates by emitting preserved scent into the air, which is then consumed over time and across space. This work aims to understand how modern pharmaceutical practices and products could potentially recreate history; architectural elements intensify the notion of place and belonging through olfactory sense.

Historically, scent and design were a part of pharmaceutical space. Commodified natural compounds once ruled the world of institutional medicine; today, herbal plants with medicinal application are seen as an alternative to the institutional. This change relates to a historical shift in architectural typology. Apothecary jars, which were crafted as pieces of art and aesthetically organized in shelves, acted as the main element of pharmacy interior design. As medicine evolved, these jars fell out of favor. Extensive use of herbal compounds and apothecary jars continued until the nineteenth century when the business of patent medicine changed the nature of pharmaceutical practices. As use of extracted chemical compounds and drugs isolated from their natural sources increased, pharmacies in the nineteenth century kept medicine in craftless containers hidden from view. Not only did the dignity and artistic culture of pharmaceutical shops degenerate during this time, but smell itself seemed to vanish from space. This project questions the presence of smell and art in the realm of modern pharmaceutical space, considering how a set of experiential scales and varied medicine containers, together with the presence of smell, might intensify spatial design.

In his 1986 manifesto *Everything is Architecture*, Austrian architect Hans Hollein described air as medicine. He discussed using immaterial means, such as smell, to affect environment and experience. He speculated on the possible applications of chemicals and drugs to regulate human body temperature and control biological functions in order to create artificial environments from within the body. His 1967 work *Non-physical Environment* is an environmental comfort kit in the form of a pill.

Svobodair, published in 1971, posits architecture as a mechanism for psychological conditioning, determination of environment, and as a medium of communication.

The research for this work explored the olfactory abilities of a pseudo-medicine to respond to and affect health conditions. Adopting pharmaceutical blister packaging, *Hyperosmic Space Apparatus* uses a conventional method to deliver a non-material, unconventional, entity. Embedding scent as an architectural element within space opened up speculation for use at multiple scales, as an experimental vessel to condition the environment for better health. The blister method is utilized not only because of its ability to seal, preserve, and dose the chemical compounds for delivery, but also act as a means to critically consider shifts in the pharmaceutical industry and the modern healthcare institution.

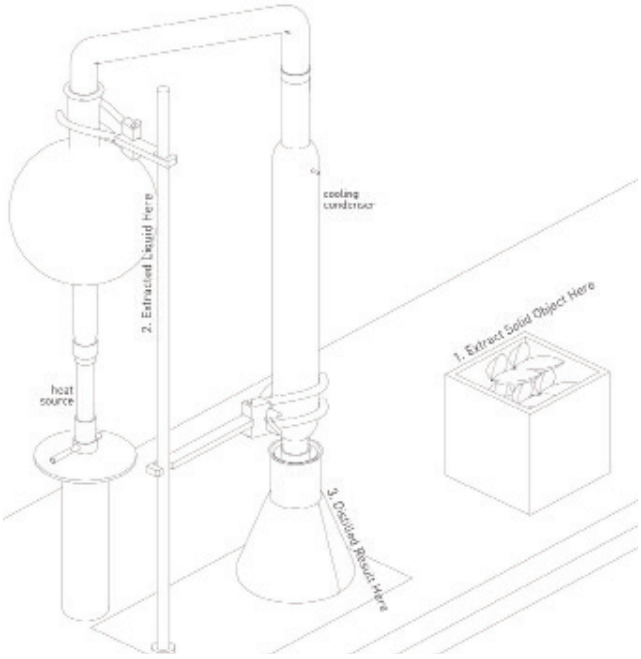
The elements that compose a spatial situation, such as environmental conditions, people, objects, and activity, are extracted and distilled to capture the scent of a place in liquid form. Collections of olfactory memory are refabricated; the smell of your childhood home, your energizing breakfast, your favorite coffee shop—the smells of happiness. The project recreates the smell of a private home by soaking objects from that space together in water: worn clothes, food, and herbs.

Imagining scent flowing in the air, computational fluid dynamics were used to find form. Groups of air pockets and eddies were created with different settings of air velocity in response to a 3D scanned body. The contour and flowlines generated by the software were then taken as baselines for formal iteration. Three notes of scent—Base Note, Middle Note, and Top Note—were used to test the speed of air flow to discover forms relevant for each note.

This research promotes conversations about the similarities between pharmacies and other building typologies, and questions the significance of smell in determining spatial condition. The work imagines a future where air is packaged as scented prescription medicine. ■

THE WHOLE SET OF THE HYPEROSMIC SPACE APPARATUS

CONTOUR LINES FROM FLUID DYNAMIC STUDIES



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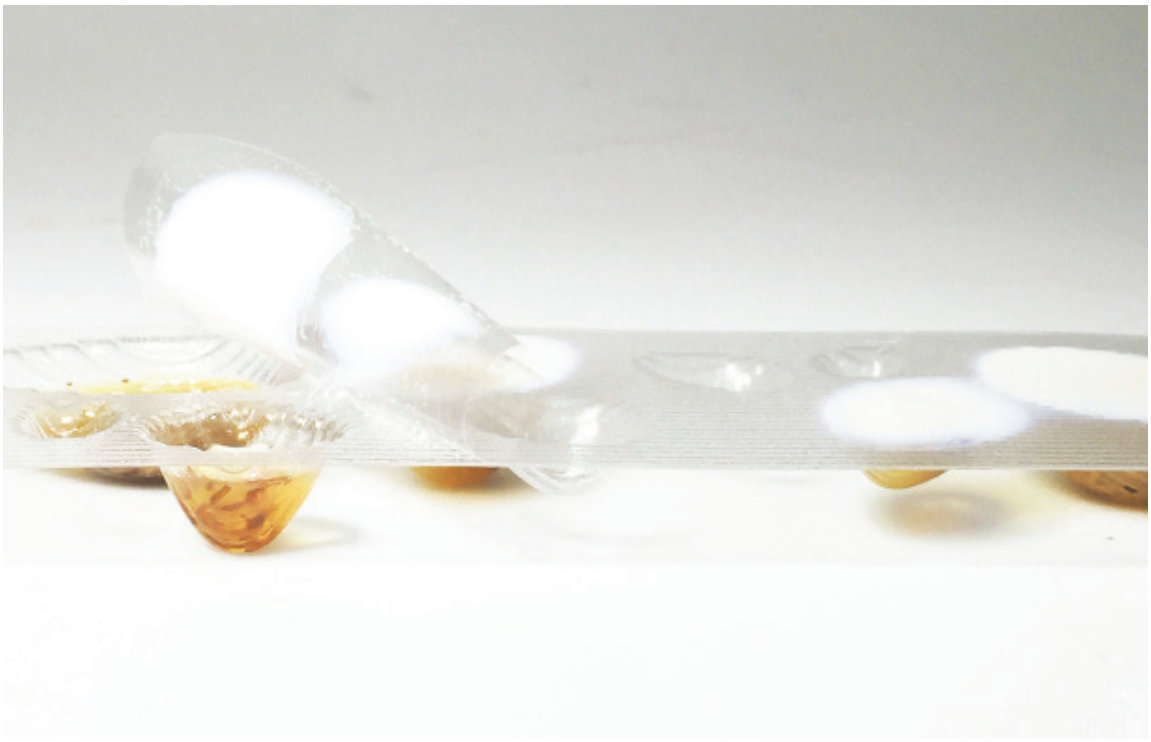
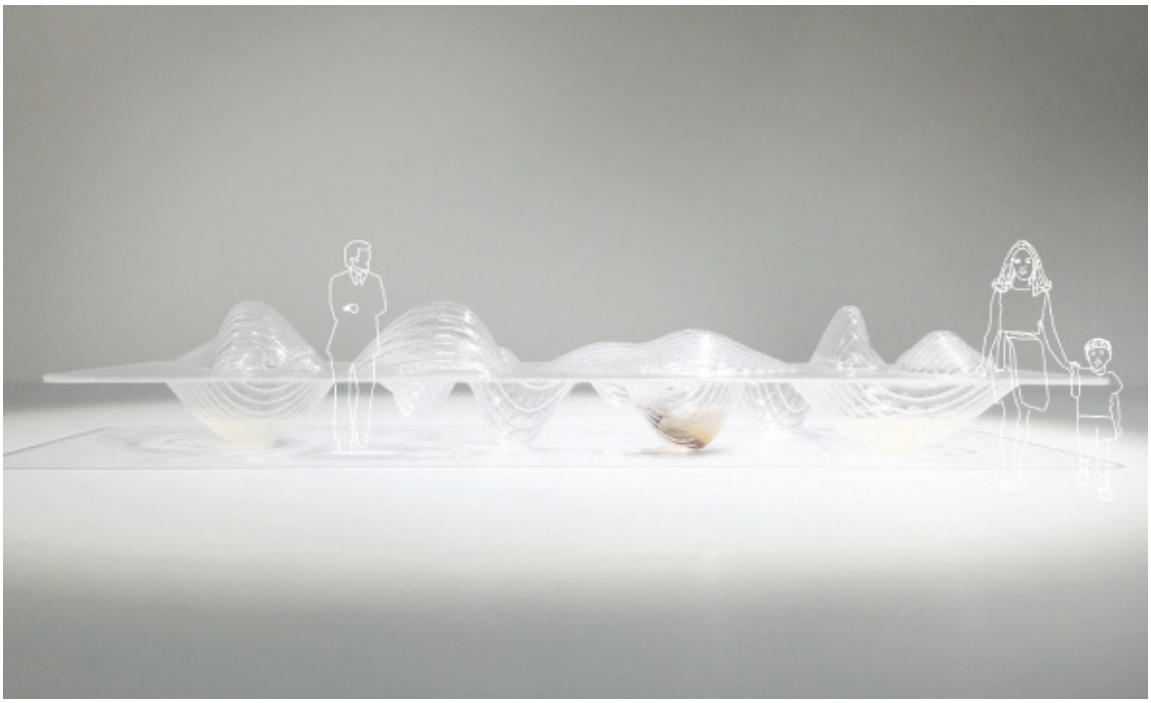




HYPEROSMIC SPACE APPARATUS IN USE

Made of Monsters

MARIO CARPO

Mario Carpo is the Reyner Banham Professor of Architectural History and Theory at the Bartlett School of Architecture at UCL, where his research is focused on a history of the discipline framed around intersections between architecture and media. He is renowned for his award-winning *Architecture in the Age of Printing* (MIT Press, 2001) and his most recent publication, *The Alphabet and the Algorithm* (MIT Press, 2011). Prior to joining the Bartlett, Professor Carpo was the Vincent Scully Visiting Professor of Architectural History at Yale University.

November 29th, 2016
Dimensions connected with Professor Mario Carpo via video chat to discuss disciplinary trends and recent histories. One of several keynote speakers at the October 2016 ACADIA Conference, held at Taubman College on Posthuman Frontiers, Professor Carpo presented to an international audience his theory of the "second digital turn," and its consequences for a traditionally humanist discipline. Our follow-up conversation discussed the cultural and social position of architecture.

Dimensions 30: At the time of your education in the late 1970s, how familiar were you with Manfredo Tafuri, the work of Superstudio, and other postmodern architects that were starting to emerge in Italy?

Mario Carpo: Tafuri was everywhere because he came into our curricula in two ways: through the standard books of architectural history, particularly the classical tradition on which he was working at the time, and modernism. In Florence, we didn't really read textbooks on modernism because we had textbooks from our own professors, who were late modernists with a more straightforward, traditional approach to architecture. But his books on the Renaissance were big and we studied those. The alternative was the radical architecture, from the likes of Architecture Radicale, Superstudio, etc. I was exposed to those people really early on because during my first year one of my first teachers was someone named Gianni Pettena—he was one of the first radicals. He was teaching a first-year optional elective course titled "English Language."

D30: English Language?

MC: Yes, English Language. I went to the first presentation piece of his course. He came to class and said, "This course is called English Language, but don't expect me to teach you English. If you want to learn English, do what I did a couple of years ago; go to America or to England and you will learn it." If you took Pettena's class, he said "I will tell you what I did when I went to America, where I met Smithson and other land artists, and I will tell you about what people today call architecture radicale." I took that class, and it was an interesting introduction to this architecture radicale because basically, Gianni Pettena was talking about himself. In a nutshell, we had this presence of the Architectural Radicale in the school.

We did not know back then that these people would become so famous 30 years, one generation later. That was the point when they had already done most of their own stuff: groups like Archizoom and Superstudio were at the lowest point of their career because they had been marginalized by the establishment. They were not yet historically important and they were no longer doing something creatively important at the time, and we couldn't anticipate that they would become such an important chapter in history only one generation later.

Today, we can tell how historically important they were—but history does not happen in real time. Back then, there were many losing avant-gardes at the time, and nobody could tell which ones would become winners one generation later. Now, these people are traveling around the world telling everyone what they did in 1972—but when they told us in 1976 what they did in 1972, we laughed at them, because back then, they had no perceivable influence.

The real way that everything would change for us was historical postmodernism, which came from Charles Jencks, from Paolo Portoghesi, from Aldo Rossi, from the Presence of the Past Biennale. Nobody could have said back then the Architecture Radicale guys would be in the history books 30 years later. History has already in a sense vindicated them.

D30: How then we should consider our contemporary moment in relation to periods of the past?

MC: The digital turn came in the 1990s and Greg Lynn, Bernard Cache, Lars Spuybroek, and a few other young guys started to do wacky, weird things, and many older professors said "This is ridiculous."

But now we know that these wacky, weird ideas of the mid 1990s were important because they have already changed the course of history. It is true that Greg Lynn in the 1990s used these technologies to make a teapot. I remember when professors one generation older said, "It's a teapot. You're not an architect. You are a teapot maker. Forget about it." He made the teapot, but using the same technology until she died a few months ago, Zaha Hadid built skyscrapers—these are real buildings, they stand up, people use them, and people pay for them. So when people told them, "Forget about it," they were wrong, because this technology has changed architecture, as much as reinforced concrete did at the beginning of the twentieth century.

If you look at what is happening today, my argument is that there is now a second digital turn happening, which anticipates many streams, tendencies, anticipations, and wacky, weird ideas that are proliferating in schools right now. But how do you pick a winner? If you pick a winner, you eliminate many losers. Sometimes we get it right, but more often, we don't. I have my theories and ideas, but some of the ideas that are being hatched and developed in schools right now, some of these ideas have legs. They are not as important now as parametrics were in the 1990s, but only time will tell, right?

D30: Looking at the first digital turn and the works of Greg Lynn, along with your writings on the Albertian paradigm and the notion of the architect as an author, could you describe how the authorship of the architect has shifted during the first digital turn and might shift again in the second?

MC: Ah! That's a good question. The idea of the architect, which was still dominant when I was starting architecture, is that in the Albertian tradition you will not make physical stuff. You have ideas. In this tradition, the architect as a humanist author doesn't make a physical building; he makes drawings. We give these drawings to workers and they will actually make the physical building. A clear-cut firewall is separating our drawings from the buildings which we conceive, but we do not make.

This separation no longer applies because what you make on the screen, you can print right away. So when Greg made this famous teapot, he conceived it, he visualized it on a screen and he actually made it. Of course, the argument is you cannot print out a 3D building in your own workshop. But the clear-cut separation between the invention—which is what we did traditionally—and the material and construction no longer applies because it's a permanent feedback loop between the designer, the contractors, and the makers. We are increasingly going back like a medieval master builder. We are inventing, conceiving, and making at the same time. We are being brought back into the physical process and the physical making.

Another point is that so much of digital technology is participatory, interactive, and collaborative that the idea that you are the only owner of an intellectual idea no longer applies. Think of the difference between a Wikipedia article and an article you might write for *Encyclopedia Britannica*. If you get a commission to write an article for *Encyclopedia Britannica*, you know what everyone will read because your name is at the end—you sign it, nobody will change it, it's your responsibility as an author. If you make a mistake, people will blame you for it, and that's the way print works. But if you write an entry on Wikipedia, you write it today, and tonight someone else will edit it, and tomorrow someone else will. You can change it again, but you will never have the last word because there is always someone who can edit it after you. The printed edition of *Encyclopedia Britannica* went out of business three years ago because no one was buying it anymore. So you already have a loser and the winner—Wikipedia has won and *Encyclopedia Britannica* has lost. It's unconceivable, yet it happened. The idea that you put your signature on something, and that you have intellectual ownership of whatever that drawing will become is still implied in our profession, but it will become more and more unsustainable because digital technologies do not work that way.

D30: If there is a third digital turn in the future, how would you identify that in relation to humanism today or the second digital turn?

MC: Well, the scientific, cultural, technical paradigm of modernity is being phased out. Humanism is going. All that was the foundation of the twentieth century is gone. The first digital turn eliminated the technical foundation of the industrial revolution—mass production, standardization—and the second digital turn is phasing out the cultural foundation of the scientific revolution. I have no idea what the third digital turn will do. If it happens, I will have been dead for 20 years. That's for your generation.

D30: Do you think that architecture is always beholden to the new technologies, or do you think it has the power to counter technological forces? If the digital means a loss of humanism, can architects still be humanists?

MC: The architect's relationship with technology is not inevitable—it ebbs and flows like a tide. When technology is new and exciting, architects have to do something with it. But there are times when the technology is boring and it doesn't change for a long time, so architects don't give a damn. When I started studying architecture, all of the technology of building was 50 years old—it was dead as a doornail, which is why postmodernism came. Postmodernism was a new set of fresh, revolutionary ideas which were either not interested in technology at all or had a stance against it. And then something happened: a new technology came, which was as exciting as the industrial revolution had been a long time before. So at some point in the late 1980s and the early 1990s when computers were changing the world again, architects again started to be interested in technology because it is something they could work with.

Think of modernism in the 1920s: Le Corbusier, Gropius, Mies, and the Bauhaus were so excited about technology

"Monsters happen when technologies win and everyone jumps in..."

because there was a huge wave of new technologies which were changing everything. Architects for half a century had not wanted to listen to that. But Le Corbusier in France in the 1920s said, "Mass production and standardization are a revolution, but architecture is the only area where things are not changing. Mass production is changing the way we make automobiles—why should we not take the same technologies to making buildings?" That was a simple and clear idea in the mid-1920s, but at the time everyone said, "That's absurd. You should never mass produce buildings in the way we can mass produce automobiles or refrigerators." But they were right: in the 1950s, and 1960s, and 1970s, we started to mass produce buildings just like automobiles or refrigerators.

We later realized that if you make all buildings that way, architecture becomes very boring, but when Le Corbusier said it, it was revolutionary and new. His argument was simple; he said, "Automobiles." If you make automobiles as craft in an artisanal way, they are expensive. But when the automobile has been mass produced and standardized, like the Model T Ford, it becomes cheap, good, and reliable, and everyone can have one. So he said, "Should we not do the same with buildings? Buildings are so expensive because we make them by hand. Let's industrialize, let's bring the new technologies in, let's standardize, let's mass produce and we can make solid, standardized, affordable buildings for everyone."

But in the 1960s and 1970s, it became mainstream, which is why most people said, "This is boring. We should do something else." And then postmodernism came, because if you make every building like a washing machine or like an automobile, every town is boring. Postmodernism was a necessary reaction. But when the digital came, the argument was in a sense similar. People said, "Digital technologies are changing the world, just like industrial technologies in the industrial revolution changed the world one century ago. Should we not in architecture try to do something with it?" Some started to do that, and some said, "Forget about it." Le Corbusier was right in the 1920s, but was vindicated in the 1960s. Greg Lynn, Bernard Cache and all these young guys were right in the 1990s, but since our historical cycles work faster now, they didn't have to wait for another century to see that they were right; they have already been proven out. It's already happening.

D30: Do you think that society is perhaps too quick to anticipate that in the digital age the design of things will change the world? Or that the association of the digital with progress is problematic?

MC: It is problematic because the adoption of every new technology brings about monsters—that always happens. Le Corbusier in the 1920s said, "We should adopt industrial mass production." Everyone laughed and said, "Ha, ha, ha. That's impossible." But then the Great Depression and war started to change mainstream architecture. And in the 1960s, the ideas of mass production started to be applied globally and everyone said, "That's not what we wanted. It's a monster."

Look at what Le Corbusier did. When everyone in the 1960s was building in the style he had anticipated in the 1920s, he was doing something completely different! He was building Ronchamp and La Tourette. He was building industrial, but organic-looking stuff. In a sense, he had already moved on because he could see the monster created by the many Dr. Frankensteins of his own ideas in the 1920s. But he was not fooled by his own ideas—he moved on and when everyone was imitating modernism in the 1960s, Le Corbusier was not building in a modernist way. Before he died, he invented brutalism, and many other things. Monsters happen when technologies win and everyone jumps in and they become mainstream. We as architects should do something better. We should dominate the monster.

That always happens. If everyone around the world was building in the way Zaha Hadid was building, the world would be made of monsters. Here's a famous parallel: the ideas of the 1920s were unbuildable and impractical in the 1920s. But have a look at the Seagram building: with the European ideas of the 1920s and the American technologies of the 1950s, those dreams could become a reality. Mies van der Rohe built a masterpiece, but imagine if on Park Avenue every building is a Seagram building. It would no longer be a dream; it would become a nightmare, right? If you look at a building by Zaha Hadid, it's wonderful. But imagine that you live in a city where every building is a Zaha Hadid skyscraper; it's no longer a dream, it becomes a nightmare. It's the same parallel.

If you anticipate the technology and you make a demonstration, you are a genius, like Mies van der Rohe or Zaha Hadid. But if you follow and replicate the same model everywhere, you are a fool. That is what we should not do.

D30: You have talked about how the second digital turn enabled the mass customization of architecture and of production in general, moving beyond the modernist standardization monster that you're talking about. If mass customization is today's "monster," is there an appropriate architecture response or is it too soon to tell?

MC: Mass customization is as pervasive, ubiquitous, and inevitable today as mass production was during the industrial revolution. That is simply the way digital technologies work, there is no way around it. So what we have to do is find a smart way to dominate it, to exploit it, to remain architects. Industrial technologies need to concentrate in big factories and mass produce many identical copies to make them cheap; that's the way the industrial revolution works.

Architects were late in understanding how to deal with this, but when they did, they came up with some good ideas. In the digital, we were smarter and faster. But mass customization is a given of the digital world. Everything that is digitally designed, fabricated, conceived, and developed has to some extent comply with the logic of digital mass customization. We have to know how it works and we have to know how to use it for our own architectural purposes.

We have to remain architects, in a sense. But it's inevitable, it's there and there is no way around it, just like there was no way around industrial mass production 100 years ago. You can play the policy of a—what's the name of the animal that puts his head under the sand not to see what's happening…

D30: An ostrich?

MC: Yes. You can put it that way and put your head under the sand like an ostrich and say, "That's not going to happen." But it still happens, only you will not look and you will not see it, but it will happen—we shouldn't do that. We should be alert to what's going on. We should understand the logic of mass customization, because if we do not play that game, someone else will. Buildings will be built, even if we don't build them that way, because that's the inevitable logic of today's technology. Someone else will build using those tools because they have the most practical, cost-effective, inevitable ways to build today.

D30: You mentioned Corbusier and how he was pushing architecture in reaction to his own modernist designs of the past. Corbusier infamously talked about architecture and revolution. Can you clarify the difference between a revolution and a turn as in your digital turn, and how a leader in architecture is responsible for that change?

MC: Which kind of a revolution are you talking about? A revolution in architecture or a revolution in society?

D30: Maybe that's the question. Are architects only able to enable aesthetic revolutions, or can they have a specific role in political revolution and social revolution?

MC: That's something which is beyond the gambit of the discipline. I mean, we are all citizens and we have a political life and we bring these ideas into design as architects, but that is the case in every profession. If you are a surgeon and you have some political ideas, you will practice surgery in a certain way. If you are a baker and you have certain political ideas, you will bake in a certain way. An architect is not more influential or less influential than any other job you may choose. We will bring our political ideas to the world through the craft or the profession or the jobs we have chosen. I am not certain that architecture is necessarily more determinant than a baker's craft or a surgeon's skills.

"… find a smart way to dominate it, to exploit it, to remain architects."

D30: Does your theory have a political position to it?

MC: Well, if you look at this digital turn, it evidently has vast social and political implications. If you understand how the tools are working and how they are changing the profession of the architect, we in architecture have a privileged vantage point because we see these technologies at work sooner than many other professions, which means we can understand what kind of change we are bringing to

our work in general before other professions do. So in a sense, yes, we have some additional responsibility because we are early adopters of digital technologies. This is some additional responsibility we have not as architects, but as early adopters of new technology, because we can probably understand what is at stake better than other professions can. Politicians, for example, do not have a clue. Engineers do not have a clue. Sociologists do not have a clue. We as designers do have a clue because we are using these technologies sooner and more extensively than any other profession, so we may have better insight into what is at stake for society.

But this is not something which concerns us exclusively as architects—this concerns us as citizens, too. So this concerns not what we do when we are in a studio. This concerns what we do when we vote. And you did vote a couple of weeks ago, right?

Let me make a bold extrapolation. One thing that is happening—and this is not a political dispute or a technical remark—one of the consequences of the ways we are using these digital tools is that expertise is less relevant than it used to be. For example, using some software for structural optimization, I know that many of my students do not need to consult an engineer anymore because they use optimization software, such as Galapagos. So my students tell me, "You see? We don't need engineering anymore." It's true, though I told that to a friend of mine who is an engineer who told me, "Yes, that is true, but don't laugh because next in line is you."

If every expertise becomes unnecessary, if in every field we can just test the wisdom of crowds and do a simulation, then some people are arguing that even political expertise, political representation, political negotiation, political dialogue, political argument, political explanation are no longer necessary—you just make a tweet and people will say yes or no. A few years ago, people said, "It's impossible. It's not going to happen." It is happening.

D30: Would you say that digital technology fosters a more democratic and inclusive means of social interaction, or are social media like twitter a mutated form of democratic discourse?

MC: It is a sort of mutated form of democracy because the democracy we knew was based on political representation. In this kind of political representation, which is based on expertise, you elect experts and you delegate decisions to them and you trust them to make decisions based on facts, and figures, and information that you as a citizen do not have the time to study, which is why you elected and pay them to make informed decisions that you cannot make.

If you replace that with a tweet, then based on 140 characters, you vote yes or no—this is not democracy as we once knew it. Democracy in the western tradition was based on speech and argument, but also on expertise. Now in Europe, people tell us, "You elect these bureaucrats and they make decisions for you." And you say, "Yes, this is precisely why I elect them, because I do not have the time to study 2,000- page files to see if we need this new nuclear power station, because it's not my job and I elect them to make this decision for me." But today, people tell us this kind of representation is not up to date because based on a tweet, we can immediately say yes or no. But in the last eight months, this has already brought about very weird events.

D30: If architects are like engineers at this point where their expertise is being challenged or lost, what is their position as leaders in this new form of democracy? How do architects engage, what is their role?

MC: You know what? I have a very traditional answer: just do our job as best as we can. When we go and vote, that's a different story, but that is not something we study in architecture schools. Our main contribution is that we chose to be architects—we didn't choose to study political sciences, we are not elected representatives, and we are not sociologists. Our contribution through the profession we have chosen is to do our job as best we can. Then, of course, we vote as everyone else does. That's another story. ■

CUL-DE-SAC NEIGHBORHOOD PLANS

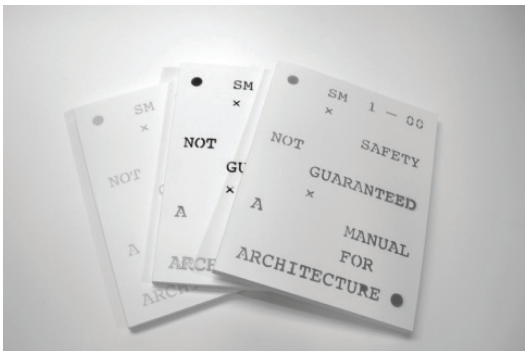
Safety Not Guaranteed

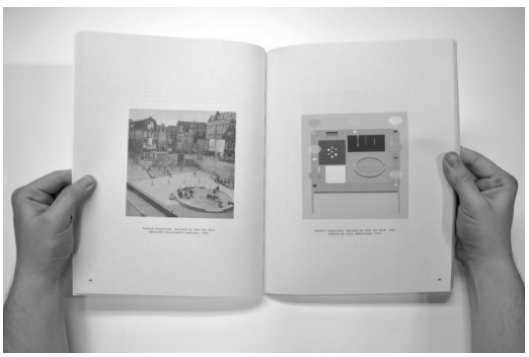
Ashley Bigham | 2015–16 Walter B. Sanders Fellow

Architecture is inseparable from defense. At its most primitive, architecture is defense against an environment. For hundreds of years, defensive civic architecture for wealthy sovereigns drove the discipline through the design and construction of countless fortresses, castles, palaces, villas, and city walls. The design and construction of these defense systems were favored topics of early architectural treatises. Thus, from its most primitive and revered "origins," architecture was rehearsed in environments of conflict. The lineage of architecture's defense history is clear. We can trace the relationship between architects and military engineers in many surviving treatises—including those of Vitruvius, Palladio, and Violett-le-Duc—in which architects set forth guidelines for fortification design. In these and other texts, the topic of defense architecture was intrinsically tied to issues of representation. It was only through representation that architects were first able to map, project, and understand their enemy's movements and constructions, and thus, create counter-moves.

As an alternative to the term "defense architecture," which typically refers to forms and types (fortresses, citadels, bastions, city walls), this project proposes the idea of an architecture of defense. An architecture of defense sees all of architecture as a reaction to some measure of paranoia. It is possible that an architecture of defense runs so deep within the genetics of the discipline that it is the silent companion of contemporary architecture; it is the water in which we are swimming. Based on historical research on the role of architects in the formation of defense typologies, this project speculates on the role that technology, surveillance, and fear continue to play in creating even more extreme new typologies of defense, including conditions latent in the mundane neighborhoods of today's suburbia. It studies the built environment to recognize measures and methods used to subdue those fears. This work highlights the tendencies already found in the discipline of architecture that suggest possible futures based on an existing culture of defense.

This project uses the American suburb as both a typology for study and a testing ground upon which to project future architectural possibilities. American suburbs straddle a unique space in the discipline of architecture. While many Americans see these enclaves as the default or even ideal way of living, suburbs or gated communities are often ignored by architects. The ubiquitous nature of the spaces leaves little room for imagination or provocation. It is for this very reason that this project sought to tackle the American suburb as a site, to mine the generic typologies of suburbia to its advantage. In addition to observing the defensive stances of individual houses, gates and circular cul-de-sacs, suburbs offer specific examples of contemporary fortification. Residents in suburbs clearly mark their territory with fences, often battling with neighbors over inches. Front porches have been replaced with backyard decks which offer increased privacy and a socially accepted method of interacting with (or avoiding) neighbors. Large gated communities host a network of distributed centers—club houses, golf courses or swimming pools—and clearly defined but physically weak periphery boundaries, such as gate houses, fences and security checkpoints.





A MANUAL FOR ARCHITECTURE

Representations of battle, whether in the form of paintings, photographs or as digital images, are used to present what was previously only an imagined territory or hidden sphere of conflict. Contemporary images of battle disseminated instantaneously through television or computer screens connect the viewer with worlds unknown, with new experiences and conflicting emotions. The viewer, often consuming images of battle from within their protected domestic sphere, is challenged to quantify or "make sense" of intense or alarming imagery. The collision of the domestic sphere and the conflict arena through the mediums of television or internet streams is possibly the defining image of our generation's ability to compartmentalize and visualize international conflicts in real-time, nestled between our domestic objects, in our "safe and secure" neighborhoods. It is perhaps no surprise that the inundation of media narratives surrounding terrorism and global conflicts has moved the culture, and architecture along with it, into the realm of domestic fortification.

Our new domestic, the space between the literal and digital trenches, has been mapped, viewed, observed, and heard by a variety of entities before we arrive on the scene. It is possible that in this new landscape, where even the swing in our backyard has been LIDAR scanned by Google Earth, that hiding in plain sight becomes our greatest counter-move. Obfuscation and its family of camouflaged tactics is the greatest opportunity for defense. As writer Walter Kirn suggests, "You've got two options when you find out you are under surveillance. And only two. One is hide and the other is perform. We've picked perform." Perhaps rather than concealment, which seems nearly impossible today, we have opted to provide false narratives, misunderstandings, ambiguous communications in order to retain a level of privacy or "inner self."

Safety Not Guaranteed took the form of three architectural models which drew specific inspiration in content and representation from historic military precedents, exploring the interplay between the infrastructure of neighborhoods and domestic interiority. This project misreads precedents of contemporary types and tendencies, recasting them as defensive features in a speculation that oscillates between possible pasts and likely futures. The goal of this design project was to draw formal inspiration from historical typologies, but to also consider the design of fortifications as a series of strategies, formulas, and relationships which are repeated throughout the discipline, independent of era.

Subverting the hidden forces at work in suburbia may reveal the deep paranoia that shapes our built environment and provide hopeful solutions for the future. While this design project is an exploration in the formal logics of suburban space and defensive tactics, this is not a design proposal, but is rather a canary in the coal mine. It is better to see the worst future and rejoice in its absence, than to wish longingly for another present. Proceed with caution. Your safety is not guaranteed. ■

SAND TABLE

CIRCLE PANORAMA

A VERTICAL PANORAMA

THE RELATIVE SIZE OF THINGS 01

THE RELATIVE SIZE OF THINGS 02

Now What?

David Eskenazi | 2015–16 Willard A. Oberdick Fellow

The fellowship is over, the attention is gone, and the training wheels are off. Now the Fellow transforms into… what, exactly? Each year it seems that new audiences are constructed and previous ones evaporate out of disinterest. Classes are taught, the show opens, the lecture is held, and finally, the essay is published. The bench is replenished and everyone moves on. For the Fellow, the undeniable question at the end of the year remains "now what?"

Wavering between a publicly viewed professional rung on the ladder and a personal platform to work out some ideas in solitude, it's difficult for the Fellow to know what to make of the fellowship year. Was it a one off, or the beginning of something longer? Maybe a conclusion should be drawn—about the kind of practice that will emerge, about the kinds of research to work on, or about the pedagogy that might be established in the coming years. Maybe it's more about what kind of visiting ideas arrive in an unfamiliar school, and whether anyone enjoys them. Some will judge if the work was obvious, applicable, influential, personal, labor intensive, risky, constructive, spoke to the right audiences, good looking, new. Maybe it's simply about making mistakes with known things, like moving blindly into the darkness and accidentally stumbling into the future. Whatever the case, it's likely that we would associate the fellowship with terms like first, new, or origin, rather than mature, accomplished, or body of work. And so the terminus of the fellowship begs for a pivot in some direction towards the midriff of an idea—the hardest of all definable points.

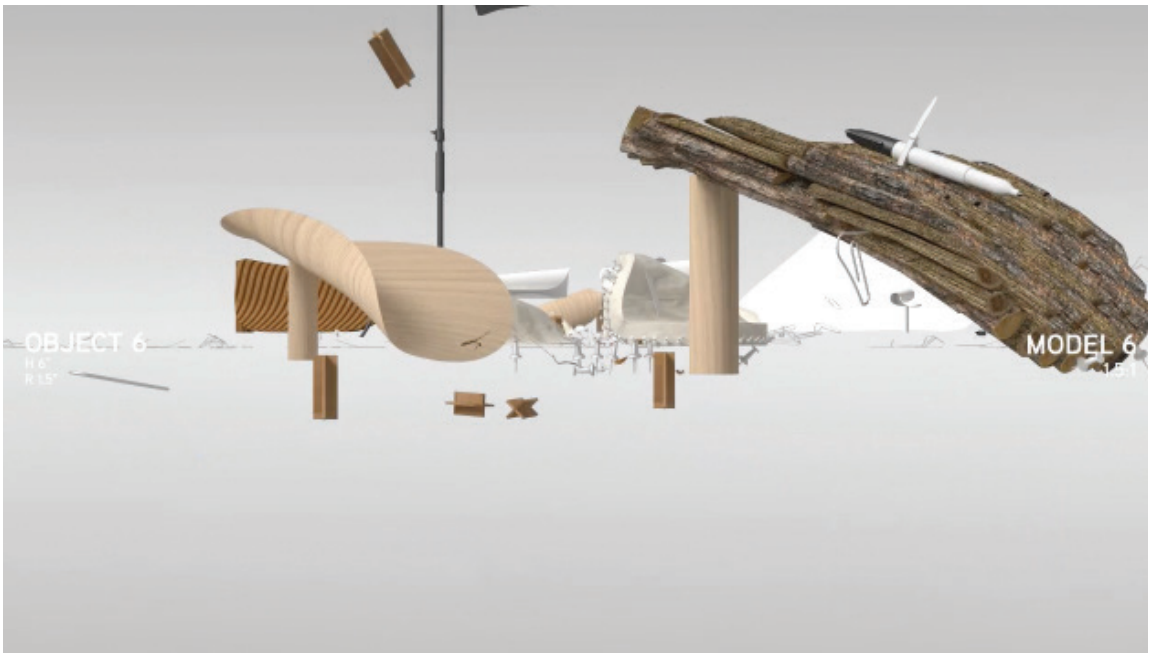
Then it must seem obvious that to answer "now what?" probably means to look forward rather than to evaluate the past. Previous work does not indicate what is to come, which makes it tough to know what to do next. Lots of things are possible, lots of things seem interesting, and lots of things seem cliché. While the aim of the fellowship is to find something to work on, its conceit is the vague "after," that promises nothing certain.

The value of architectural work is the persistent question for each generation of architects and architecture's interested parties. The stories told by architects, the ones rewritten by critics, and the ones desired by audiences are, in a funny way, their own form of creative work. On one hand is the work itself and on the other is the discourse about the explanations, the excuses, the theories, and the arguments. The kind of rhetoric an artist chooses to surround their work might be more important than the work itself, depending on who you ask. Some will say arguments influence people, some will say the work will do that on its own. Perhaps one way to anticipate what's next is to outline the rhetoric a priori to the work itself, as a kind of template for things to come. It would anticipate value, creative outlines, working methods, and aspirations. It's not an argument about forms of attention or about aesthetic techniques. Instead it would be a proposal for how to develop a practice, post-fellowship. It's personal, it's dogmatic, it's aesthetic, and now it's public. Maybe it'll be useful, but it's uncertain. So here it is. ■

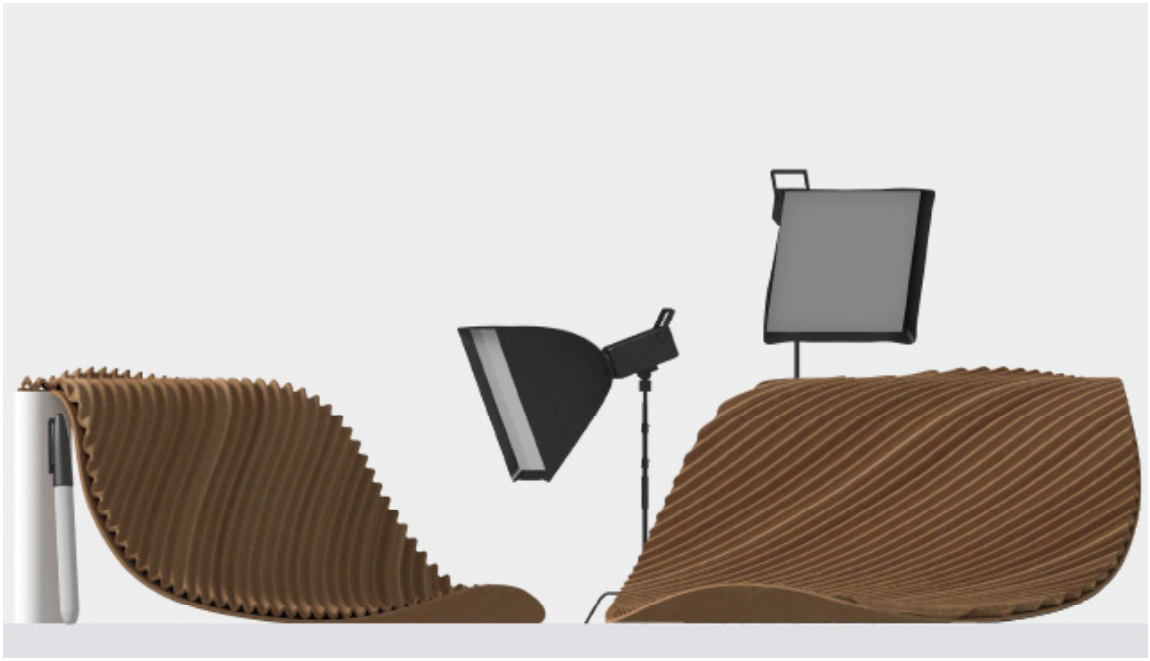
PLAN

GRAVITY COMPARISON

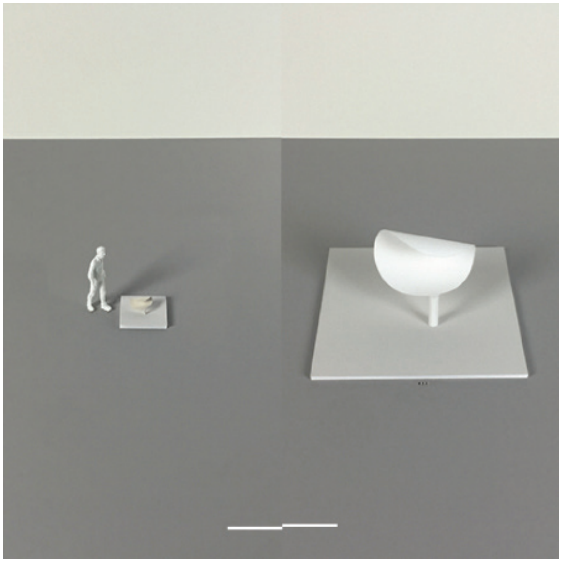
THE RELATIVE SIZE OF THINGS 03



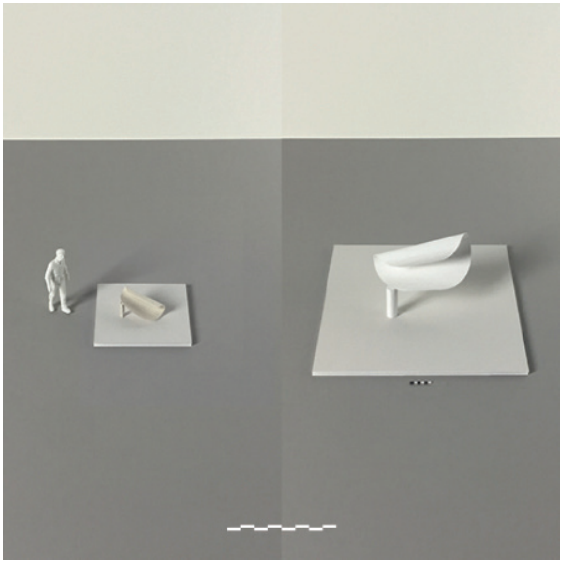
THE RELATIVE SIZE OF THINGS 03



ELEVATION 01



A COMPARATIVE SCALE SEQUENCE, XS



A COMPARATIVE SCALE SEQUENCE, S

A PERSONAL, DOGMATIC, AESTHETIC, PUBLIC NOTE THAT MIGHT BE USEFUL AT THE CONCLUSION OF A FELLOWSHIP:

(a) Copy forms, not ideas.

(b) Make work by comparing things.

(c) Avoid dialectic binaries like new/old, intellectual/artistic, valid/invalid. Focus on peculiar varieties of established interests.

(d) Aim for conceptual clarity over virtuosity.

(e) Work on how to work.

(f) On the other hand, creative work isn't a one-liner lesson. Don't finger wag.

(g) Buildings, videos, drawings, and models are different. They point to each other, but they aren't copies of one another. Dodge the reflex to index one into the other.

(h) Real > Not Real (Imagination)

(i) Unlike a single issue voter, this isn't a single issue practice; the work won't fit into a tight narrative. Think Eames's output with Venturi Scott Brown's polemic.

(j) Start with an observation, use an existing model, reformat something, or confront a circumstance. Or just change the material system.

(k) Use more paper.

(l) Interest + Technique + Format = Output

(m) Composition might be all there really is.

(n) Post this list on the website. People might read it, or most likely skip it. But it holds the work accountable.

(o) Copy ideas, not forms.

(p) Position forms around coherence, familiarity, arrangement, or abstraction. So far, circles have been working out.

(q) Less references, more footnotes.

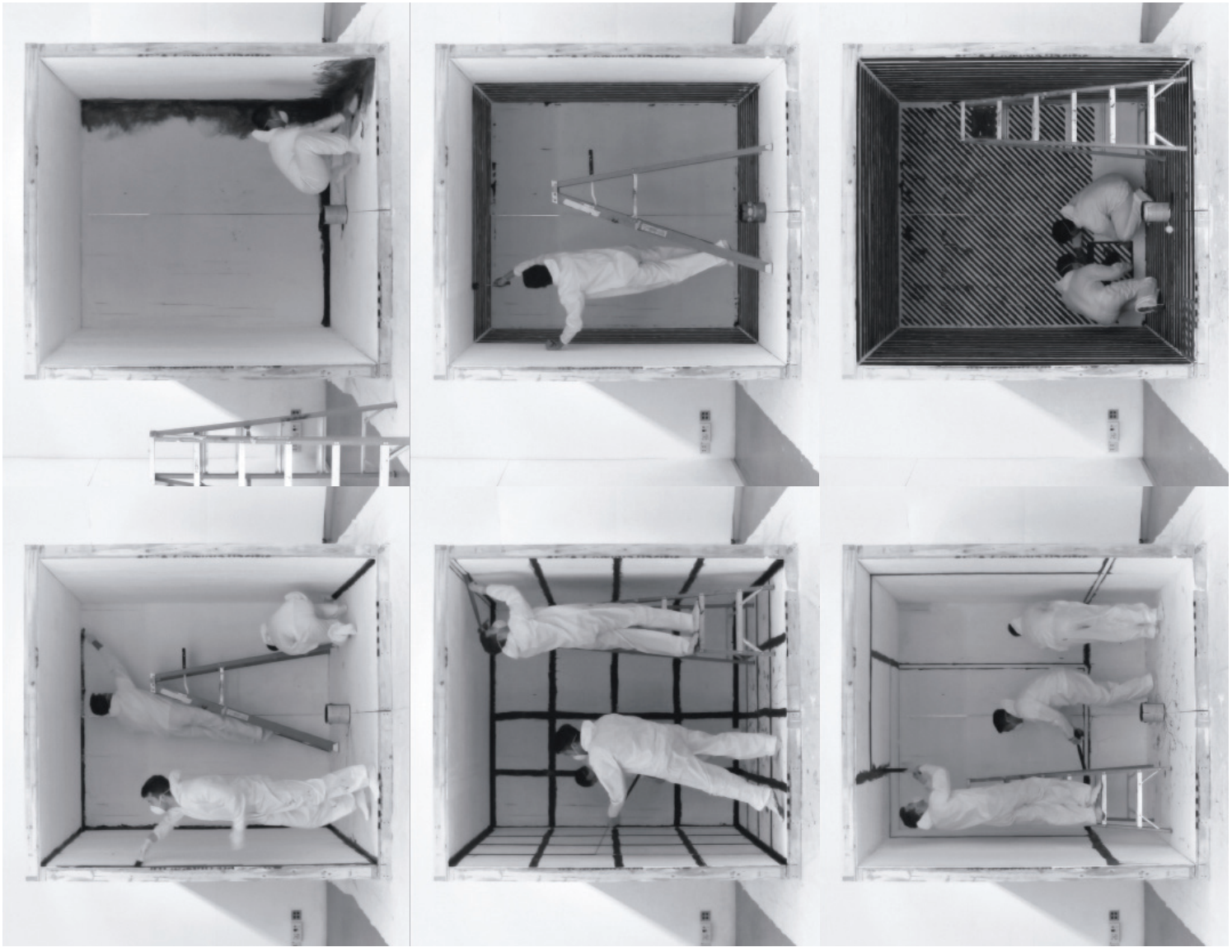
(r) Consider different forms of detachment. Ironic, boring, confused...

(s) Acknowledge the complete opposite, then erase it.

(t) Make an argument about forms of attention and aesthetic techniques.

(u) Mistakes are wrong interpretations, or simply, interpretations.

(v) Lie.



LEFT: 01A DEREGISTRATION

BLDG_DRWG undermined the registration of physical objects by way of relentless, representational tautologies. To begin, an 8' x 8' x 8' box was constructed, the dimensions of which were determined by standard building materials. Inside of this room, six separate studies were enacted that deployed drawing conventions at the building scale using black paint. Half of them looked at ways to define edges, half of them explored ways to articulate surface. This was a chance to avoid the computer and understand how the slippage between building and drawing effects could be productive—how could drawing at this scale elevate what is otherwise a normative box?

BLDG_DRWG

Cyrus Peñarroyo | 2015–16 William Muschenheim Fellow

All architects draw…but as architecture becomes increasingly reliant on computerized methods, the attendant tools and conventions for drawing are disposed to conceal labor and eliminate traces of authorship. In many cases, architects draw digitally to rehearse precision, in hopes of achieving the most direct translation between the initial concept and the final construction. Instead of using drawing as a means to an end, can architects seize new opportunities by complicating the relationship between drawing and building?

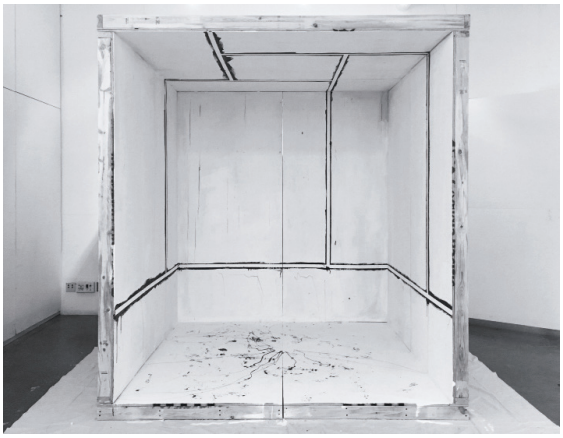
Unlike digital delineations, handmade drawings and sketches more overtly register the temperament of one's hand—the quiver of a line, the change in stroke pressure, the overextension of crossing vectors to announce a corner, and the smudge of graphite to enforce an edge. Such qualities result in precarious representations that seem raw, incomplete, and capricious. However, these autobiographical traces disappear when computer-driven techniques are prioritized and when a scaled drawing is translated to a full-scale building. While the trained eye can likely spot the difference between the sharp conviction of a Miesian line and the loose exuberance of a Gehry sketch, is it possible to produce an architecture that literalizes those effects? Instead of a complete return to hand-drafting, can architects accept contemporary modes of production and physically achieve handwrought, sketch-like qualities through digital means? Alternatively, if architecture depends on physical "stuff" as a form of currency, in what ways can those objects begin to image the digital? Lastly, what effects are generated when we collapse the scale of drawing with that of building?

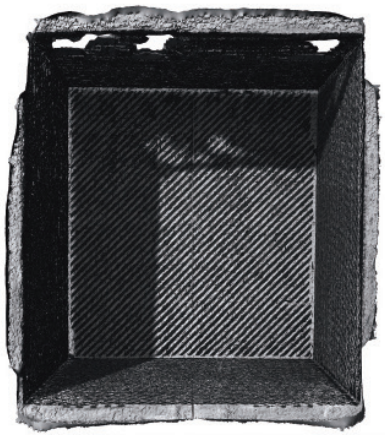
BLDG_DRWG is a project that reorients the ways in which architecture is produced and consumed by recouping handwrought drawing effects and rearranging drawing conventions at the building scale. Oscillating between analog methods (ink, paint, tape) and digital processes (scanning, Photoshop filtering, milling), this project intensifies attributes of drawing otherwise lost in translation. A series of 1:1 investigations executed collectively harnesses the potency of these effects and uses them to reconstitute existing architectural conditions. The results of these studies were reassembled as a room—one fragment of an unfinished building—that speaks to the instability of its own representation.

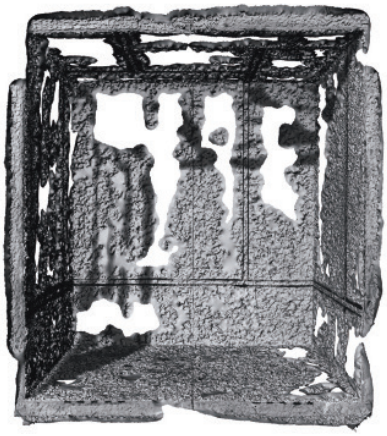
Five possible trajectories emerged from this research and will be discussed in greater detail: Deregistration, Between Media, Thick Flat, Hyper-acceleration, and Permanently Provisional. These themes are in no way absolute nor do they add up to a definitive future. Rather, they approximate a disciplinary zone for further inquiry. ■

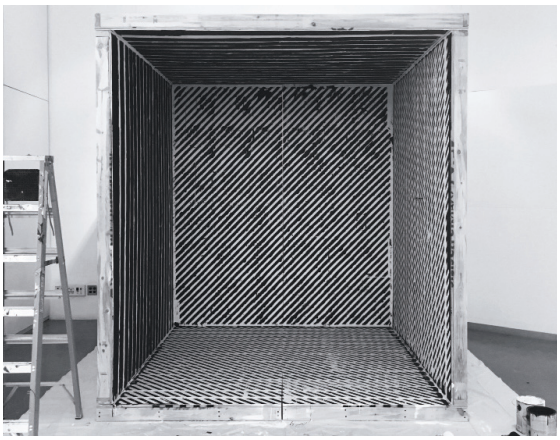
BOTTOM RIGHT AND TOP LEFT

Conventions exist to minimize mistakes. However, deploying them at 1:1 presented a new set of challenges that bared inconsistencies. Once the dimensions of the support surface exceeded those of the human body, it was difficult to rehearse control. To remedy this, familiar tools and techniques—like using stencils or painter's tape—were incorporated to achieve a certain of degree of precision. Additionally, most of the studies were collaborative and choreographed, which made it easier to rapidly cover more surface area. The interior registered every slip of the paint brush, misalignment of the stencil, and excess in stroke pressure; and the markings de-articulated or confused surface and corner conditions.



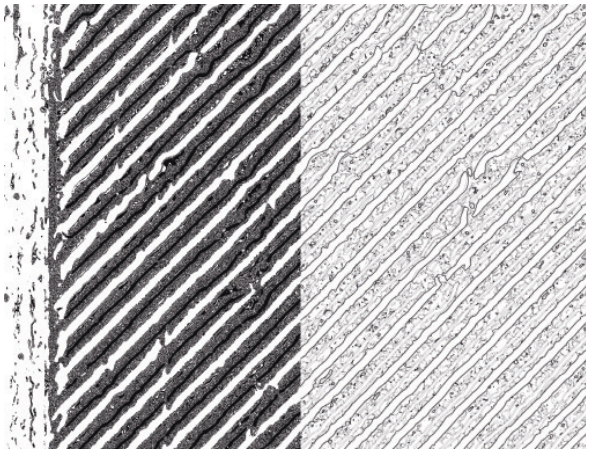


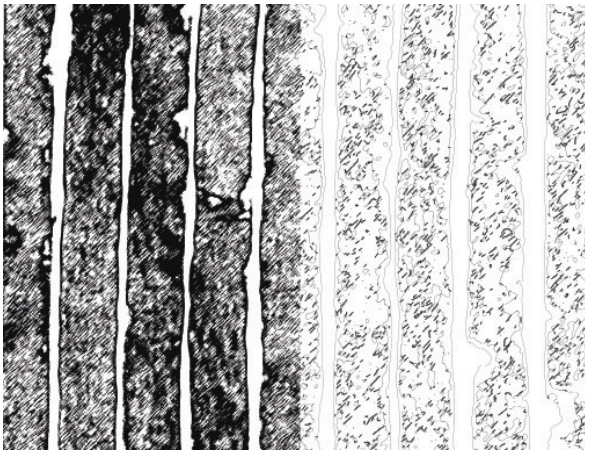


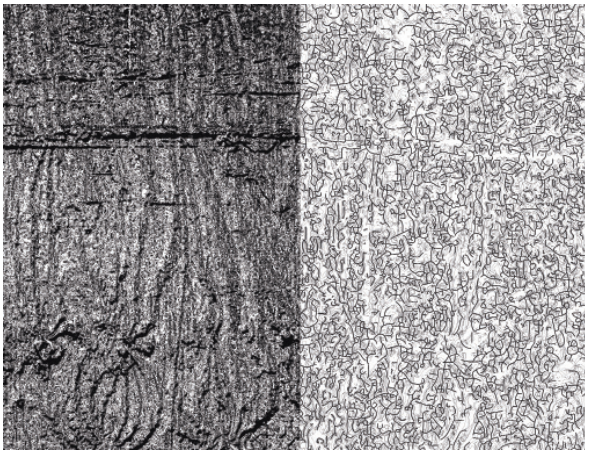


MIDDLE: 01B DEREGISTRATION

Upon the completion of each study, photogrammetry was used to preserve the interiors as digital models and create distance between the physical artifact and its representation. Since the accuracy of the scan corresponded to the amount of superficial difference, the use of black paint helped to retain the cube's legibility. In other words, holes in the ensuing mesh meant that the software had trouble interpreting large expanses of white space and required more visual information. The ability for physical objects to subvert digital logics in favor of other qualities became the charge for the research.





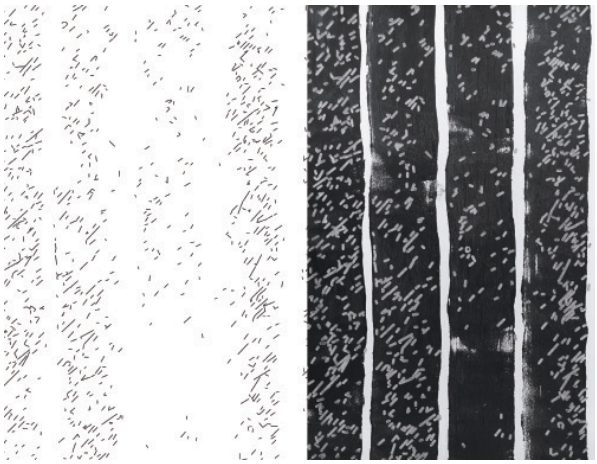


02A BETWEEN MEDIA

Throughout *BLDG_DRWG*, the analog aped the digital and the digital aped the analog by constantly swerving between media. This could be seen in the straightforward use of filters in Photoshop to digitally translate photographs of the painted panels into drawings that appear handmade. Because the software's algorithms were sensitive to differences in the source image, the filters were able to accentuate traces of the hand and convert one line into thousands at the shift of a toggle. The interface allowed for the control of light and dark balances, stroke pressure and thickness, and level of detail and articulation. Some filters could even alter an image to appear metallic based on variations in the image data. To generate millable files and return these studies to physical space, the raster images had to be converted into vector drawings through the use of Adobe Illustrator's "Live Trace" commands. Here, the filtered image was further processed into "Line Art," "Sketched Art," and "Technical Drawing." In this translation, new territories and line work densities emerged. Traces of the original image remained legible, but the drawings began to convey different information about the treated panel.

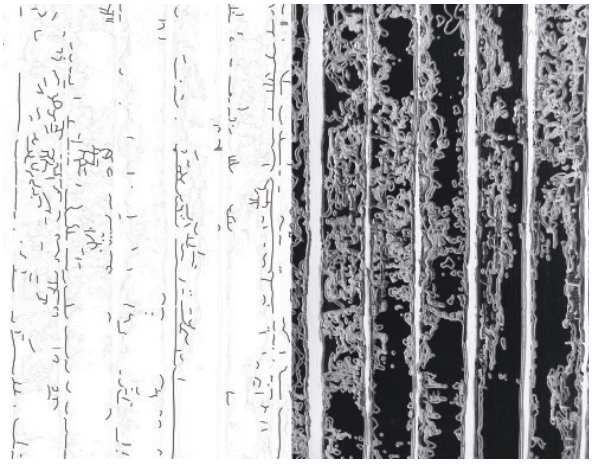
02B BETWEEN MEDIA

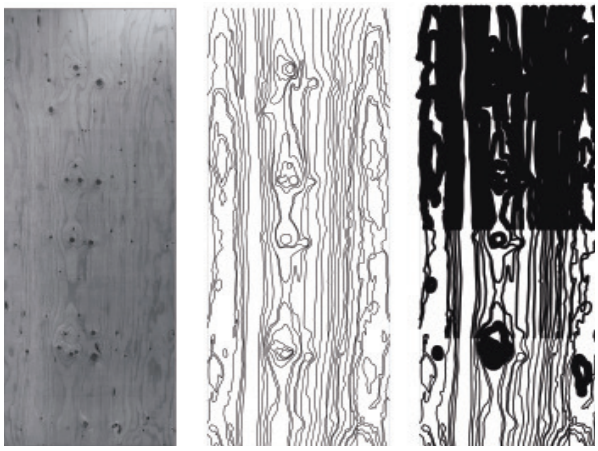
Once opened, the exhibition provided the backdrop for a reenactment of Jørgen Leth's 1967 film, *The Perfect Human*. The panels were digitally processed again, this time using a video camera and preset filters in Final Cut Pro X. Shots of the actual interior, as it existed in the gallery, were spliced together with footage from a green screen studio. The understanding of time, speed, and depth were collapsed, and the division between "reality," and "representation," was compromised. This rapid shift between media (i.e. painted plywood, photograph, Photoshop image, Illustrator drawing, milled plywood, and Final Cut video) facilitated the production of artifacts and effects in spite of a digital deferral of authorship.



03A THICK FLAT

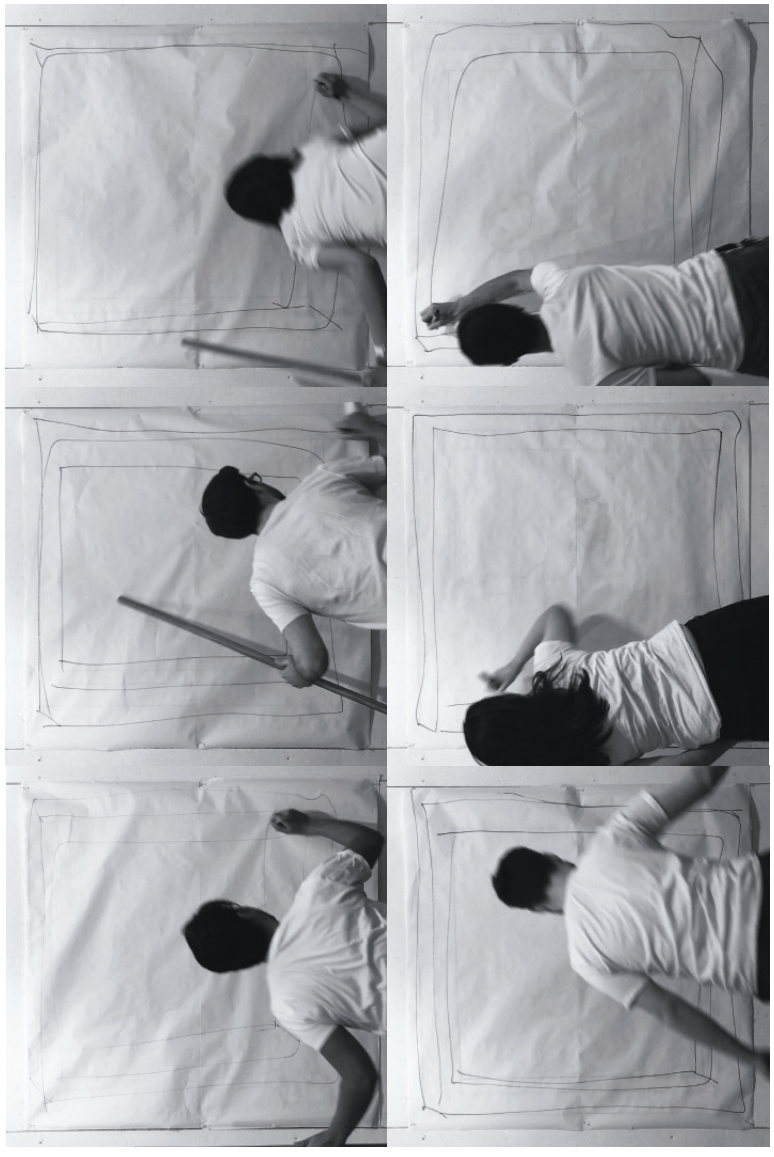
BLDG_DRWG was "thick flat," in its persistent interrogation of the wall surface. After painted panels were photographed and filtered, the drawings were milled back into their corresponding units using a three-axis CNC router. Variations in bit depth and width were introduced to intensify the appearance of the digital translation. The amount of time required to automate this process was comparable to the period spent painting the initial treatment by hand. These studies superimposed a representation of the original back onto itself and, in the process, excavated material from that panel. In other words, the act of drawing was both additive and subtractive. The consequent shallow reliefs were in a precarious state, perpetually incomplete in their representation and physical makeup.

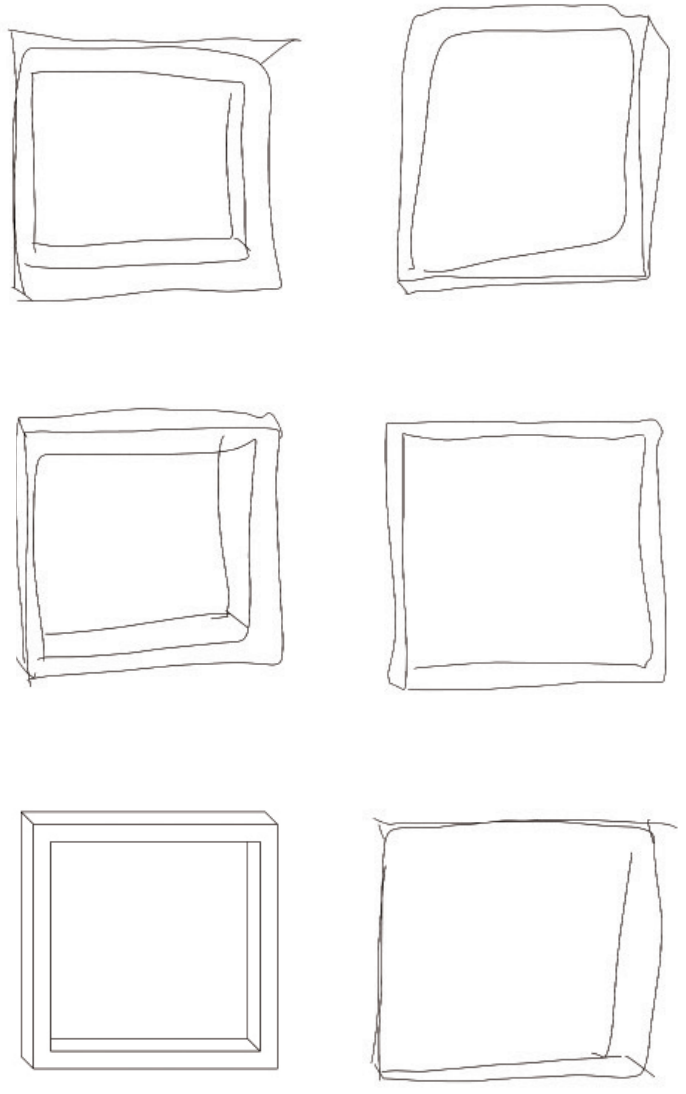


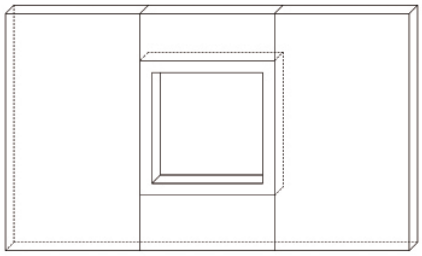


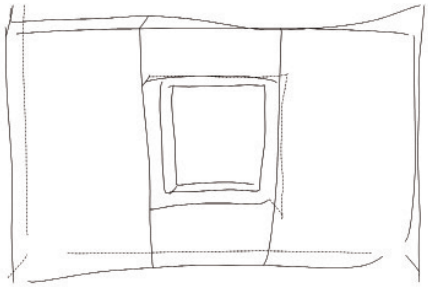
03B THICK FLAT

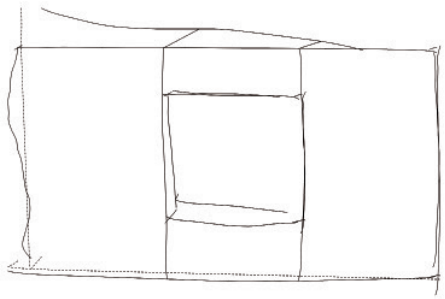
Along with depth, thickness was manipulated through line weight variation. In one set of studies, the plywood's grain was traced, and the width of those lines was modified to compromise their legibility. Closed curves, when thickened, became fat figures, and latent hierarchies emerged within an otherwise ubiquitous and unremarkable building material. In one version, the bit depth was calibrated to reveal the rotated grain in the plywood's sub-layer, a literal misregistration of material reality from its idealized image.

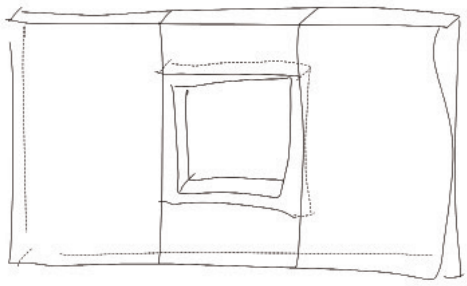












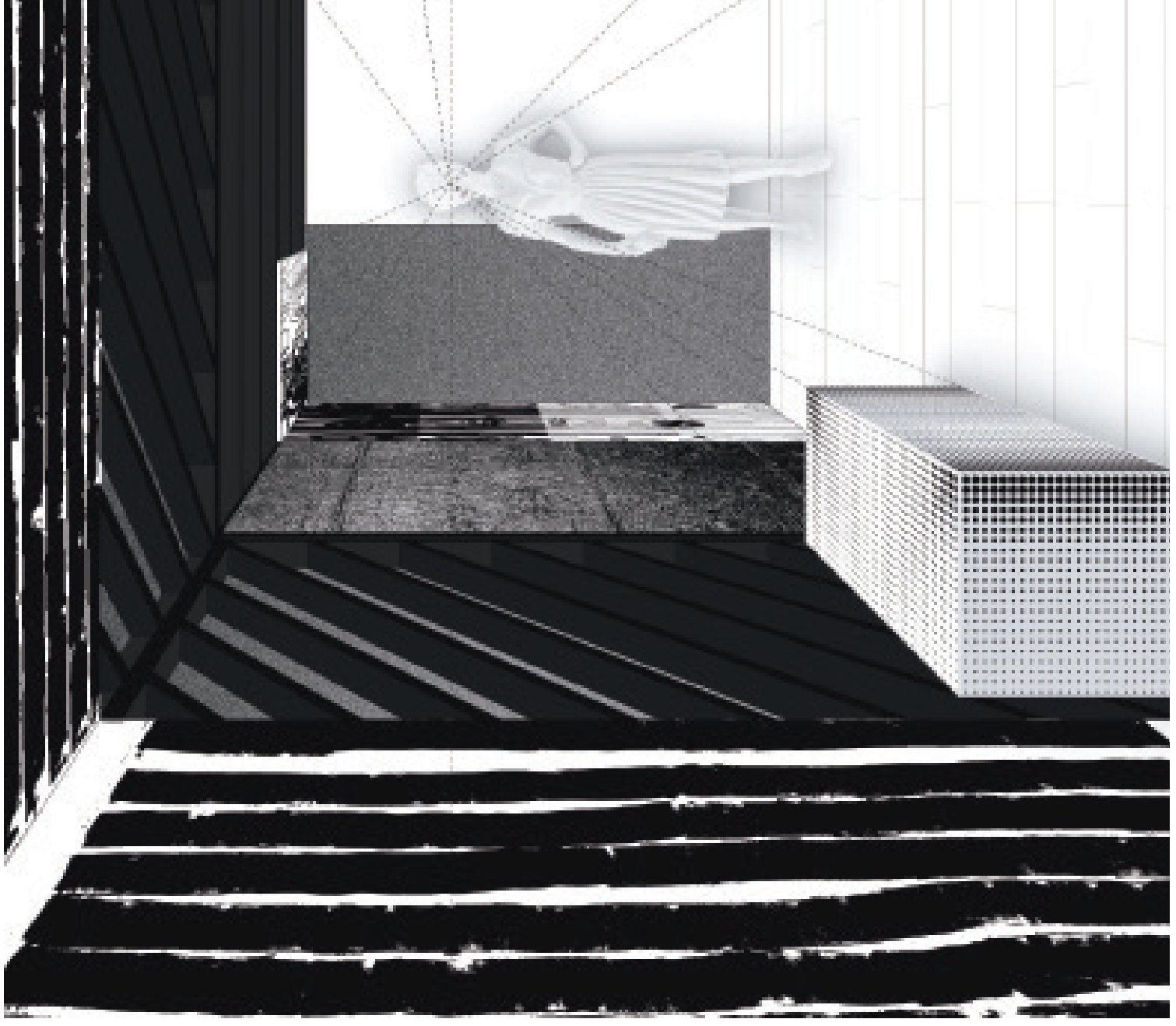
04A HYPER-ACCELERATION

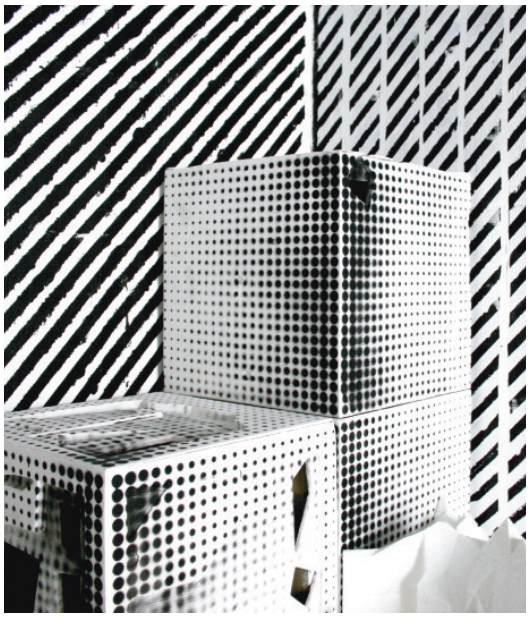
Architecture typically uses computational methods to hyper-accelerate production with the utmost precision, but could it re-engage the body and leverage speed to novel ends?

In *BLDG_DRWG*, eight individuals were asked to replicate an elevation oblique of a three-foot square window in two predetermined windows of time. The participants used an actual wall as the support surface for the drawing. For the first iteration, each person was given five minutes and a custom measuring stick marked only with the necessary dimensions to produce an accurate delineation. This initial pass was for them to get accustomed to representing something this big by hand in this orientation and projection. For the second iteration, each participant used his/her muscle memory to draw the same window in ten seconds. Given the simplicity of the source material and the similarities between all the five-minute versions, the time limitation yielded dramatically different results with regard to execution. For instance, not everyone completed the drawing—though everyone started from the same point, not everyone moved in the same direction—and while most of the individuals were faithful to the projection, there were many inconsistencies. This can be attributed to the body renouncing some control to ensure that all of the essential parts make it on the page in time.

04B HYPER-ACCELERATION

Moving the drawings into digital space revealed and intensified their differences. Though the resultant line work could be widely perceived as "bad" or "sloppy," the windows appeared to swell up, twist, or collapse in unusual ways. If the generative process was automated and the results were taken literally, the drawings could offer new formal possibilities that maintain the source's legibility. Assuming that the original window was part of a wall, a remapping script was developed to modify that wall based on each drawing. Suddenly, the right edge bulged, the top edge tapered to a point, and unexpected hierarchies were revealed that require more complex material assemblages. The script could be used from the window, to the wall, to the room, to the building. Ultimately, computational methods interpreted and redeployed the qualities of a handmade drawing and provided it with alternate, generative capabilities.





05 PERMANENTLY PROVISIONAL

BLDG_DRWG interrogated the finality of representation by collapsing drawing effects with built form to define a room inside a gallery. The room was 8' wide, 8' tall, and 22' long, and was composed of 21 individual panels from the previous drawing experiments. Many of these panels came from the initial 8' x 8' mockup and assumed their original position and orientation, while others were rearranged or produced through various CNC studies. The original mockup also reappeared as a series of photogrammetrically-derived physical models that doubled as furniture. Covered with a dot pattern that accentuated edges and corners, these pieces could be moved around freely to alter the three-dimensional reading of the space.

Other than the entrance from the main hallway, the room was framed by one window and one doorway that faced the rest of the gallery. Opposite this door was a monitor that played all the videos produced over the course of the project. To some extent, the video display operated like a drawing because it revealed the mode of thinking behind establishing the room. In addition, artifacts from the many investigations, like stir sticks, hazmat suits, and measuring devices, were scattered throughout the space, which contributed to its unpolished appearance. The objects shared an affective affinity with the interior—thick globs of paint on sticks with multi-layered treatments on walls, or crumpled coveralls next to scrunched up foam. This array of artifacts made the room seem permanently provisional—a work-in-progress.

The room was not a synthesis of the research but, instead, a scaffold for exhibition. The structural framework was exposed and the backside of each panel remained fairly untreated, as if waiting to meet the room's homologous neighbor, resulting in a room that never felt complete. Ultimately, drawing and its attendant effects did the work of animating and articulating the interior. The room was small enough that one could have an immediate encounter with a single panel, yet big enough for one to understand that panel's role in a larger composition. The room was neither a building nor a drawing but something between the two.

PAUL LEWIS

Paul Lewis is a principal at LTL Architects, a design-intensive architecture firm based in New York City. He is an Associate Professor and Associate Dean at Princeton University School of Architecture, where he has taught since 2000. LTL's newest book, entitled *Manual of Section*, is an analysis of the history and typology of section in architecture. Paul is a Board Member of the Architectural League of New York and a Fellow of the American Academy in Rome.

Its All Linework

January 6, 2017
Paul Lewis kicked off the Winter 2017 lecture series at Taubman College, lecturing to accompany an exhibition in the Taubman College Gallery for LTL's *Manual of Section*. *Dimensions* sat down with Paul before the lecture to talk about the book, leadership, and the practice of architecture. The conversation unfolded into a discussion about the state of the discipline of architecture today.

Dimensions 30: What was the environment of architectural education while you were at school?

Paul Lewis: It was an interesting transitional moment within the discipline where figures like Michael Graves, who were heavily invested in their active building practices—following a period of rethinking architecture through the logic of Postmodernism—were being challenged by younger faculty, including Liz Diller, Mark Wigley and Beatriz Colomina. As a result, there was a fairly contentious relationship and debate that was productive in its friction.

D30: Can you talk about the role of graphics and representation in your practice?

PL: It's a well-known argument that what distinguishes the practice of architecture is that architects don't produce their work or buildings directly. To paraphrase Robin Evans, "Architects don't make buildings, they make drawings of buildings." There is an intrinsic relationship between design and representation; they're not independent from each other. For us, being able to design and rethink how one even goes about developing drawings is fundamental. They are not seen as a separate avenue or as something pursued distinct from design; they are one in the same. The issue then becomes trying not to be hamstrung or limited by the protocols of any kind of software or given models of representation.

We have always been interested in inventing different hybridizations between analog and digital systems, looking at the benefits that might be produced by cross pollinating them in different ways. This is done not necessarily for the sake of efficiency but often for the sake of new effects and different methods for getting at certain aspects of representational agency. The role of overdrawing was precisely a way to benefit from the simultaneity or, at some level, even the incompatibility or friction between digital renderings and hand drawn linework. Rhino models can be produced relatively quickly to develop the massing of a project. Software is very good at effects of shadow, atmosphere, light, and form. But 3D models are not the best means to produce detail, threshold, differentiating foreground and background, articulating edges, lines, etc. Working with overdrawing in an interative, looping method (where 3D models would be produced and hand drawings would articulate the edge or linear elements within the context) allowed us to use the production of the drawing as an extension of the design process and also get at things that were not limited to the logic of any given software or their known conventions. Too often the analogue versus computational gets positioned as a false binary where somehow you either do one or the other. We are much more interested in the messy friction that exists between them.

D30: In *Opportunistic Architecture* you include a postscript called *Overdrawing* about the specific methodology of producing drawings. Can you talk about how the technique has changed from that point to the new mode of working in *Manual of Section*?

PL: What we did within the book was somewhat similar, in that we developed fully three-dimensional Rhino models of every one of the buildings and then cut multiple sections and constantly played with the position of the station point, camera angle, horizon and vanishing point to try to get the best two-dimensional cross section perspective that would reveal the most salient aspects of the buildings section, using only lines. We then used Illustrator to developing the line work, rather than overdrawing by hand. Every single one of the lines was calibrated. This way, we could articulate the difference between foreground and background information, which 3D models aren't very good at doing. Too often you get an excess of black areas in the distance because all the lines are converging in perspective, relentlessly self-similar despite their position within the perspective field. We had to adjust this manually.

But the argument for the removal of the handwork for *Manual of Section* was largely a question of economy in that we wanted the book produced with high resolution, but with inexpensive production. To that end, it's all black and white, there are no raster files; it's all line work. It does lead to the questions of: Why didn't we have shadows? Why didn't we have color? It was to produce a book that would retail for about $20-25 and not be a $40 book; as much as it was an obsession with lines.

It was very important to us for the book to be available to as wide a range of different people as possible. The economy of the book as a printed medium drove a lot of the decisions about the technique of the representation.

D30: What if cost was not a factor—would you add shadows and color?

PL: We had a long debate over both of those issues. Shadows are problematic—you would need to render them without the section cut. Frequently people do shadow renderings of section cuts as if somehow the section doesn't exist, with the sunlight streaming in through where the building has been removed to make the drawing, which may look great, but it's a complete illusion that is counter to some of the arguments we were trying to make.

Color is a different issue and in the end, I'm glad we didn't do it. Part of what we were trying to achieve is a simultaneity of abstraction and immersion; meaning we wanted there to be both an analytical capacity of the cross section to reveal things that couldn't be seen, and also an immersive experience or optical effects of the perspective. With the line drawings, we were able to combine those two things. We also wanted the drawings to be as accurate as possible within the knowledge that they would be inherently flawed. We don't know exactly what's in those wall sections, even though we tried as much as possible to get working drawings for every project.

To step back a bit, we argue that there can be a form of scholarship through the act of making drawings and not just through text; it's a strange irony that architectural history is largely based on words, even though the images that are referenced by those words may actually not be held to the same level of scrutiny as the words said about them. Historical studies rarely depend upon producing new drawings in parallel with text. If scholarship produces new knowledge, why not mine the potential of new drawings?

Our interest was in a different model of visual scholarship. All of this is to say that to add the complexity of color (the furnishing, the texture of interiors, the historical accuracy of those textures) would add a layer of burden that would set the threshold of precision that we wanted to achieve beyond what could be achieved. In addition, we wanted to produce something that wasn't seductive for its immediate color saturated image, given the excess of renderings in our contemporary culture, but to work through the more abstract medium of the line work limited to black and white. That said, we are producing a coloring book version of this, which should be available in a week or two, and we'll leave the color options to others' imagination.

D30: Who were you thinking of as the primary audience when putting the book together?

PL: We wanted the audience to be as broad as possible, which meant we had to make drawings that would have a compelling sensibility to a range of different people. Therefore, rather than make multiple diagrams that break down and analyze a building that might be interesting for an architecture student, but relatively uninteresting to a more general audience, we wanted to produce a single drawing that would reveal some of these well-known buildings, and some less well-known buildings, in a way that would be compelling to both those immersed within the discipline and those who are only peripherally interested in it. Moreover, one of our ambitions was to change the logic of analysis; to not position analysis as a reduction down to a sequence of more rudimentary diagrams, but to argue that the simultaneity of space, form, tectonics, structure, skins, etc—all combined is what makes architecture interesting. Could there be an analysis that's based on an almost excessive level of detail as opposed to the reductive elimination of that detail? We also believe that would broaden the audience that would be interested in the book, as each drawing could be perceived in different ways for different reasons.

D30: What are your thoughts on how your drawing style has taken off for students and academics? Where do you see drawing and graphic styles headed in the future?

PL: I don't know if I'm an expert at predicting where things will go in the future. We have always been interested in the legibility of drawings as opposed to the ways in which drawings can obscure content. That doesn't mean that the drawing needs to be simple; There is a false binary that says that legibility must be diagrammatic. We make the argument that legibility can come from a level of complexity if it's presented in a way that is fundamentally logical and embraces people's visual abilities. That said, I have been surprised by the degree to which a reaction against both the complexity of computation and to the problematics of the virtual in renderings have led to simplified axonometric diagrams and oblique projections that take away some of the pleasures of a drawing's potential vitality. In a strange way, intricacy has recently been stigmatized. "We're very interested in legible intricacy," is probably the best way to put it.

D30: Can you talk about how new technologies in general have influenced your practice?

PL: I don't think we would argue that we're constantly looking for technology to be a catalyst for what we do, but we're also not resistant to incorporating advances into our practice. But we want to find ways to warp or manipulate the technology, whether it's software or a machine for fabrication. We don't rush to be on the vanguard of embracing technologies for vanguards sake, in part because we want to manipulate them towards different ends. I think that we don't see ourselves as a beta testing ground for how to use technology. We'd rather say, "Okay, this is how it gets used. What are the other ways that it could be manipulated, reworked, misread, or used in different ways?"

D30: In *Manual of Section*, you mention a lack of published work on the role of section, despite the amount of work that's been done on the plan. What would be the parametric corollary?

PL: Most of the history of architectural analysis—I'll give you one example: Peter Eisenman's Ph.D., a seminal 20th century analytical document based on the Wittkover, Rowe trajectory, is essentially a thesis about plans. I think there may be one or two section sketches in that entire book. But it's largely an argument about how form can be codified through plan and through axonometric driven by plan.

Plan and elevation are historically presented as the realm of the conceptual basis of the architect—elevation producing the image of the building and plan producing the organizational diagram, and plan being the coordination of everything from money through square footage calculations, to program distribution. The section is an afterthought. Its often relegated to the realm of the builder, the contractor, or the mechanical/structural engineer. We would argue that some of the most interesting architecture is thought through section, but strangely, there has been very little writing about section and very little analytical work.

D30: How was the process of putting together this book compared to your previous publications?

PL: It was totally different, although in all of those books we did the graphic design and the writing. The previous books were types of monographs, based on translating design projects into the format of the pages of a book. To do this we would generate a lot of new drawings for each individual project; ways to combine photographs and drawings so they would then unfold in the space of the page in a sequential manner. The book format as a logic would then influence how we would think about the nature of those drawings and the nature of the photograph to drawing relationship.

Manual of Section was very different. We determined that we were going to do one drawing per page across each spread, and therefore there would not be a need to integrate supplementary information about each building: plans, photographs etc., In other words, where the monographs were based on a complex relationship of different representation, the *Manual of Section* was about a single, obsessive and highly detailed drawing. Each drawing took a huge amount of time—including archival research, accessing working drawings, interpreting photographic evidence, developing Rhino models, and producing the line work.

We were trying to draw what can't be seen: the invisible nature of the section. Moreover, there were certain projects we thought would be really interesting, yet in developing them, we realized that they didn't work in the logic of the book's representation. For example, with FOA's Yokohama Terminal a single section is not very good at revealing its characteristics. It must be seen through sequential sections. So the format of the book had its own limits. A single perspective doesn't allow for the iterative cuts fundamental to certain projects.

D30: What has the feedback been like so far?

PL: If sales can be used as a metric, the response has been wonderful. It's already in its third printing—Amazon sold out of all of its copies that it pre-ordered in the first day. It's been translated into Japanese and Korean already, and the Chinese edition is in process. It's continued to be one of the bestsellers on Amazon. The German Architecture Museum selected it as one of the best architecture books of the year. At the same time, students are now referencing it. One of our hopes is that these drawings of these buildings start to become the way in which people know those buildings. It was very important to us that the book was not only a manual of section, but it also became a taxonomy of interesting buildings and present ways to see those buildings differently, even though some of them may be well known.

D30: With all the different media available, why a book?

PL: The book is still a very good medium for packaging a collection of things that can be referenced in multiple different ways. Its physicality resists some of the ephemeral aesthetics of disappearance—it can linger in different ways. It allows for zooming in and zooming out in ways that often screenshots don't allow for. But it also allows text and image to be synthetically linked, not separated out.

We knew that the individual images would disperse across the net, and they have, but the idea that there is a compendium that's cheap enough that it can be acquired and used as a reference, without having to constantly bring it up through an interface of an electronic screen, that still held some appeal to us.

D30: Do you have any words of advice for students who envision starting a practice in the future? How do architects achieve financial success without compromising good design?

PL: One of the hardest things about architecture is that there are not a lot of avenues for developing your own practice and supporting that practice—the economics of the profession makes it very difficult to start your own firm. The easiest way is to not worry about money, meaning you're already wealthy and that is a real problem. That wasn't an option for us. One of the few avenues to support yourself and develop a body of work independent from an existing firm is through teaching. The other way is to have a split personality where you work during the day for someone else and are able to develop your own work on nights and weekends, but that is very difficult to do. There is no single model, but the belief that "If I only get this one commission, everything's going to be great," rarely works, in part because those commissions, especially publicly available open competitions for projects, are almost non-existent in the United States. Unfortunately, I have no words of advice that are suddenly going to magically reveal an avenue that is unknown.

D30: What do you think makes a project successful?

PL: It depends on the nature of the project. Whether it's a book, or a building, any design project requires a consistent iterative curiosity that recognizes that the cumulative effects of decisions driven by that curiosity and ambition are going to far outweigh the brilliant idea that somehow magically appears. I think what is key is the consistent development of hard work pursuing something that hasn't been done before, but not ignorant of the history upon which it's based. There is too often the assumption that a design project is driven by a magical moment of inspiration and I am very suspicious of the existence of those magical moments.

D30: When do you see the rewards of your teaching efforts? Do you experience a lag between your investment in your students and your students actualizing their potential? And if so, what do you see as the potential for architecture students and for pedagogy in general?

PL: Teaching is complex because it's very time-consuming. It's exhausting in some respects and it's rewards can be hard to always articulate. There are the clichés of, "I get feedback from my students. I learn more from teaching them." There is some degree of truth in that, but I think it's a complex ecology. Nevertheless, I think that the most interesting dialogues related to architecture take place in and around academia, which certainly overlaps with, and is a catalyst for the discussion we have within our office.

D30: What has been the lag, if any, between your theoretical ideas about architecture, technology, and society and their manifestation in works or publications? When does that lag catch up and how do you maintain a critical practice when working with clients and pursuing billed work?

PL: In my mind, that question relies too much on an assumed binary between an avant-garde and society, with the later just needing to catch up. That strikes me as a strange, artificial distinction. I think it is also dependent upon certain models of the avant-garde that relies upon the perpetuation of that separation. I don't think that somehow the argument that you're ahead of your time is a necessary precursor to thinking about the effectiveness of architecture. In fact, in some ways that may even be counter-productive.

In terms of our own work, we are very interested in operating at a range of different mediums, books, installations, and conceptual projects, that articulate the more theoretical underpinnings of architecture, but always embedding these in formats that are accessible to a wide range of different people. We write to be accessible, but also try to add new knowledge to the discipline. As a result, we haven't spent a lot of time thinking about or being frustrated by any lag. We see it as our responsibility to engage people in ways that they feel they are part of the process. We don't believe architecture is based on imposing a visionary world into which we force people to move into. I probably have more trepidation with the premise of a lag than I do belief about its utility.

D30: How might we begin to define the practice of architecture today? How do you see your firm's work in relation to our contemporary time?

PL: To answer this question, you would have to unpack a lot of different things. I think I can put it more in the terms of the degree to which we're interested or fascinated by how architecture, particularly architecture as defined by academic novelty, is constantly exfoliating itself. This perpetual need to critique what five years ago was visionary

or cutting edge, which is quickly rendered as passé. I think it's part a product of the cycle of students duration in graduate school—what the graduating students were doing is not what the current or incoming students then value in the same way. One of the more interesting trends of the last five to ten years is the degree to which in certain schools computation is being resisted or even rejected. The complexity of computation, previously championed for its own aesthetic and performative qualities is questioned, or worse, simply ignored. Its more interesting to try to figure out what one does with technology while not being burdened by it. There also exists an odd curiosity about postmodernism. Postmodernism, rejected within academia for the past 25 years, is now a forbidden fruit, being tasted everywhere. I'm not sure how long that's going to last.

"The complexity of computation, previously championed for its own aesthetic and performative qualities is questioned, or worse, simply ignored."

D30: A lot of what we discuss in academia revolves around the dichotomy between modernism and postmodernism. You make an interesting point about postmodernism's return—I think we see it here, too.

PL: I think that is one of the benefits of having been around for over two decades of academic cycles. What is interesting is that postmodernism was rejected in school, but now it has returned. That makes me very cautious and very curious about why. I am also critical about the naïveté of its embrace; as it's not being embraced for its original conceptual underpinning.

D30: Why do you think it's coming back?

PL: Postmodernism was a critique of high modernism through the introduction of history in a very particular way; then biased in multiple different directions. The most extreme version was a pastiche of history often applied to façades that ignored more substantive issues that we argue existing in section. But there are multiple permutations—Rossi postmodernism is very different than Venturi Scott-Brown. I see postmodernism as a way to resist the issues of complexity and the issues of computational driven deterministic parametric work by way of bringing the curiosity of the designer back into play, as opposed to being subjugated to the methods of computation.

D30: You mentioned the resistance to computation—it seems like you see that postmodernism is making some sort of a return. Can you define what you mean by that?

PL: I think that the issues of figuration, the dominance of legible shapes, the strange abstraction that's at play within representations that are not immersive but distancing or even indifferent—the frontal oblique axonometric or oblique drawing, the strange not-quite-diagram diagram, not-quite-detailed detail drawing representational techniques. These drawing types all have affinities with postmodernism, so it's not surprising that postmodernism is now being mined.

END OF INTERVIEW. ■

Old-School Invert

Lately it has been easy to feel as if the world has been turned upside down. As regular economic cycles and their bubbles have given way to endless news cycles, shortened feedback loops, and continually refreshed social network bubbles, Dimensions has for three decades kept to its own pace and process: a mix of the speculative, the projective, and a dash of reflective, with enough lag to avoid the knee-jerk or short-sighted.

In 1974, the Art and Architecture Building opened on the University of Michigan north campus with a newly-formed College of Architecture and Urban Planning occupying one half while a School of Art the other. Modern skateboarding emerged during this same time due to advancements in materials, particularly the urethane wheel which made it possible to traverse a variety of terrain with both speed and control. The emergence of concrete skateparks transformed skateboarding from an activity previously dominated by its horizontality to one of verticality.

Skateboarders soon found ways to engage the edge and go above the bowels of the skatepark bowl itself. A teenage Bobby Valdez became known in the late '70s for developing a handplant aerial, where one hand grasped the lip of the bowl while the other hand held onto the board and the skateboarder went upside down. While not a fundamental cornerstone for modern skateboarding in the way that Alan 'Ollie' Gelfand's handless aerial unlocked countless contemporary moves and variations, the handplant, or invert, challenged the dominant relationship between surface and skateboard while also disrupting the regular timing intervals that emerged during a skate session by introducing the potential for a stylish pause—or stall—in the middle of a run.

Christian Unverzagt
Advisor

April 16, 2017
Detroit

Recently the invert has re-emerged, highlighted by a new generation of skateboarders performing countless variations, often without knee pads or other protective equipment. An 'old-school' trick recontextualized within a routine of complex technical maneuvers.

As we look to the next academic year and the college expanding into a new wing of the Art and Architecture Building and the tenure of a new dean, perhaps we'll see that the world were not upside down, but rather, only temporarily inverted. As gravity pulls us back down, let's be sure we land on our feet and position ourselves for the next move.

Gratitude

We would like to thank the Victor Gondos, Jr. Archives Fund for their support. This fund was established as a memorial to Dr. Gondos ('25) by his widow, Dorothy Gondos Beers. Dr. Gondos was a distinguished archivist and historian who served twenty-three years with the National Archives in Washington, D.C. Mrs. Gondos Beers' intention was that the fund be used to assist architecture students in exercising and improving their writing skills. Since its inception, the fund has supported the publication of this journal for many years. Upon her passing, Mrs. Gondos Beers left a substantial bequest for the Victor Gondos, Jr. Archives Fund, which generously funds writing projects like *Dimensions*.

Dimensions 30 would also like to thank the following people for their efforts with this year's publication:

Laura Brown
Sharon Haar
Deniz McGee
Sandra Patton
William Manspeaker
Samantha Waits
Erin Peterson
Amy Horvath
CJ Darr
Neil M. Denari
Paul Lewis
Mario Carpo
Cindi Phillips
Ellie Abrons
Adam Fure
Jakob

We are especially grateful for our advisor: Christian Unverzagt. Thanks to your guidance and support we can now claim to be "fancy people."

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ISSN 1074-6536