DIMENSIONS SEVENTEEN

DIMENSIONS SEVENTEEN
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2000 Bonisteel Boulevard
Ann Arbor, Michigan 48109-2069
tel 734-764-1300 fax 734-763-2322
www.tcaup.umich.edu
d_v17@umich.edu

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Faculty advisor: Christian Unverzagt

Editors/Designers/Staff:
Ryan Blanchard, Jackie Chavis,
Peter Cornue, Mary Davis, James Fidler,
Katie Kozarek, Mike Linker,
Cathrine Lohanata, Neil Meredith,
James Francis Molloy Jr, Michael Parlett,
Jeff Ponitz, Calder Spruill

FOREWORD

"I was invited to lecture on the contemporary American city. Architects don't know anything about urbanism—so I'm going to speak tonight about Andrea Palladio." So began Dave Hickey's talk this past fall as part of the Contested Urbanism Studios lecture series. Knowingly, or perhaps unwittingly, Hickey's statement provided a very clear example of an urban act. No matter the amount of conjecture, planning, cajoling, or foresight one brings to a space or an event, the unexpected occurs. Hickey lectured on a subject that for him was more urgent, more relevant, and more provocative—a reassessment of the context within which the great Renaissance architect lived and worked. It was beautiful. To engage urbanism you must engage and tolerate difference, conscious of a whole that is greater than its parts.

This year the faculty conducted two primarily research studios. In total six lectures from distinguished educators and/or practitioners, fourteen faculty, and approximately two hundred students produced compelling work—examples of which you will find inside. Each of these studios works in and around a topic deemed significant by the faculty. The individual studio in turn stakes out a position relative to that topic and produces responses from each of the student authors. At the end of each term, projects selected by an independent jury are awarded scholarships generously supported by the Leon Reiskin family and the Bernard L. Maas Foundation. The Contested Urbanism Studios was comprised of students just beginning their graduate education and was focused, as mentioned above, on urbanism as the setting for competing interests.

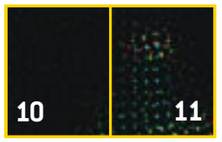
The Wallenberg Studios, for students concluding their Bachelor of Science degree, honors World War II humanitarian and hero Raoul Wallenberg, a 1935 graduate from the University of Michigan College of Architecture. This year's studios titled "Instructions for Construction" engaged developing notions of craft, technology, and production. As part of that studios' lecture series, digital practice pioneer Jim Glymph of Frank O. Gehry and Associates argued that the practice of architecture is at a pivotal moment—an instant in time where recent developments in computation are radically shifting the way in which the architectural profession, the building industry, and the governing legal system will define, design, and produce architecture.

Rounding out this collection is the work of the 2002-03 Fellows, the program that brings talented, young architects to the University to teach and perform individual research alongside the very best work from this year's Graduate Thesis Program.

You will find the majority of this work very close to its subject. Valuing immediacy and direct experience over the reflection that comes with distance. What matters most to these students and faculty is that they are fully and genuinely immersed in *this time* and that these efforts matter.

This time: enigmatic, beautifully uncertain, but within our imagination.

Tom Buresh
Chair of Architecture



INSTRUCTIONS FOR CONSTRUCTION

CONTESTED URBANISM

INSTRUCTIONS FOR CONSTRUCTION

MASS-CRAFTING

Karl Daubmann

In 1798 Eli Whitney addressed the U.S. Congress and asked for funding for a proposal to mass produce rifles with interchangeable parts. That innovation marked a significant shift in the history of making. Up until this point, most objects were custom-made by skilled craftspeople. Whitney's initial proposal included three mass produced prototypes that were actually produced by hand; it was not until 1808 that Whitney delivered the proposed 10,000 rifles.[1] Henry Ford extended these ideas of production with his concept for automobile manufacturing. In 1909, Ford produced 10,000 automobiles; in 1920, 940,000.[2]

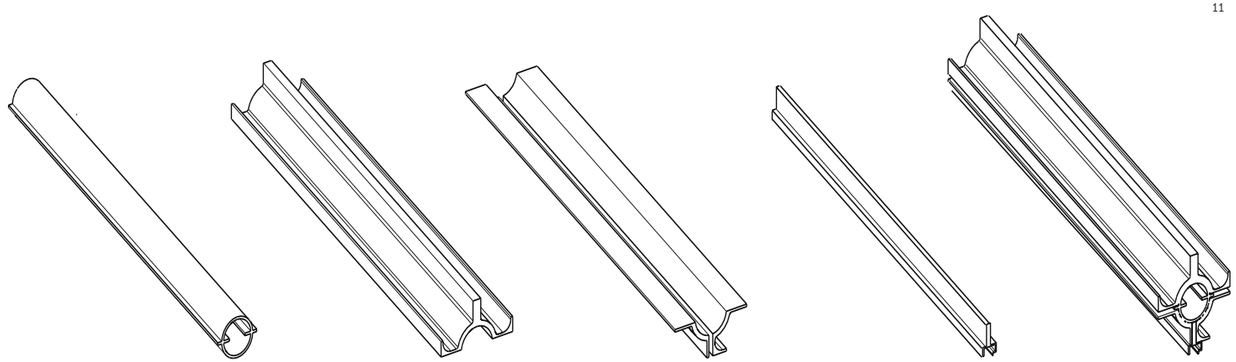
Craft-oriented culture was eventually displaced by mass production, and it was not until the early 1990s that a new paradigm began to emerge, one of infinite customer-driven flexibility. Mass customization promises a flexible and efficient mode of production for customized parts or services at low cost. The catalyst for such a revolution has been computer-aided design and computer-controlled manufacturing.

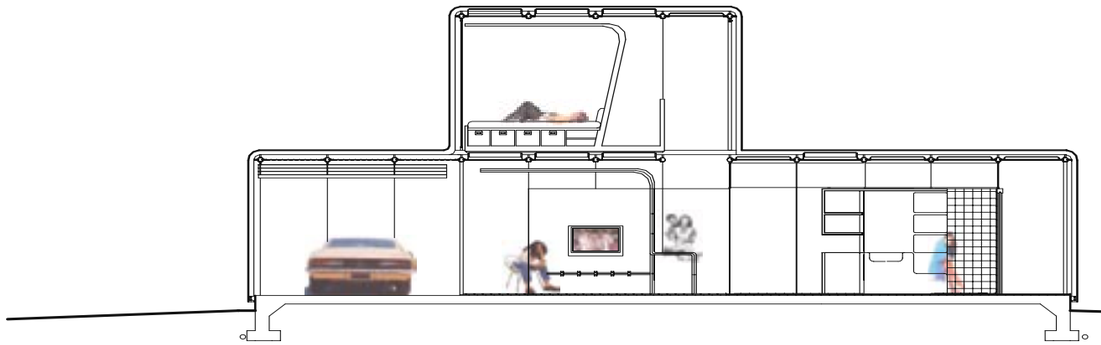
This new mode of production is typified in the U.S. Department of Defense's Joint Strike Fighter program, which in 1996 awarded both Lockheed-Martin and Boeing contracts. The JSF program began with a logical but radical proposition: instead of creating three different airplanes for three different users, one design approach would be used to build a single family of aircraft that could achieve economies of scale in production and support. The three users in this case were to be the Navy, Air Force, and Marines. The family of aircraft designed shared 90% of the same parts, yet their performance remained incredibly varied. Both Lockheed-Martin and Boeing satisfied the requirements of their contracts because of their efforts in research, computation, and advanced manufacturing techniques. The Joint Strike Fighter is the first top-of-the-line fighter to be virtually designed, built, and flown before a single piece of metal was cut.[3]

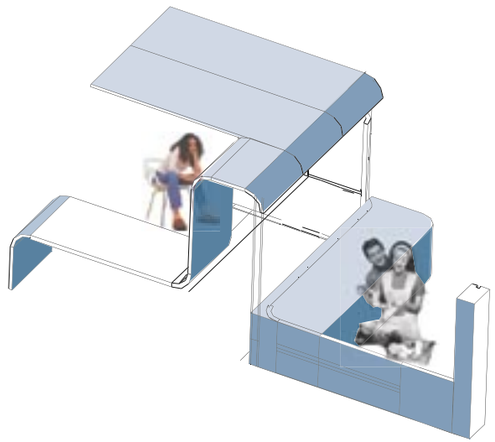
Such innovations in manufacturing have always influenced the making of buildings. The materials that are available, the methods of erection, and the pool of labor constructing buildings evolve based on the paradigmatic shifts in the culture of making. These issues consequently influence every aspect of building, from the interaction permitted between designer and fabricator to the format of instructions and specifications issued for the purpose of making.

Although mass customization is feasible for manufacturing (typically at small dimensional scales) it is still not fully available for the construction of buildings. Computer-driven manufacturing has affected high-end buildings, making difficult things possible, but the promise of high variability for low cost is still not affordable. In the end, architect designed buildings are typically custom-made, based on a client's needs and desires. Architects provide high variability for medium range cost within the current model of making without all the CNC manufacturing. A model that emerged from the work of the Wallenberg studio was that of "mass crafting" which employs strategies of the three production models mentioned (craftspeople, mass production, and mass customization). In the mass crafting model the design process exploits computation to develop a parameter-based procedural model allowing for a repetitive fabrication process that not only allows for variation but also seeks to create it.

A holdover from the previous culture of making is that of repetition and modularity. While it is always cheaper and faster to make the same part, component, or building over and over again, cheaper is not necessarily better. Through computer-driven manufacturing, we can now provide more customization and variation for minimal



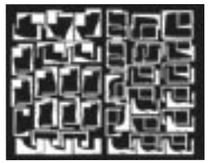


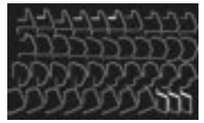


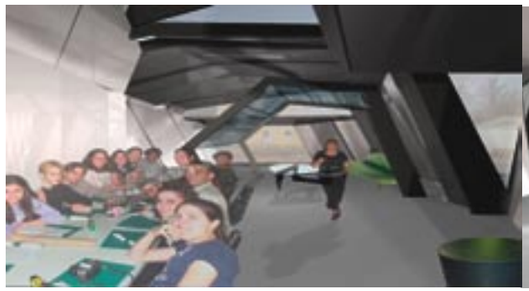
Rebecca Rankin: Box-Mix *With the use of trade technology, fixtures and surfaces can merge to combine programs. By using the steel manufacturer's understanding of materials, a fabricator can condense components of the exterior skin into the structure. In this project, the adapted roof drainage and fastening system is integrated into the design of the structural members to ease both the on-site construction and the operable quality for residents. The consolidation of parts not only considers the manufacturing process but also the design process. Collaborating with a tradesperson during all phases of the design, the architect can consolidate disparate programs within the same utility.*

economic investment as opposed to the repetitive quantitative benefits afforded by mass production. For many decades architects have used their time during design development to standardize the form, dimensions, and materials to fit available parts, products, and methods. Many architects fear mass customization because it offers no perceived resistance, removing the standardization phase of the design process. Mass crafting looks for the criticality not within the specification of available parts but in the limitations of the tools in the manufacturing process. Even if an architect designs a building employing components of standard sizes, a water-jet cutter will not make any distinction between rectangular or freeform cuts. Water-jet cutting, as just one possibility for cutting, has limitations of sheet size, depth of cut, and file input format. The price of the panel is not based on the complexity of shape but instead the machine time and material cost. The designer can now engage the process directly, using the computer file to produce a panel that takes less time to cut, is pre-drilled for assembly, conserves material, and creates a building façade with a desired effect. Resistance and limitations of making exist, but not only are they opportunities for designers to reclaim aspects in the building manufacturing process, but they are ways to be critical about making.

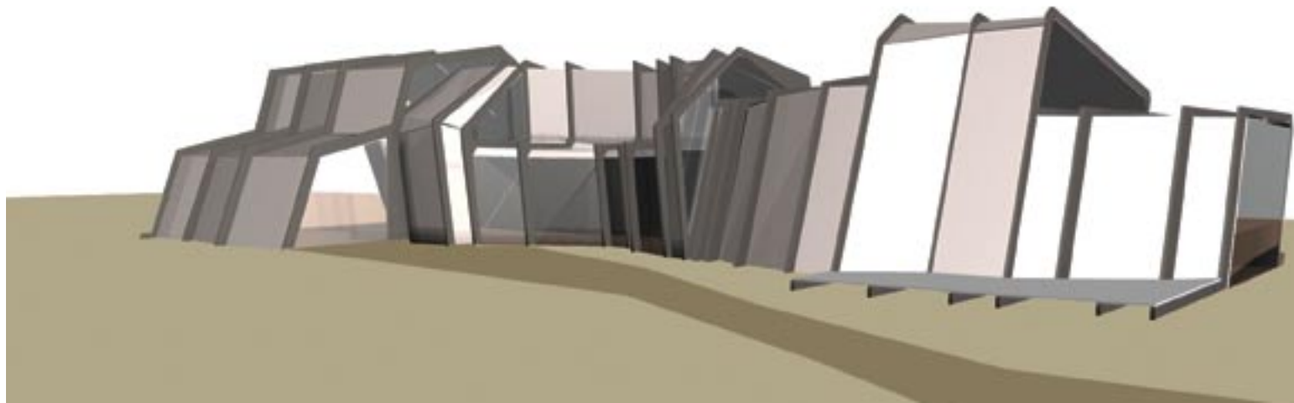
Notes
1. David S. Lux, "The History of American Technology—Small Arms in Revolutionary and Early National Eras," course taught at Bryant College: http://web.bryant.edu/~history/h364material/musket/index.htm
2. R.E. Houston, Model T Ford Production (Detroit: Ford Production Department, August 3, 1927).
3. Carl Hoffman, "The X Wars," *Wired Magazine* 9.07 (2001).

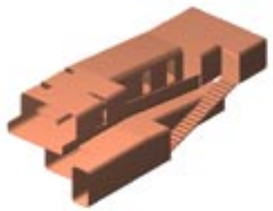


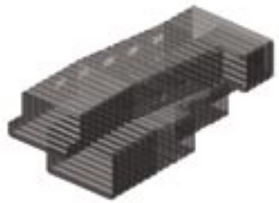


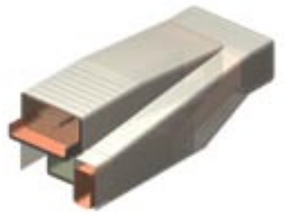


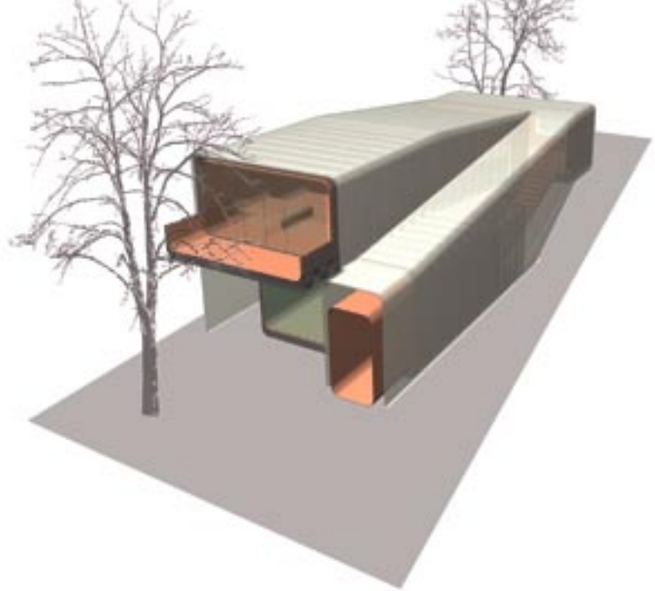
Lindsay Wai: Variations+Versioning *Through three operative techniques, digital files at the prototype scale could be easily transferred to larger scale models. Flattening, folding, and laser cutting were studied as analogous to smaller scale representations of sheet metal bending and water-jet cutting. This research rethinks traditional design processes and offers a possibility of a revised mode of designing and manufacturing in the digital age.*



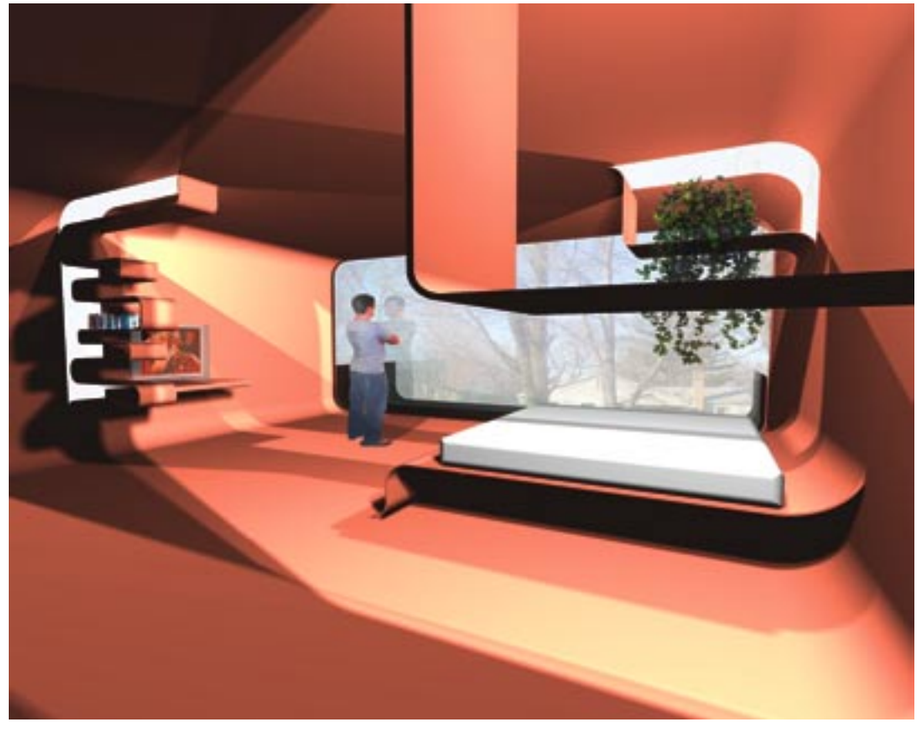








Adam Fure: houSeMC *The house uses a technology known as sheet molding compound (SMC) used primarily in the fabrication of automobile parts. SMC is a fibrous material that is manufactured and distributed in thick sheets. It offers numerous qualities that are found in conventional building materials including durability, structural efficiency, fire resistance, longevity, and thermal and acoustic insulation, all in one thin layer. Its malleable qualities allow it to be shaped and formed to serve any function. The house is made of three SMC layers: an interior wrapper, a core structural layer, and an exterior shell. The core layer uses a corrugated cross-section to increase its structural capabilities. It serves as the formwork for the exterior shell. The inner layer is divided into smaller modules that can be molded into form depending on the program of the space. The exterior shell fastens to the ribs of the core and shelters the other two layers. The customized modularity of the components allows for quick and efficient construction without infringing upon he architect's ability to design new spatial forms.*



POST-FORDIST ARCHITECTURE, OR HUMANITARIANISM REARS ITS UGLY HEAD

Greg Vendena

Detroit recently earned the distinction of being the most racially segregated city in the United States. A pervasive disrespect for both humanity and the environment manifests itself like an open wound in Detroit. However, the reputation as an abandoned, postindustrial wasteland is only a half-truth. As a city of almost one million, to call the entire city abandoned is ridiculous. Conventional thinking, fears, exploitation, and greed have created this perception of Detroit. Invention, creativity, and a will to survive have created another Detroit that is hardly considered.

If Fordism is mass production, interchangeable parts, the assembly line, unskilled labor, and a self-fulfilling cycle of production and consumption then even contemporary globalized industrial production is Fordist. The following proposition represents a post-Fordist concept within a Fordist ground-zero wasteland: how can a basic respect for humanity and our environment be reintroduced within architecture?[1]

WILLIAM MORRIS WAS RIGHT

> *If a man has work to do which he despises, which does not satisfy his natural and rightful desire for pleasure, the greater part of his life must pass unhappily and without self-respect. Consider, I beg you, what that means, and what ruin must come of it in the end.... So I will say that I believe there are two virtues much needed in modern life, if it is ever to become sweet; and I am quite sure that they are absolutely necessary in sowing the seed of an art which is to be made by the people and for the people, as a happiness to the maker and the user. These virtues are honesty and simplicity of life.*[2]
> *—William Morris, 1879*

The arts and crafts era moralists had a humanitarian agenda. Reacting to the brutal effects of industrialization on people and the environment, they sought humane alternatives to the trends around them. Hanging on to the idea of skilled crafts, history texts classify the movement as proto-modern. Once the aesthetic influences merged with industrial mechanization then modernism evolved. Happening without addressing social and environmental concerns, I contend that this step was a devolution.

The late nineteenth century also saw the rise of progressive politics, civil democratic ideals, and public works. In this way, a reactive ideal was emerging. Industrial technology followed its own logic, however, and by far outpaced human and environmental concerns, dragging architecture with it. Pioneering avant-garde architects like Le Corbusier fully embraced the good, bad, and ugly of the machine-age. However, one dystopia flower of this high-speed brutality happened right here in southeast Michigan: Motown.

The alienated and abused worker will always sharply contrast with naïve utopian visions of modern industrialization. The Detroit photographs of Robert Frank compared to Charles Sheeler illustrate the point. No one dares to ask the question again: what human potential has and will have been lost in the process of industrialization? Production and technology in service to humanity are just barely reemerging after a century of labor movements, safety regulations, and technological advances. The fundamental question of priorities remains the same, now as ever.

Our man Morris goes on to say, "Yes, luxury cannot exist without slavery of some kind or other, and its abolition will be blessed, like the abolition of other slaveries, by freeing both of the slaves and of their masters."[3]

Architecture has been in service primarily to the elite class. Rem Koolhaas's Prada flagship store offers a convenient example as compared to the provocative *Prada Toilet* by artist Tom Sachs. In fine art production, being critical is encouraged or even expected, even though the buyers of art are often the very same elite clients. For some reason, architecture does not have the same edge. As the consumers of architecture become more exclusive, the authentic need for shelter and design become greater. Why not, then, focus on the nine-tenths of the society that do not normally have access to architecture?

TACIT KNOWLEDGE

Architects are now defined as professionals. At one point, the architect was considered a "master builder" or tradesman. Interestingly, recent tendencies toward "design-build" and other changes have signaled a rethinking of that vocational shift.

A metalsmith speaks of tacit knowledge. He explains, true craft is making without thinking or speaking. Not ignorant or detached, but a different kind of knowledge where making happens with awe-inspiring skill and fluency. The metalsmith knows the material as a living thing. Craft and making puts us in touch with our own humanity and spirit, but this traditional way is not the dominant paradigm. Instead, we exist in the world of machines, automation, information technologies, and unskilled mass production. However, Jim Glymph, partner in Frank O. Gehry and Associates, admits that without the profound hands-on knowledge of these skilled makers, information based production techniques would not be successful (e.g., automated stone carving equipment was pioneered in Italy, not Silicon Valley). This hands-on making and building represents a fundamental skill for the architecture student, whether they go on to practice with this attitude or not .

GARBAGE POWER (WASTE NOT)

The dark side of mass production and consumption is waste. Sensible people the world over are supporting the idea that nothing should be wasted. Following a natural model where waste from one process becomes food for another, the waste can now be seen as something relevant and useful.[4] This reversal offers hope when exploring the overpowering presence of Detroit, where entire buildings are thrown away like garbage. Understanding raw materials, natural processes, and energy use presents a holistic approach to understanding production. As a pedagogy, this can become an expansive approach, one that, in a strange way, knits together age-old vernacular and contemporary production.

INTERFACE (TOWARDS ALTRUISTIC ARCHITECTURE)

For the final studio project, the students put forward their own idealistic program for Detroit. However, some framework was set: first, as a studio, an urban analysis was completed for the area of focus—Gratiot avenue between I-75 and I-94 in Detroit; second, each student developed an "idealistic" program, selected a site, and conducted a particularized analysis; finally, students adopted and explored a material, process or technique and produced a full-scale element of the project. The ideas of craft/production, an altruistic program, and context had to be grappled with before the architecture fully emerged.

Nicole Bober *proposes that Gratiot Avenue become a roadside theater. Three locations were selected where abandoned buildings corresponded to vacant lots across Gratiot. The low-tech projections follow three curatorial guidelines: community/amateur, experimental/art, and national. The viewing areas become ad-hoc gathering places and could be situated next to bus stops. Bober presents a project in the tradition of the agitprop, only with a more grass roots bent. The open-ended program allows for civic participation, community expression, cultural feedback, and pedestrian gathering places.*

An idealistic framework for architecture offers a middle ground between its present apathy and imposed, naïve, and totalizing modernist utopias.[5] Idealism can occur more or less on a micro-scale, tested alongside the current paradigm. In fact, many students found that the non-profit sector had already provided the exact programs they were imagining.

CALL-OUT
The well-known Rural Studio is a model worth repeating. Several architecture schools have similar service-oriented initiatives in addition to the thirty year-old Community Design Center movement and other organizations. Reports back from these programs reveal win–win situations all around. Given the public nature of the University of Michigan, why is there no such program here?

What follows are links to these programs and other altruistic architecture-related initiatives:

Rural Studio
http://www.ruralstudio.com
University of Washington BaSiC Initiative
http://online.caup.washington.edu/programs/uwbasic/go/programs/about.htm
SCI-Arc Blue Soup Outreach
http://www.sciarc.edu/gallery/bluesoup.shtml
Archeworks
http://www.archeworks.org
University of Kansas Studio 804
http://studio804.com
Architecture for Humanity
http://www.architectureforhumanity.org
Architects Designers and Planners for Social Responsibility
http://www.adpsr.org
Design Corps
http://www.designcorps.org
Community Design Centers
http://www.communitydesign.org

Notes
1. Jane Jenson, "Post-Fordist Citizenship: Struggling to be Born," in *Local Places*, ed. Robert Keil (Montreal: Black Rose Books, 1996) and Daniel Bell, "Fordism and Post-Fordism" in *The Post Modern Reader*, ed. Charles Jencks (London: Academy Additions, 1992).
2. William Morris, "The Art of the People" in *William Morris on Art and Design*, ed. Christine Poulson (Sheffield: Sheffield Academic Press, 1996). Originally delivered before the Birmingham Society of Arts and School of Design, February 19, 1879.
3. Ibid.
4. Helen Lewis, *Design + Environment: a global guide to designing greener goods* (Sheffield: Greenleaf, 2001) and William McDonough, *Cradle to Cradle: remaking the way we make things* (NY: North Point Press, 2002) and see numerous sources on "Life Cycle Assessment."
5. Manfredo Tafuri, *Architecture and Utopia: Design and Capitalist Development* (Cambridge, MIT Press, 1990).

Ann Arbor

Lagos

Ann Arbor

Detroit

Ann Arbor

Detroit

Ann Arbor

Detroit

Matthew Yamasaki *Detroiters often rightly complain of inadequate access to any businesses other than liquor stores. In response Matthew Yamasaki proposes "Marketplex," a large-scale diversified big-box. Hoping for an opportunistic synergy, Yamasaki proposes that the big-box shoulder the development burdens to bring in small community-oriented businesses and a large open bazaar. By essentially repackaging a strip mall into a quasi-urban commercial enclave, the project speculates on profit motives and bank loan behavior as a realistic approach to urban redevelopment—dancing with the devil for the greater good.*

AN INTERVIEW WITH MARCO STEINBERG

Michael Parlett

Dimensions: Rapid prototyping has been an important tool for your design research, particularly the plywood wheelchair assembly that you presented in your lecture. The ability to quickly and cheaply manufacture custom parts for testing and analysis seems to have made what otherwise would be a very difficult task a plausible inquiry. It strikes me though that this product is a piece of industrial design specific to the scale of a single, immobile body. What is the real use for this technology in the architecture of buildings? Does this line of inquiry contain a spatial component?

Marco Steinberg: Certainly it's correct to say that the project dealt mostly at the product design scale. As such, there was no inherent spatial (as architecturally defined) component to the project. However, I would argue there are parallels and crossovers with architecture. In this regards, I would identify two issues: one that has to do with the process of prototyping and the other with the question of precision in fabrication.

At the prototyping level, we can draw up similarities with the process an architect undergoes in developing a project: reiterations of models as a form of representation. In this capacity, the ability to generate quick reiterations can significantly inform the making of an architecture, enabling the architect to explore newfound spatial dimensions and opportunities. At the level of fabrication, the process enables new precision-based forms that would have not been possible by traditional methods of design/fabrication. These new formal possibilities inherently hold the possibility for new spatial opportunities. As such, I would argue that the project has a strong, yet indirect, spatial component.

Automated design processes such as rapid prototyping and computer modeling, because of their speed and precision, have taught us to think in terms of maximum efficiency. In this sense, they speak of a type of functionalism. But looking at images you present to illustrate your work, particularly images of waste material or templates that almost dance with intricate shapes and contours, it is undeniable that the eyes celebrate in the aesthetic aspects of the process. Would it be a contradiction to suggest that there might be some facet of ornamentation in these methods?

I'm not sure I would equate these computer-based processes with an idea of functionalism. At the very least, I would argue, it would be reductive to do so. I would rather see it brought into a broader discussion of representation and thinking, away from the efficiencies, speeds, and functionalisms of the world. It's fundamentally a tool in the conception of design. Agreed, there are things we can now do with these processes that expedite traditional methods of production, but the converse might perversely be argued. Rather than look at the process, we could look at its product. In this instance, I think we would all be hard pressed to argue that inherently it has produced a more efficient, cheaper, quicker, or more functional architecture. At the least, it's a very hard question to measure; a more efficient means does not necessarily translate to a more efficient architecture. Sometimes it simply produces a different architecture.

There is an underlying assumption in the question of efficiency: that the production of architecture is fixed. History has shown us that the fundamental value of new processes has ultimately been in the new possibilities and complexities they enable. It's fundamentally an argument for progress.

The other assumption I would take issue with is the popular modern conception that design is somehow a reconciliation of "form and function" or "aesthetics and function." Design is inherently a complex and synthetic act of defining meaningful order (here I would underscore "meaningful" as complex and culturally driven). The moment we can talk about functionalism, as an entity distinct from its aesthetics is the moment we undermine the very essence of design. Certainly, this is an extreme position, but from a professional point of view, it's made the public discussions of aesthetics a more difficult and apparently frivolous one.

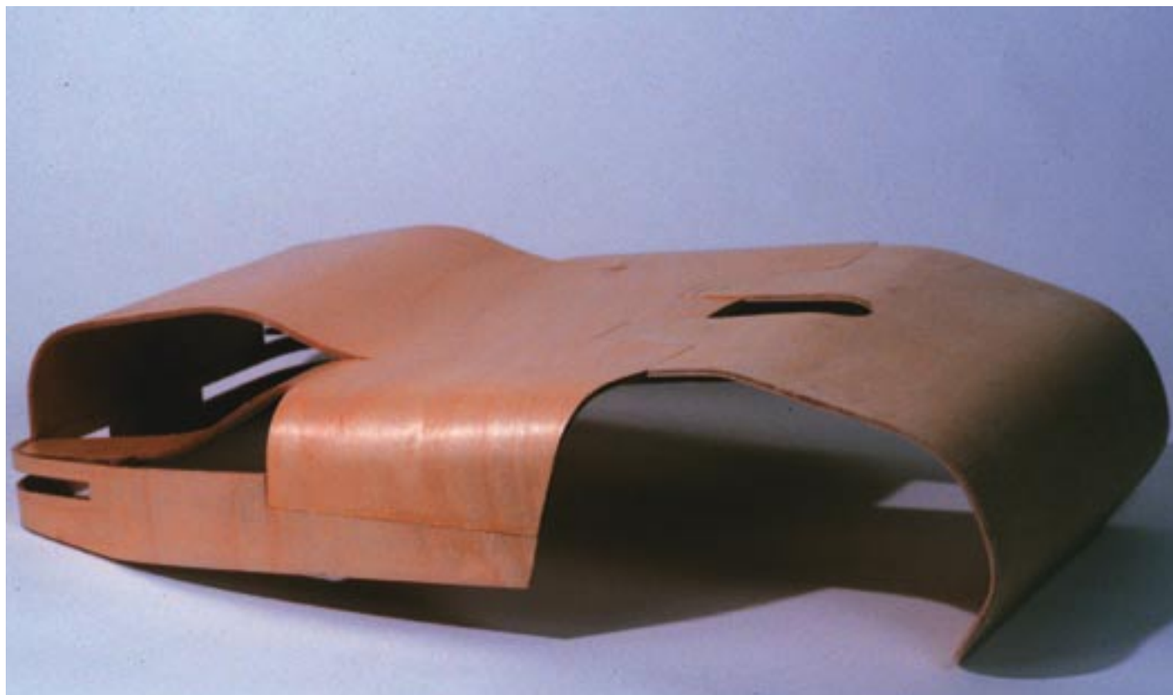
The plywood research was a design-based research project. It explored fundamental questions of thinking and making as they relate to design. As such, it certainly had an aesthetic agenda, one that by sheer definition is inextricably bound to the process of its conception. Whether there was a consciousness about ornamentation is different. It might be correct to say that there is an ornamental dimension to the work, but that it was not part of the conscious pursuit of the work. A taboo of contemporary design, ornamentation, it could be argued, is inherently part of the fabric of design. Whether it's "visible" or not, is another question.

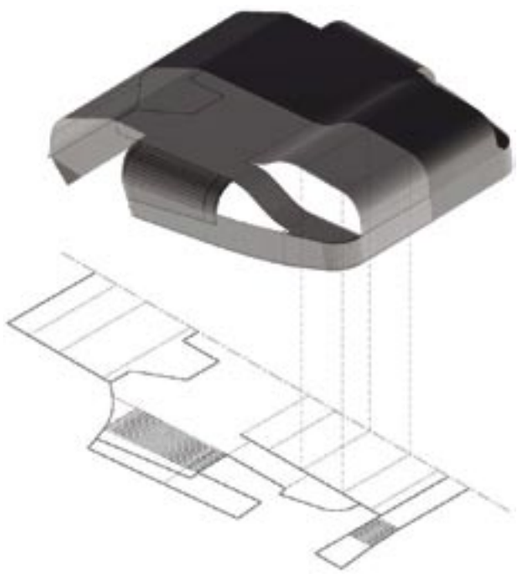
In an article for the Harvard University Gazette*, Toshiko Mori stated that the Materiality/Immateriality show for which you and several students made a study of Homasote was "...designed to be experiential through its harnessing of physical space and materials, its exploration and celebration of the intense effects of immateriality, and its speculation about the coming era of ultramaterials." Is it fair to say that the show and particularly your work with Homasote was trying to find an emotive quality in materials? How does this work relate to methods of mass production, if at all? Does the anonymity, or the very ubiquity, of a material like Tyvek or vinyl siding lose its emotive abilities as an inherent side effect of the mass production process?*

Emotive is maybe too complex of a term for me to discuss with precision, but the work certainly sought to define a qualitative and expressive dimension in these otherwise "banal" materials. The fiberboard used was ideal because it inherently had complexities of a design dimension. This is not necessarily so for all materials. There are materials that might be more or less fertile grounds for explorations. I'm not sure, for example, if we could ever salvage our perception of vinyl siding.

The other question we were very interested in was one of anonymity in materials. In recent history, there's been a surge in the number and variety of engineered, homogeneous, task-oriented materials. These mass-produced materials proliferate and permeate our daily work as architects. At the same time, these materials lack the complexity and character of traditional materials. Our question was then: how might we design with a material devoid of the warmth and grain of wood? Could the terms anonymity and homogeneity be conceived of as positive attributes? Ultimately, I think we were successful in defining a new, broad, and rich palette of expression for the material—the groundwork for new applications beyond the original mandate of the material.

As a product design project, it was interesting in that we could redefine the value and nature of the product without altering its properties. What we redesigned was not the sheet product itself but rather its techniques of application and the perception of its value. It was an example of design as an act of technique and perception building. Value after all is in the eye of the beholder, and what better a beholder for an architectural product than an architect? I see this area of product design in architecture as a critical and fertile ground for our profession.





BRICK

Sandy Attia

We need only glance through a sample of architectural history books to be reminded of the remarkable capacity of brick. From the Ancient Egyptians to the Romans to Byzantine and Ottoman cultures, monoliths of unwavering power and intricate delicacy forefront the dexterity of brick to become both abstract mass and animated surface. Beginning in the late 19th century, architectures of brick become increasingly peripheral; the concatenation of engineering, technological, and material developments brush past load-bearing masonry methods of construction to render them seemingly obsolete.

Bound to its historical and traditional affiliations, brick has become an ugly duckling outfitted in a wardrobe of fuddy-duddiness. When paddling alongside Viollet-le-Duc's slender interiors of iron or Auguste Perret's skeletal concrete constructions, brick simply sinks below the currents of architectural interest. With few exceptions, brick has fast become more allied with the realm of making in architecture—building and construction—and less with the realm of thinking in architecture. Indeed, while the euphoria of new materials and technological advances in contemporary culture has inspired a barrage of work that twists metal, curves glass, and makes what was once impossible now virtually seamless, brick meanwhile has remained, quite simply, brick.

Dismissive of a nostalgia for what brick once was and wary of any such thing as an inherent quality to the material ("the brickness of brick"), the studio seeks out an architecture of brick whose interests of making and thinking are simultaneously complicit, complex, and even cantankerous. Under the 2003 Wallenberg theme of craft, manufacturing, and technology, the studio first sought to work with the individual brick and its methods of assembly. The focus of this essay resides in these early module studies and concludes with a project developed by Ashlyn Owens for a modestly-scaled, civic project in Dixboro Village, Michigan.

BRICK AS A MODEL

The design and casting of individual modules for the construction of a wall sample at a 1:1 scale prompted the studio to consider the brick as an ordering device. In many ways, the brick is an indivisible element of architecture; it is a unit of measurement that challenges us to consider organizing systems of construction while addressing both the details and the spatial intentions of a project. The simple operations of repetition, rotation, and stacking—to name only a few—demanded a precision of assembly while affording an exploration of the relationships between surface, texture, and space in the various wall configurations. In fact, the brick module is a tool that is nimble and agile; it has the potential to spur a taut and gymnastic rhythm between the often difficult and unwieldy scalar shifts of detail, wall, building, and site.

First responses to the design of the module were surprisingly bound up in notions of authorship. Jason Meyering's hand-imprinted brick is a curious example of such a response. The tracing of the hand was perhaps a tentative definition of craft, a suppressed longing for the artisanal—the so-called hand-crafted. Is the scale of the brick alone not a potent enough record of its own methods of making and assembly? Whose hand is embedded into the sides of the brick—the brick mason's, the manufacturer's or even the designer's? Not only do the incumbent questions probe at the intersecting roles in the discipline of design, but they also confront the role of "technology" in the very brick itself. We soon discover that the maker is a wooden

Jason Meyering: The Shear-Lock *Jason Meyering extruded the middle third of the brick to produce the shear-lock module. What resulted was a module with a definitive orientation, a sliding capacity, and a propensity for corbelling. Its very form could inflect its role from wall system to roof system in a seamless slide along the center groove. Moreover, the shear-lock module could syncopate its assembly across the plane of a wall to inflect varying conditions of lighting and enclosure.*

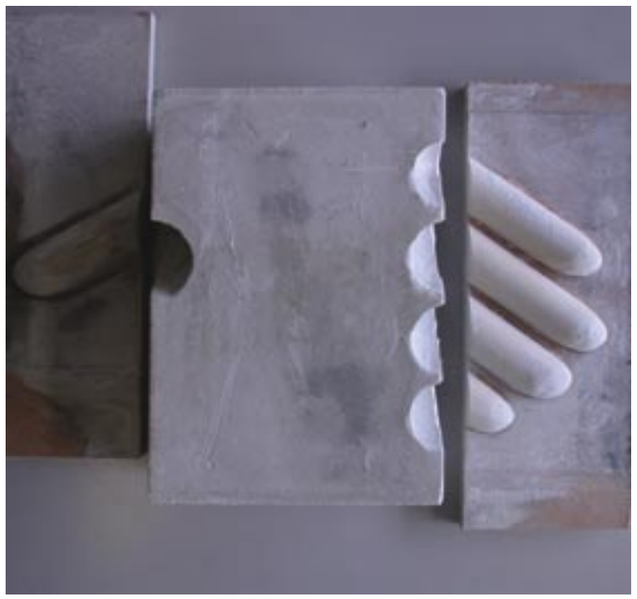
Kristen Owens: The Fan Module *The standard brick is divided into four equal segments, each of which is sequentially rotated 22.5° around one point to make a 90° angle. The resulting fan module produces two opposing surface conditions, one horizontal and the other vertical. The dynamism of the module and the thinness of its construction prompted explorations of the surface and its ornamental qualities, while seeking out various solutions of structural support. The architectural development of the module was governed by the stringent parameters of the module at every scale.*

Wes Delprete: The Interlock *Wes Delprete's design of the interlock module was driven by an interest in density. Different bonding patterns tightened or loosened the interlock of the constituent modules to produce a calibrated gradation of density across the wall assembly. The various systems of enclosure became linked to particular densities of program; the spatial implications of the module bound inhabitation to its enclosure at the site*

finger simulacrum, a pseudo-hand, a constructed mold. Its perfect imprint is a witty wink to all of those who might want to "make their mark" in the production, design, and assembly of brick.

Woody Harrelson plays a dislikably cool architect whose indecent proposal relentlessly drives the storyline of the movie, *Indecent Proposal* (1993). What is more modest is his brick proposition: "A common ordinary brick wants to be something more than it is." This statement gives evidence to the codification of the Kahnian perspective into popular culture; Louis Kahn supposedly asked a brick what it wanted to be and oddly enough the brick spoke to him and quipped that it wanted to be an arch. The studio quickly found that if a brick could at all become something that expressed personal desires and aspirations, brick barks back that it prefers to be exactly what it is: common, ordinary, generic, banal, and even down-right boring—but fabulously versatile.

As the individual modules were developed, their intricacies and, dare I say, over-designed nooks and crannies made for a rather deficient basic architectural element. The module became too specific to be particularly flexible—its plasticity was over-extended by an enthusiasm to design the perfect brick. It soon became clear that the ambitions of perfecting the brick were misplaced, but that the specificities of the studio's constituent modules offered a surprising spectrum of challenges and possibilities. The most provocative examples of the modules were allied in some form or another to the standard brick. Indeed, the generic (barking) brick was never too far away. Careful manipulations of geometry and proportion transformed the standard brick into elements profoundly other. The spatial and architectonic implications of these mutated bricks were dictated by the properties of the constituent, single brick. In other words, the module itself contained a genetic key for its development at the larger scale, whether it was in the plane of the wall, the ground, or in the notations of enclosure and perforation.

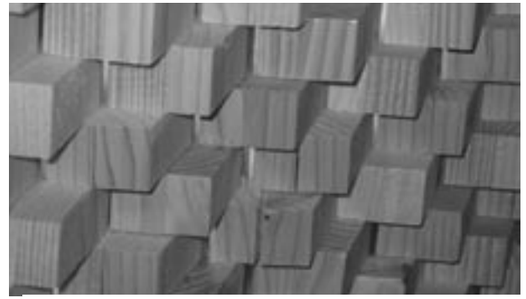


Andy Skelton: Andy-Sized Module *Andy Skelton's module studied the form, material composition, and weight of the brick in relationship to the human hand. The Andy-Sized module coupled ideas of lightness and heavy rustication in a series of studies that wavered between load-bearing construction and brick curtain wall systems. Acknowledging the contemporary use of brick as veneer, Andy exacerbated the two seeming contradictions of lightness and heaviness in a glowing, weathered skin.*

Dana Dejonge: 3-D "L" Module *Dana Dejonge's module divides and rotates a segment of a standard brick to form a three dimensional module whose simple composite geometry of the square characterizes two disparate faces to the wall construction. The legibility of the whole module is found and lost in a flat patchwork patterning on one side and a fielded condition of grouped, protruding objects on the other. The double-natured condition of the wall promotes multiple readings of the single module; allegiances regroup and shift to confound and reestablish the singular element to define other modular conditions. The incumbent nodal condition of objects within a field became a strategy of siting a dialogue between brick and wooden constructions within a patchworked landscape.*

Ashlyn Owens: The Recollection Module *The absence and memory of the standard brick is inscribed in the recollection module in both its form and dimension by literally wrapping a standard brick. Although Ashlyn Owens did not directly transpose her module into the design project, the metaphor of the "wrapper," and the spirit of emptiness became the leading voices in the development of the site.*

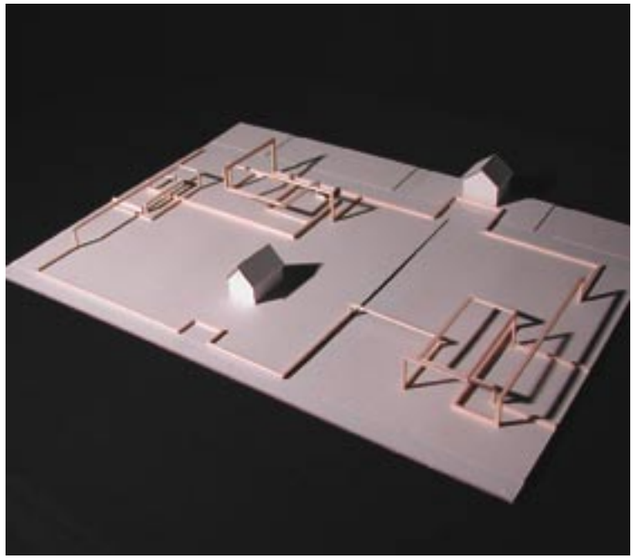
Paul Macomber: The Oblique Brick *By angling four sides of a standard brick at 60 degrees, Paul Mecomber produced the oblique brick. The acute angles prescribed a unique set of assembly modes to produce a highly tactile series of wall configurations without altering the scale of the standard brick. The resulting bonding patterns produced varying readings of depth and aperture which later informed programmatic considerations.*

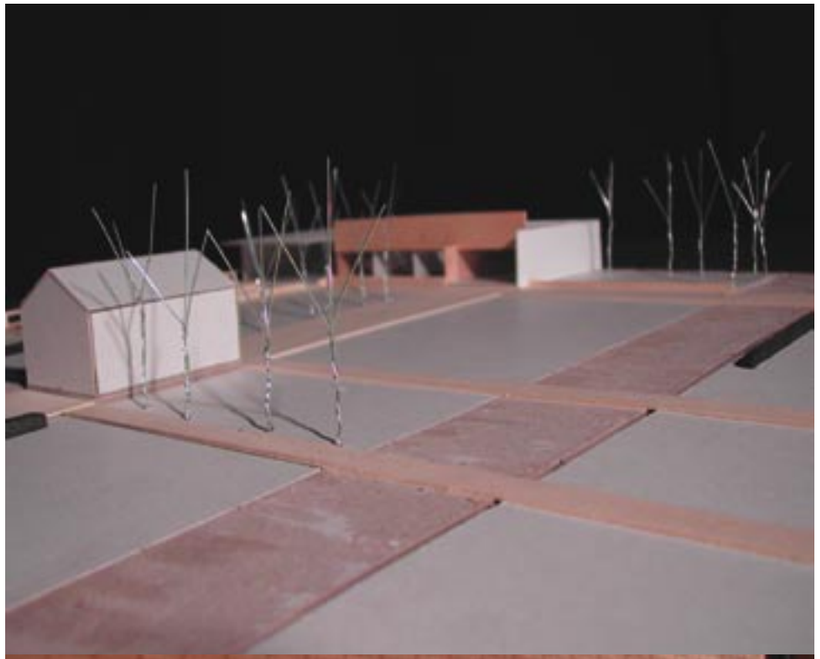


Ashlyn Owens: Dixboro Village—A Town Hall, A Town Square, and a Kindergarten *The main protagonist of the intervention is a brick line that slackens and tangles into taut knots to link the kindergarten, town hall, and town square along a wrapping series of landscapes. These landscapes participate with not only the newly proposed civic functions but also with historic, mid-nineteenth century buildings: the Dixboro Methodist Church, the one-room brick school house (presently used for storage), and the Dixboro General Store. The intervention strives towards a laconic, almost empty cohesion of past and present to confer a perceptible identity to the dispersed fabric of the Dixboro community.*

For a neighborhood that prides itself on its historical background, its rural character, and a sense of "small-town" community, brick as the material protagonist of Ashlyn's proposal is a tongue-in-cheek response to the restrictions of such a context. By embracing brick's very own baggage of solidity and tradition only to subvert these connotations with a supple display of its changing roles, Ashlyn strips brick of its heaviness and threads its courses through a fluid conjecture of open and closed spaces. Springing from the ground plane to become a series of retaining walls, or twisting deftly between monolithic enclosures and filtering screens, the brick suddenly jumps into the roof structure to act as thin, stack-bonded brick-veneer beams before plunging once again into the ground as system pathways and waterways.

Although the gymnastic performance of the brick infuses the site with a surprising dynamism, its legibility across the site also narrates a quieter development of ideas first found in the recollection module. The ability to read the brick as simultaneously central and passively peripheral to the delineation and subsequent transformation of the site is what ultimately drives the strength of the project. As studied in both drawing and model, the wavering prominence of the brick is in conversation with a limited palette of supporting materials throughout the project; be it glass, concrete, or even the plotted landscapes of grasses and trees, the constituent materials find their reference in the dimensions and assigned actions of the brick.





HOUSE WARE/WEAR/WHERE

Chris Knapp

THE SURRATIONAL THING

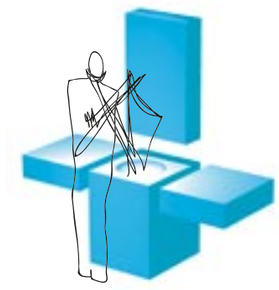
Recognizing that architecture is a physical manifestation of several cross sections of cultural production—informed by issues such as industry, consumerism, comfort, and productivity—requires a comprehensive understanding of the world. The phrase "cultural pragmatism," used not as John Dewey or political thinkers might, describes the necessary assembly of two essential determinants of architectural form. A framework that reminds the designer that function and form are bound by a host of broad and dynamic issues beyond one's control. Attending to the pragmatic aspects of daily life ensures an architecture of productive effect, while bracketing this delivery through an awareness of cultural issues mandates an architecture of social inquiry.

Associated with the production of architecture are countless activities devoted to the technological refinement of its constituent parts, i.e. construction systems, appliances, as-builts, furnishings, claddings, etc. However, architects are often motivated by ulterior interests as they attempt to will some thing or some space into the world. Yet what if one were to examine the commands implicit within the numerous objects from which buildings are ultimately assembled? These components of production are formed out of a variety of logics that do not subscribe to how an architect might wield them. In fact, it is these objects, the wares and wears of architecture, that dominate the relationship. Designers are captive to these objects and thus take action based upon the provocations bound up in items such as a chair or a sink, each eliciting a notion of action/reaction (i.e. program) and an aesthetic association of senses and images (i.e. form). In the essay "Notes on the Thing," Liz Grosz explores the power that "the thing" commands:

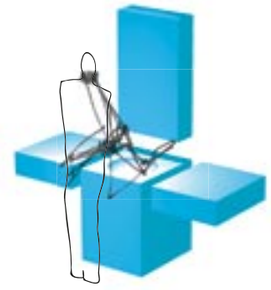
> *The thing has, in the West, always been conceived as the passive, inert, unresisting other or counterpart to the subject, consciousness, or mind, that is, as matter, substance, or noumena. The thing is that against which mind is understood, its other or object. There is another less systematic and more submerged tradition of the thing within the history of philosophy. This counter-tradition conceives of the thing, not as other, but as provocation or incitement for the subject: the thing is that which prompts us to act, to invent, to practice, to extend ourselves beyond ourselves.*[1]

Speculating upon "the thing" in this manner, a new relationship for inquiry emerges. The programs nested in a residential setting, for example, are ripe for investigation within this framework.

Domestic activity has been refined continually over the history of human existence in the pursuit of comfort, convenience, and an ever-shifting set of societal values. While the basic needs of eating, sleeping, cleaning, dressing, and bathing have not fundamentally changed, the architecture supporting these activities has morphed significantly—a transition largely enhanced by the mechanized production of hand-crafted objects and the "alleviation of domestic drudgery through mechanization of the work process"[2] which began in the 19th century. Consider the bath. In Roman times, the bath consisted of a magnificent public architecture tying together crude personal hygiene with direct social exchange. Today it is a comparably diminutive space found within the private confines of the home, captive to a market which perpetuates a social condition of hygienic compulsivity. But how

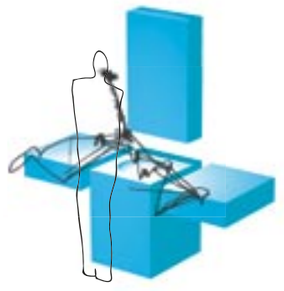


shaving mirror

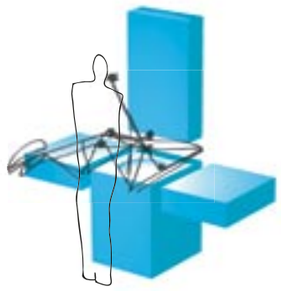


shaving sink

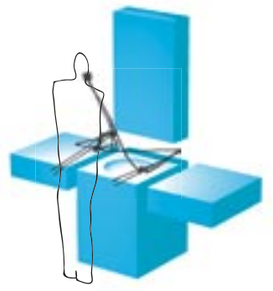
Motion: hand in use



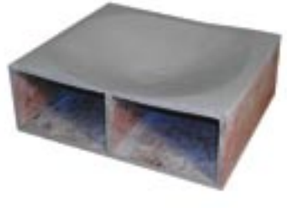
teeth brushing drawers



teeth brushing drawers + sink

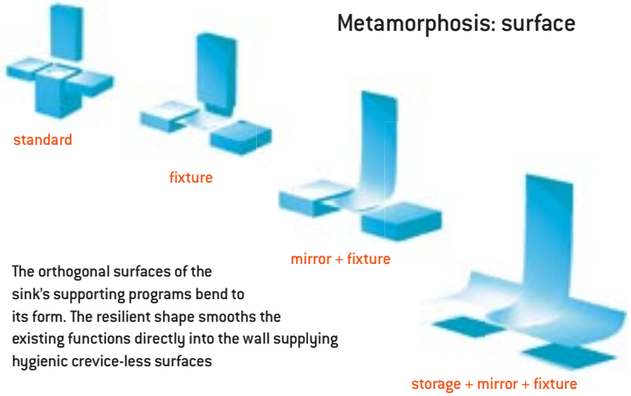


teeth brushing sink



Ben Littrell and Daniel Friedman: Sink *This study reveals the possibilities that exist to create original surfaces from readily available materials that meet functional needs. The sink was developed from the materials that are unseen by the user. Durock, Hardi-Backer, plaster, and concrete achieve the same forms as conventional, more cosmetic materials at less expense and challenge the conventions of cleanliness associated with porcelain.*

Metamorphosis: surface



The orthogonal surfaces of the sink's supporting programs bend to its form. The resilient shape smooths the existing functions directly into the wall supplying hygienic crevice-less surfaces

often does one consider something like the bath in such terms? The conventions, rituals, and habits induced by familiar everyday objects and materials are ripe for study within this schema.

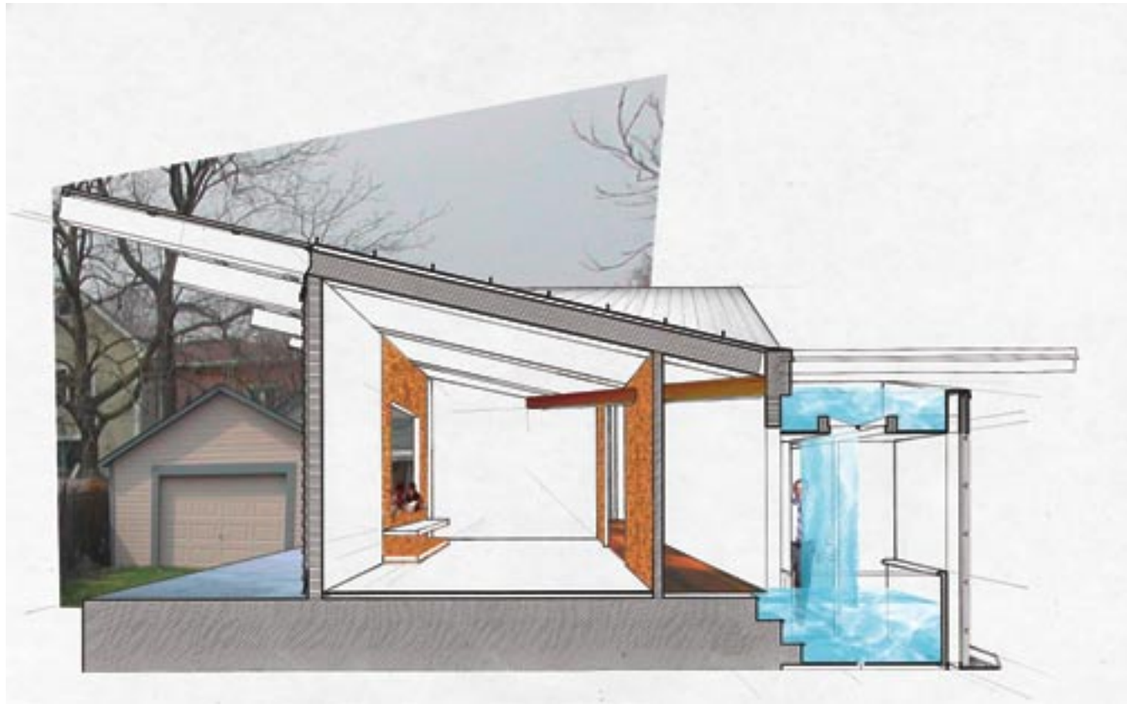
Upon investigating the cultural and technological history of a particular object, understanding its means and processes of production, and mapping the actions resulting from use, how does the architect then respond? The objects, furnishings, appliances, and materials found in domestic architecture are largely infected with idiosyncrasies and illogical obsessions. Borrowing from the writing of Gaston Bachelard by way of Lewis/Tsurumaki/Lewis, the tactic of employing "surrationalism" or "the use of rationalism to test the boundaries of rationalism itself"[3] becomes a productive tool. Within the confines of conventional production, the latent exigencies nested within the familiar become the new subject for how and why an object or device is made. This is not to say that the designer utilizing this lens now declines responsibility for normative architectural givens (i.e. spaces that "work," things that look "good"), rather, the surrationalist approach respects these requirements as its very subject matter, delivering at once an architecture that performs as expected while exacerbating the previously invisible logics housed within the object of inquiry.

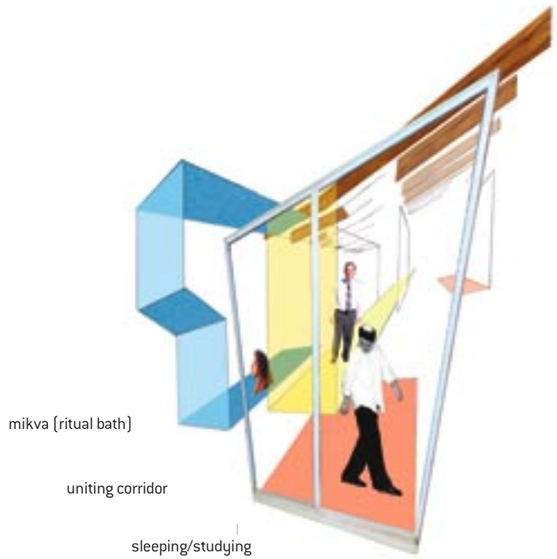
COOL HUNTING + HOT RODDING

The current economic markets give great respect to the consumer's desires, with high-end items such as automobiles and computers being redesigned almost instantaneously with incoming demographic feedback. However, the typical architectural response to domestic needs (i.e. the house) seems not to be concerned with marketing or end-use. Rather, the commonly anticipated product of academic architectural practice is a response to a set of intellectual provocations which reference architecture through a discourse internal to the discipline. Left to the wayside in this form of practice is a consciousness of where a project is within a greater social context.

Today's socioeconomic climate is one where the consumer is king, and a primary driving force behind the consumer's desire is the acquisition of all things cool. A difficult quality to precisely achieve,"Cool is too subtle and too variegated to be captured with broad strokes. Cool is a set of dialectics, not a language," as noted by Malcolm Gladwell in *The New Yorker*.[4] If one considers, for example, the largest growing market segment in the United States, that of the gen-X and gen-Y consumer, then the need to produce coolness becomes apparent. As supported by U.S. Census data, the nuclear family, which is historically seen as the recipient of home design, is on the decline (dropping by 12% since 1970).[5] Concurrent with this trend is the rise of non-nuclear domestic situations, such as single parent families, which accounted for twelve million households in 2000. Within this, generations X and Y create a future client base. These groups together constitute 115 million people between age six and thirty-five, with gen-Yers alone providing $600 million in domestic consumption of products yielding coolness and convenience.[6]

The normative aspects of a project—client, budget, zoning, code, and site—are rich in their conventionally loaded terms and can be targeted through the surrational lens. Furthermore, these points of interest can be accommodated on a pragmatic basis, leaving the ultimate question of aesthetics unanswered. As a repository of coolness, the visual and performative aspects of a designed thing rely upon a cultural awareness. As exemplified in Wes Jones's writing on the difference between a hot





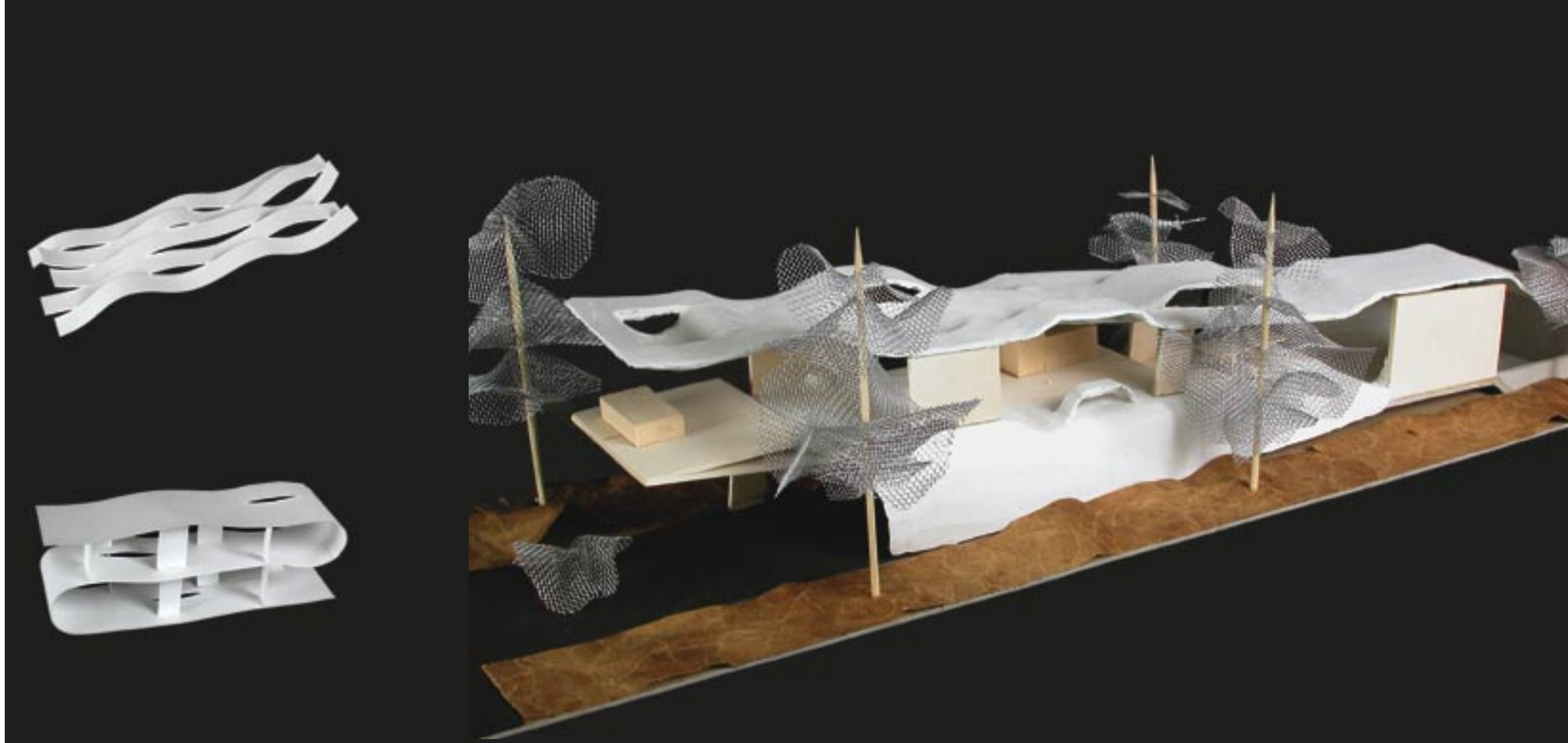
Daniel Friedman: House for a Hasidic Jew *The Hasidic movement is unique in relation to other religious sects in that they adhere to stringent customs dating to the early 1700s while wholly accepting the high-technology of the day. This seemingly paradoxical notion makes the client, the Hasidic Jew, the ultimate challenge for an innovative housing design. The project negotiates three dominant aspects of the Jewish, and more relevantly, Hasidic life-style. The first consists of the Sabbath dynamic; the second, the law and customs of the three major holidays: Succot, Rosh Hashanna, and Passover. The third revolves around the concept of Ni-eda, the laws behind the female menstrual purification process.*

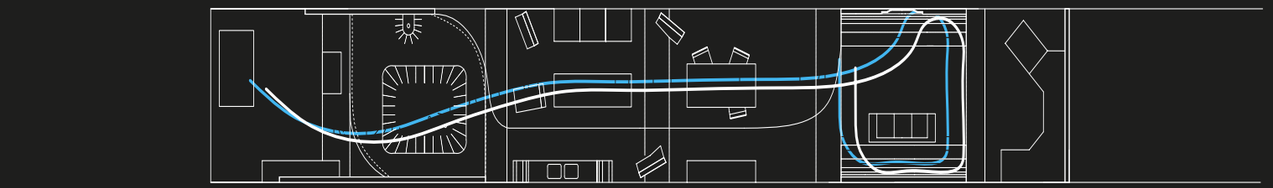
rod and a Ferrari, the European model relies upon old world, nearly irreproducible studio craftsmanship, while its counterpart is the product of tinkering or souping-up an industry standard model in one's garage. "Though it admires restraint, there is about American stuff an irrepressible exuberance. The touchstone when it has lost its way in imitation or insecurity is the air of purposefulness or intention that sets American stuff apart."[7] The hot rod offers a raw, edgy, in-your-face quality the pristine Ferrari cannot. Thought of this way, the architect designing with a fresh attitude toward the familiar might be able to deliver a product which is cool in its image, performance, and uniqueness. One uses this tactic of souping-up familiar wares and wears to produce an architecture that both provokes and responds to its host conditions.

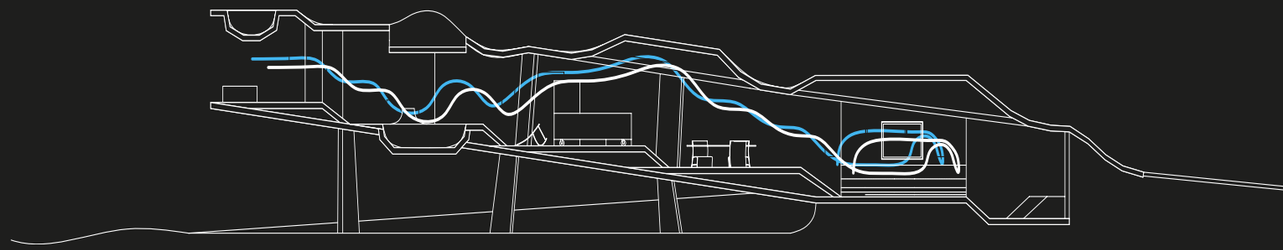
Appliances, furnishings, claddings, components, clients, and codes are subject matter best studied out of context, through many layers of examination. Design work that brings together an interest in the basic constituent parts of architectural production, along with a mental schema that seeks out the all-too-familiar within the familiar, allows the architect to make inquiry into both the introvert architectural and extrovert cultural discourses that underpin daily domestic activity.

Notes

1. Elizabeth Grosz, "Notes on the Thing," in *The Pragmatist Imagination*, ed. Joan Ockman (New York: Princeton Architectural Press, 2000), p. 156-159.
2. Siegfried Giedion, "Anonymous History," in *Mechanization Takes Command* (New York: Oxford University Press, 1948), p. 2-11.
3. Paul Lewis, Marc Tsurumaki, David J. Lewis, "snafu," in *Situation Normal* (New York: Princeton Architectural Press, 1998), p. 4-13.
4. Malcolm Gladwell, "Annals of Style: The Cool Hunt," *The New Yorker*, 17 March 1997, p. 78-88.
5. U.S. Census Bureau, America's Families and Living Arrangements: Population Characteristics, 2000.
6. Kathy Lamancusa, "Trend Talk: Get to Know 'Gen-Y' Future Home Buyers," in *Realty Times*, June, 2000.
7. Wes Jones, "Hot Rod," *Instrumental Form: (Boss Architecture) Words, Buildings, Machines* (New York: Princeton Architectural Press 1998), p. 109-112.







Ben Littrell: House for a Skateboarder *Fluid form is conducive to skateboarding. Component construction makes an ideal smooth surface possible through machine-made manufacturing. Facetted structural insulated panels (SIP) comprise the structural system. The panels are clad in concrete, plaster, and plywood. The use of these materials fulfills the pragmatic requirements of construction while simultaneously facilitating the specific programmatic requirements of surface. The inherent properties of the components allow skateboarding and everyday living to share use of the wares and wears of the house.*

INSTRUCTIONS FOR CONSTRUCTION FROM JOEP VAN LIESHOUT

Cathrine Lohanata

Joep van Lieshout is an artist, craftsman and founder of Atelier van Lieshout (AVL), a multi-disciplinary studio which continues to produces works such as habitable pods, interactive sculptures, furniture, and installation art. While the earlier work of the atelier explicitly exploited the commercial nature of minimalist aesthetics by combining mass-produced objects with custom sculpture, its later projects attempt to challenge the repressive boundaries of the "fine arts." In 2001 van Lieshout founded AVL-Ville, a free state adjacent to Rotterdam that challenged accepted notions of private ownership, civic participation and various forms of exchange. AVL-Ville remained a free state for nearly a full year before it was shut down by Dutch authorities on November 28, 2001.

Van Lieshout's dual role as artist and businessman serves as an alternative model for practice that directly links the production of objects to a range of political, social, and cultural circumstances. AVL does not simply make art objects, but reinvents their method of production, distribution, and reception. From "slave units," which attach themselves to the sides of cultural institutions, to a floating abortion clinic which operates in international waters, van Lieshout does not concern himself with disciplinary distinctions such as "artist" or "designer; " he simply does whatever he wants to do. While this may appear indulgent, AVL offers inspiration as a practice transcending the limitations of art, commerce, and morality through ingenuity and technical know-how.

Ann Arbor, MI, March 19, 2003

Detroit, MI, March 20, 2003

SYSTEMS AND SURFACES

Oliver Neumann

The designs of the industrial engineer and architect Eladio Dieste synthesize regional building materials and construction methods, i.e. traditional masonry technology and the efficient application of formally complex designs. Following Alberti's notion of *concinnitas*, an analysis of his Gausas vaults reveals formal and structural unities from which no part could be removed without weakening or destroying the structural and aesthetic identity of the whole.

Dieste's surface structures, based on the combination of brick, mortar, and iron, can be described in terms of systems. As defined by Immanuel Kant in the 18th century, systems form the unity of knowledge under one idea. This idea is based on an understanding of the form as a whole, in so far as such a concept determines a priori both the size and the position of the parts in respect to each other. The scientific concept of reason in Kant's understanding, therefore, contains the form and extent of the whole. Thus the whole is articulated, not accumulated. It can grow from within, similar to the body whose growth does not add a limb but extends existing parts without changing the proportion.

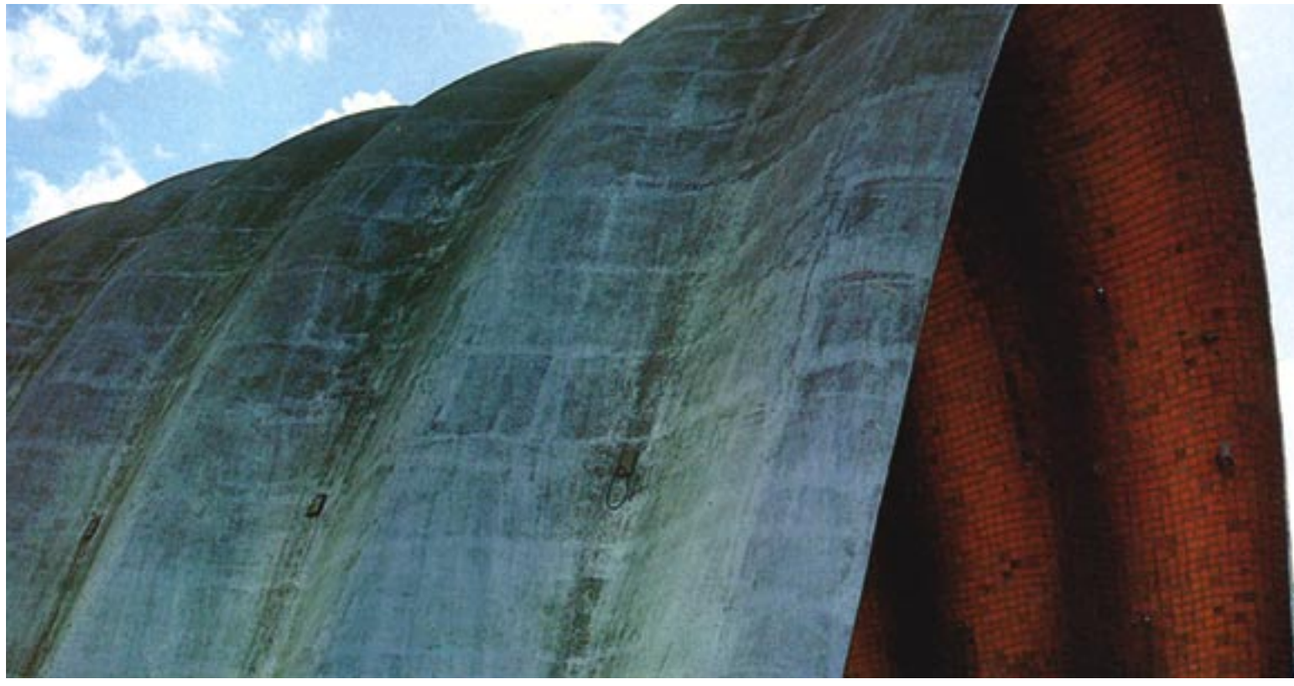
Although not necessarily limited to the spatial constraints of Cartesian horizontals and verticals, an architecture following this logic still assumes an order as a rigorous delineation of space. An external boundary, however malleable and subject to expansion or contraction, serves to define the architecture as a recognizable object.

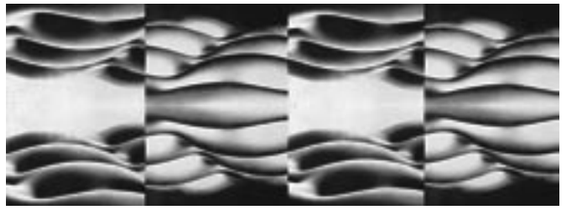
More recent studies reveal complex and intricate relationships that transcend the definition of systems isolated from their surroundings (conservative systems). These investigations extend notions of dynamic living systems into the realm of architecture and construction. An architecture sensitive to this new reading will then detect diversity and irregular rhythms, referencing a reality that is highly complex and rich in entanglements. The local actions and interrelationships become starting points that spread outward and inform the whole.

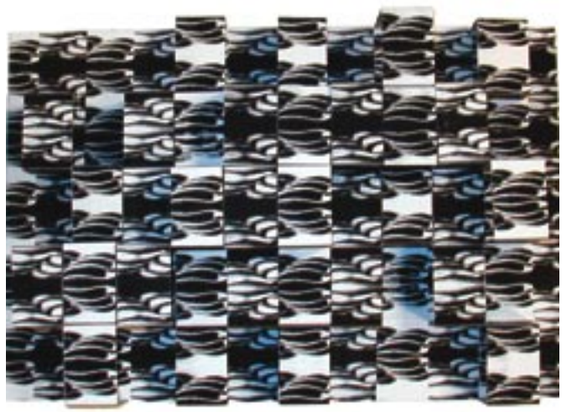
Eladio Dieste's large brick buildings adopt simple and economic techniques. His designs can be lighter than other stratified structures by using terra-cotta and concrete, combining the higher coefficient of elasticity of the concrete with brick's superior qualities in acoustics, humidity control, and thermal insulation. The complex curves of his reinforced brick surfaces resulting from his studies with positive and negative Gaussian curvature, however, were often impossible to calculate and difficult to represent in drawings.

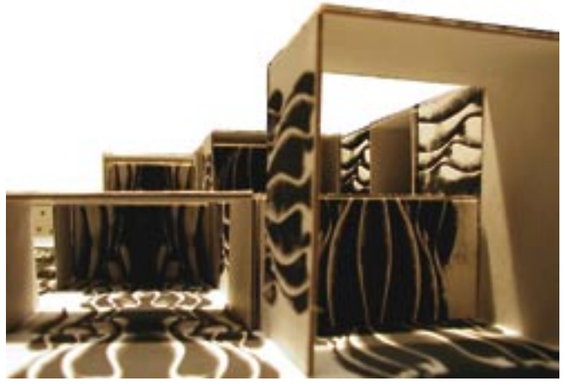
This studio takes detail images of intricate surface designs as a starting point for the exploration of complex surface conditions. Accompanied by a series of readings on organisms and notions of complexity, the studio explores the manifold relationships inherent in complex surfaces. A series of drawings and model studies reveals the immanent conditions and relationships that influence the formal configuration of complex surfaces. The studies then serve to develop instructions on how to generate and build similar spatial constructs.

The second part of the design studio builds on the research of the initial exercise. The generated analysis techniques and design instructions are applied to the reading of specific site conditions and the design of a small building. The understanding of operations to generate complex surfaces informs the development of a site and program-specific project. The design projects extend ideas of complexity and dynamic systems into the realm of the Nichols Arboretum and the social life of the occupants of a house in the park. A map of the maintenance activities in the park addresses the temporal and spatial aspects of the work necessary to maintain the park and explores their implications for the design of the house.

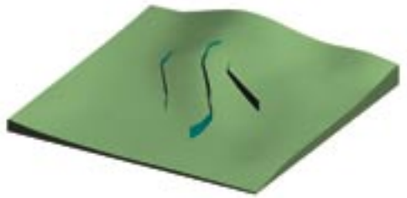


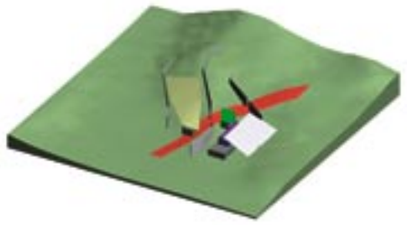


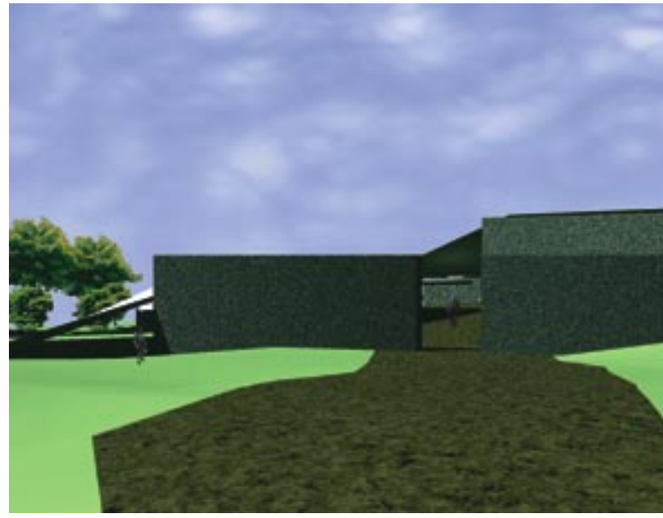


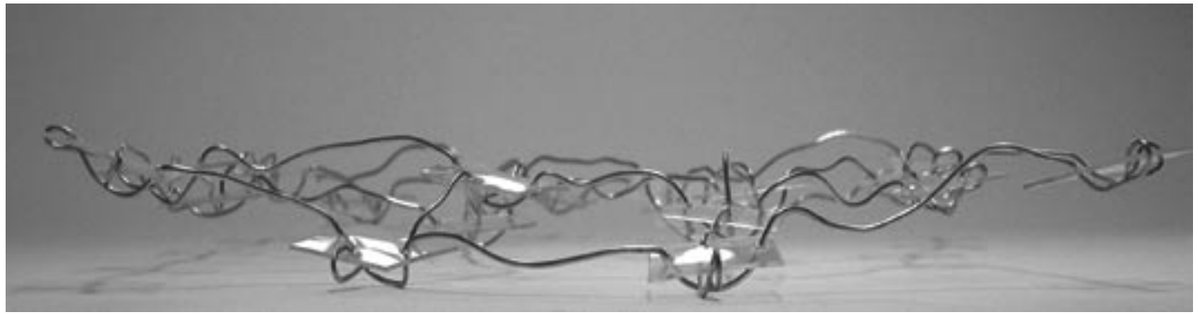


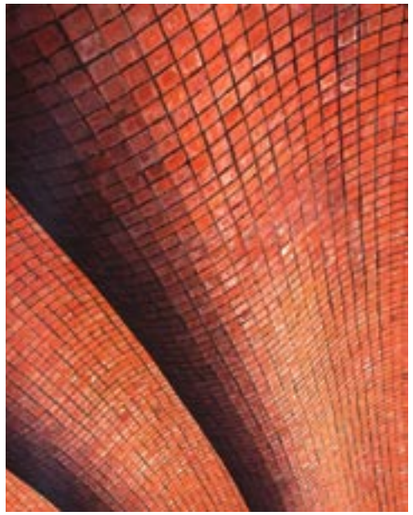
Kristine Youngblood *Scale, boundary, and density are the criteria for an investigation of the original image. In order to define scale, the image was copied and overlapped to create a single continuous pattern. By inverting the image, a new boundary was defined through color matching. Interlocking these images to create a field condition, a new density was generated where the image is seen as a module within a larger field. Further studies of the field lead to an investigation of how changing the individual module might affect the larger whole of the field. Cuts were made along the continuous contours that linked the modules, weaving the 2-D image into a new 3-D surface.*
The blending of 2-D and 3-D is accompanied by a parallel exploration of camouflage, a technique that often leads to the flattening of 3-D surfaces. By taking three main factors of camouflage into consideration—size, pattern, and color—a new means of cutting and folding was developed that promotes a dual reading; individual elements protrude in section while remaining tied to the landscape in plan.
A series of walls were placed on the chosen site that both intensify the topographical conditions and provide a means to extend the study of camouflage. Each of the specific viewpoints selected as starting points for the design correspond to one of the four walls placed on the site. The configuration and height of each wall was chosen to create program-specific exposures while integrating the design into a modified landscape. The resulting house design occupies spaces between the existing and altered terrain.

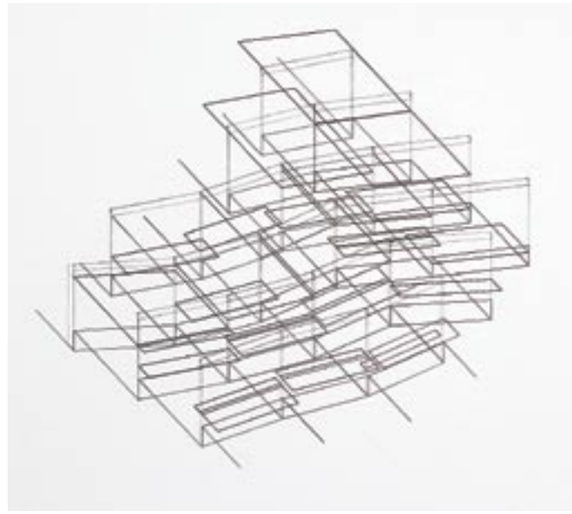




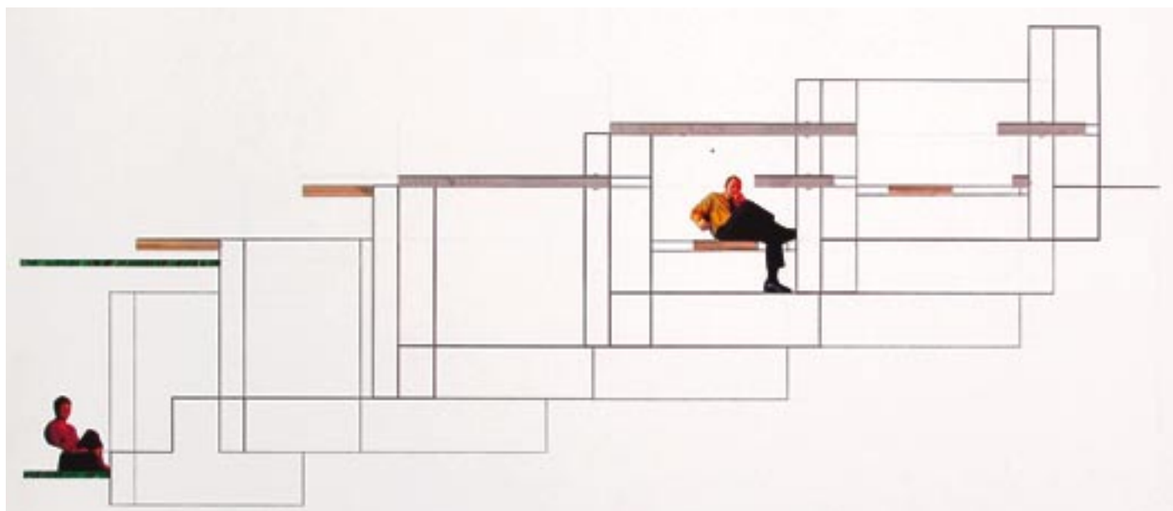








Brooke Karius *Interpreting the given surface as perpetually moving and flexible, two model studies were used to explore potential connections between module and brick to create an elastic surface. Changes in a wire model are studied in a series of sections; an analysis of a model using rubber bands explores the changing interstitial spaces that correspond to the changing configuration of the malleable modular surface.*
A map of the Nichols Arboretum showing erosion patterns forms the basis for the design of a house for park maintenance workers. The house incorporates a modular system of horizontal and vertical planes. Walls that reference topographic lines on the site mark the extent of the architectural intervention while elements of habitation within the house are reduced to a series of horizontal surfaces. Placed at different heights in relationship to the human body these surfaces slice through horizontal planes and extend the programmatic interventions of the house into the site.



ROCK, PAPER, SCISSORS

Mick Kennedy

The transition from intention to detail is the essence of architectural communication. The translation from drawing to building involves more than the not-so-simple act of communicating architecture into the language of construction. Arthur Danto describes the transfiguration of the commonplace as the integral act of art making. It is in the belief that architecture shares that power of transformation, in material, spatial, and behavioral terms that our work has been framed.

What gets lost or left behind in this translation is the subject of our Wallenberg Studio. The studio assumes the interrelated roles of material, communication, and construction process are inherently related to explorations of space, form, and inhabitation. It focuses on the production of drawings and artifacts, the instructions for construction, that embody material and procedural specificity, yet seek to illuminate the transcendent characteristics of space and the ephemeral qualities of inhabitation. Questioning how these two sets of information might reside in the same artifacts is the ambition of the studio work.

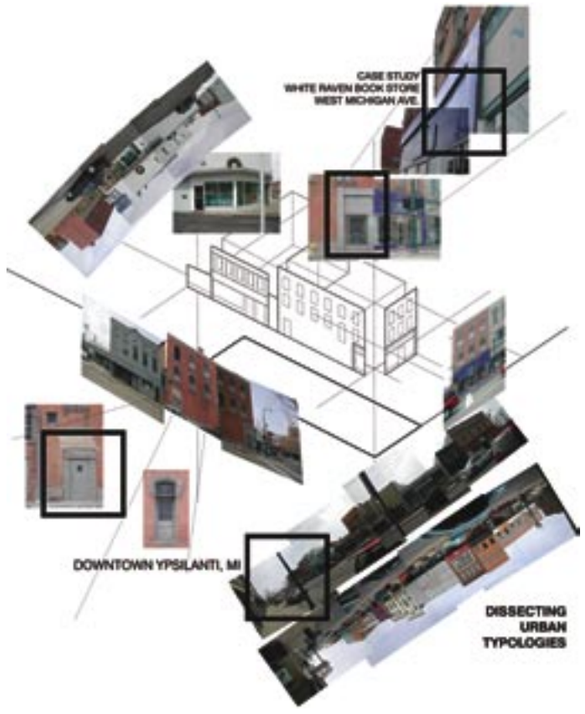
The studio investigates the relationship between the design of both objects and buildings and their translation into a physical, spatial, inhabitable world. It explores the physical nature of these objects, as well as a means of communicating architectural intention and the actions performed in their production. Craft relates to design choices based on knowledge of and research into the nature of materials and the process by which we manipulate them: research-through-making. The role of craft in architecture must address more than the objectification of form and the embodiment of process. Objects join with phenomenon to create environments and engender inhabitation—as much a verb in this sense as the term building.

The studio work consisted of two related projects. *Lamp, Chair, Screen* was an initial material, communication, and constructive study of objects with a narrowly framed program that defines a primary site and experience of inhabitation: illumination, seating, and spatial division. The process of making was traced through a series of critical construction documents that explore new means to communicate simultaneously design intention, material identity and construction procedure.

A second project, *A Shrine for an Imaginary Saint*, asks the studio to further explore issues raised in *Lamp, Chair, Screen* within the larger context of an architecture, multiplied or scaled, accommodating a program rooted in the transformative power of rarified human activity—sainthood. Regardless of specific religious associations, the realm of Saints, whatever their contemporary manifestation, resides somewhere between mortals and gods. The actions we perform within a shrine exist outside of our quotidian lives. The relationship between intention and action inspires the program of this architecture. It is the role of these places and actions that the project seeks to bring to the equally transformative processes of design, communication, and construction.

Laura Rosenberg: Inscribing the Body *An exploration of the use of line as a means to draw the body lead me to an understanding of the relationship between seeing and drawing. Description of the human body is resolved both physically and conceptually, and the drawing exists at the intersection of these two realms. I was interested in the way one perceives a line and how a method of representation effects one's thoughts about the body, specifically, how it might inform the thought process of designing a chair. I chose to explore this idea by inscribing lines within a set of figural drawings. Through this process I identified key points of support within different postures and defined lines for structure and for contact with the body. This creative process, inspired by my interest in the affinity of physical and conceptual space, reveals the language of line and the language of built form in terms of the method of production.*

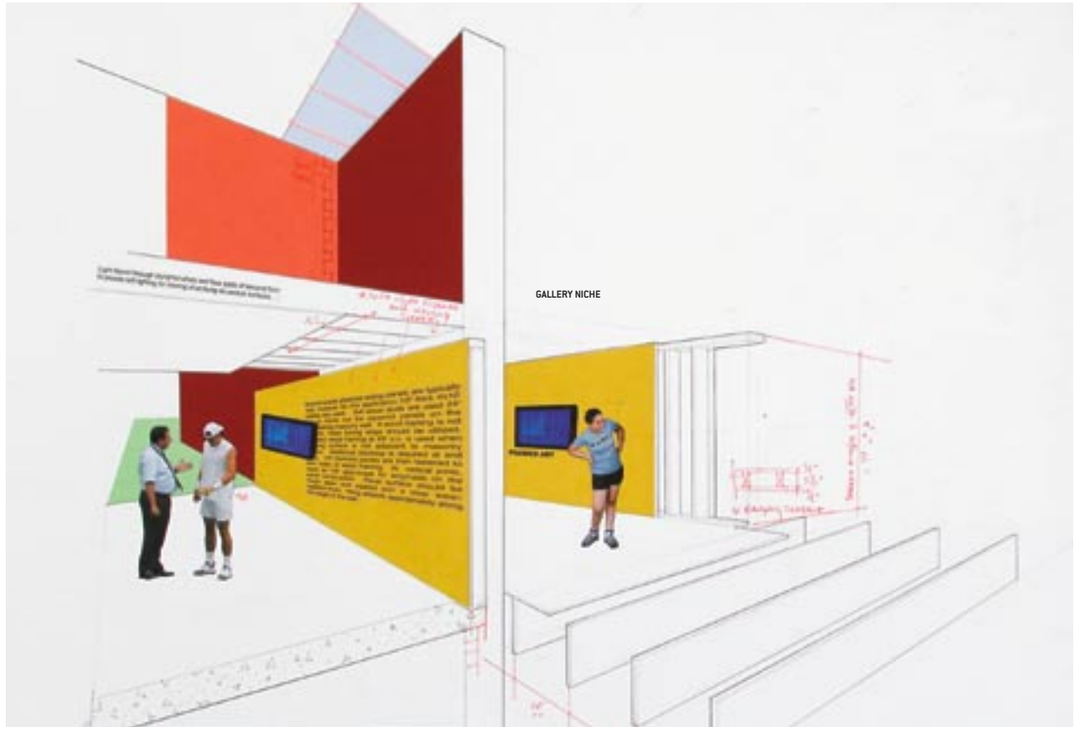
Angelique Pilon: Shrine to the Patron Saint of the Weary Traveler *A series of shrines to the Patron Saint of the Weary Traveler investigates both the forms and movements of the resting body as well as methods of representing the transient and ephemeral qualities of space and inhabitation. The shrines provide pauses and places of rest along a highway route that stretches from New England to southern California. A set of drawings compiled into a book reveals instructions for construction not through conventional forms of architectural representation, too often incapable of expressing the poetics of site, construction, and inhabitation; instead, the narrative quality of the drawings allows for individual interpretation of the instructions. The poetics of space found in the drawings are transformed in the act of making. Through this process of transformation, the shrines occupy not only a physical site but a larger landscape of the imagination brought to built form through the traveler.*

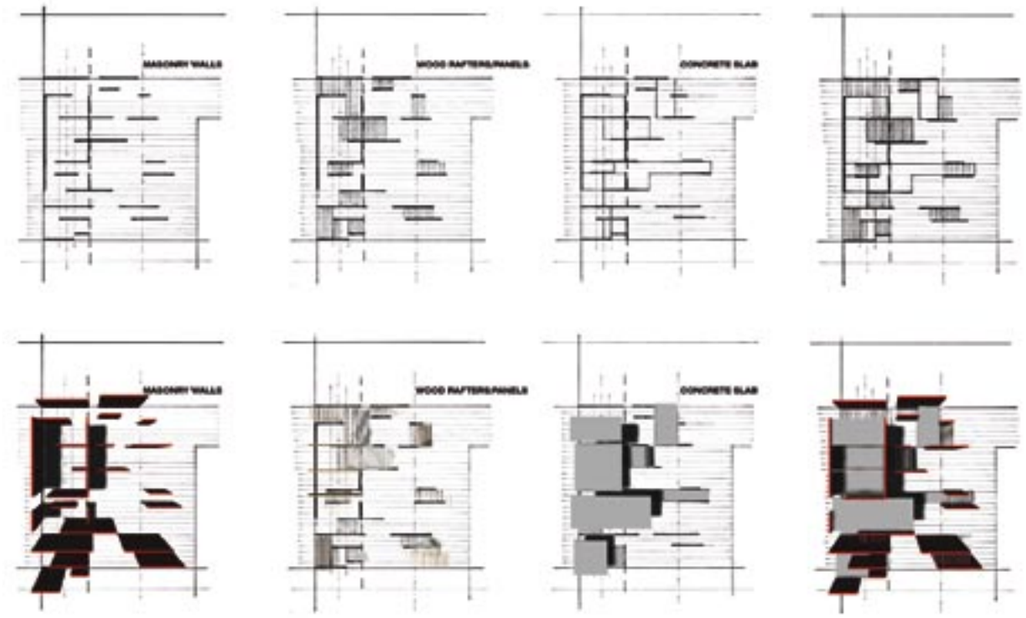


Amanda Christianson: Shrine to the Unknown Artist

A vacant building on Michigan Avenue in downtown Ypsilanti provides the site for a shrine to the unknown artist. The buildings along Michigan Avenue are clearly defined by their primary structural system—load-bearing masonry walls with spanning wood joist members. These parallel party walls set up regular, permanent boundaries of inhabitation. There is, however, a temporal nature to urban occupancy: brief occupancies, multiple tenants, additions, diverse programmatic uses. Over time, the front and side elevations of these street front buildings become layered with surface and structural modifications.

Masonry wall planes intersect to create intimate niches in which the transfiguration of anonymous art occurs through the acts of hanging and display. The sublime characteristics of the program are revealed through the construction—light from a skylight filters through a layer of wood joists onto a plywood wall; it is at this type of location where art is meant to be hung. While the program aims to create locations for the hanging of art, the construction techniques aim to communicate these programmatic intentions within the material language of the site. The simultaneous layering of program, construction, and site ultimately shape the space of inhabitation.





LECTURE

Jim Glymph

I am going to walk through the Disney Concert Hall Project and explore the evolution of computing at Gehry studio during the life of that project. The Walt Disney Concert Hall was a design competition in 1988. When it opens in October we will have been working on this project for fifteen years. Frank and I actually got together because he wanted help on the concert hall, that's how I began. The project started and stopped and was done in fits and starts, but is now pretty close to final completion.

This is Frank's sketch and he sees what he wants in this sketch. So then you have to build a physical model that tries to resemble the sketch in some way. That becomes the starting point. At this time the client group, who was afraid that Frank was going to build a concert hall out of chain-link fence, insisted that the building be stone. So we were looking at these shapes, and we were wondering whether or not you could actually build stone shapes like this in downtown Los Angeles, in a seismic zone, for the budget they had. Normally right around this time you'd go, "Well that's an interesting architectural direction, let's forget that and get on with the serious work of designing a building we can build." But, you know—Frank being Frank—we kept going.

We began to explore what was emerging in the stone industry at that time, which was the use of multi-acid CAD/CAM stone-cutting machines. We also found Catia, an aerospace three-dimensional modeling program that is both a surface and solid modeler. At the time, and I think probably still today, it was the most robust surface modeler available. It is based on nurb surface modeling, so it allowed us to actually map the building virtually—real dimensions, real clearances, real interferences. We still worked with physical models. We used a three-dimensional digitizer to bring those physical models into the computer. The shapes were refined in the computer, and templates were extracted from the computer model to create additional models at various scales. Then Frank would go back and work on the physical model and refine the shapes again. We tried to introduce the computer without interfering with Frank's design process that he'd been following at that point for thirty years. The advantage of being able to get it into the Catia software was that it was a fabricator's program that was set up with that mentality. You could do things like automatically extract machine paths based on a tool bit. You can input the tool bit design for shaping a surface, and the software analyzes it, and creates the machine instructions.

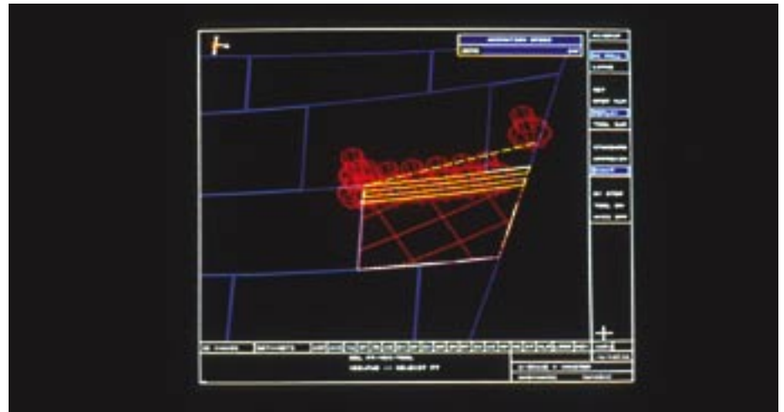
This capability allowed us to pursue the potential for procuring the stone in a different way. What we did was we jumped over everybody. We jumped over the project manager, the contractor that thought we were nuts, the guys who were going to do the installation, and said "let's work with the guy in the factory and see if this is really a difficult problem or not." There were two manufacturers in Italy working with CAD/CAM cutting equipment at the time. One of them had one of the most brilliant engineers I've ever met. She not only looked at the problem, she designed the machines and built them. Today there are over fourteen fabricators that we are aware of that work this way, and virtually everyone in Italy is CAD/CAM. So this allowed us to map the building. We came to understand the machine time, which was what the cost to cut the stone was based on, and were able to set up automated programming to give the machine instructions. The concept being we would go from the architect's three-dimensional model directly to the machine. We got bids on that and got ready to start the work. The rest of the project was massively over budget, but the stone was exactly on budget because we were essentially buying directly from people that we had worked the digital process out with, competitive people. Between the time we actually developed the idea and nine months later when we went out to find competition on it, the number of people who had gone into this multi-axis stone milling had increased from two to six. So you could see that there was something happening in fabrication that architects could take advantage of, and it gave you some new possibilities.

The concert hall was put on hold for a few years, but we continued using these CAD/CAM milling ideas pretty consistently going to the fabricators during the design phase and working with them directly in the development of the design. The Disney Concert Hall came back alive after Bilbao was completed, and so the city fathers decided, "he's not going to do chain link, let's get him to do metal." The design was changed from stone to metal to save money. It gave Frank the opportunity to go through the entire design again and basically not change it, but refine the forms. To my eye, this took Disney to another level in terms of the formal architecture.

By the time the project restarted, we were using what we call a "master model." We had three-dimensionally designed the building and detailed the building and worked with our engineers so that the structure was built three-dimensionally. Today we work in steel models where elements are true size and trimmed at connections. At the time of the concert hall bidding, the control model for steel was simply a wire frame model. This model was used on Bilbao successfully but has been a major struggle on the concert hall. The Bilbao contractor had to work with a wire frame. We were lucky that Bocad, a three-dimensional steel detailing program—whose development had been funded by four fabricators in Europe—happened to be in use in the Bilbao region. In Bilbao, they were able to take the information in Catia 3-D, bring it into the Bocad 3-D detailing program that was set up in their engineering department which was above the shop. The software also ran their CAD/CAM equipment, and cut all the steel to length, punched and grilled automatically. In the U.S., there was nobody doing this.

On the Concert Hall, the contractor used a program called X-Steel. He hired a group in the Philippines. They went bankrupt after the project started, and then they gave it out to three different detailers here in the U.S. What was interesting about that is two of these detailers were working in three dimensions (X-Steel) and one was working in two dimensions (Autocad). There was a tremendous struggle getting through the shop drawings, but everything fit together on the site.

The steel skin is developed with an aluminum back pan and curved members that define the profile of the panel. All the pan-



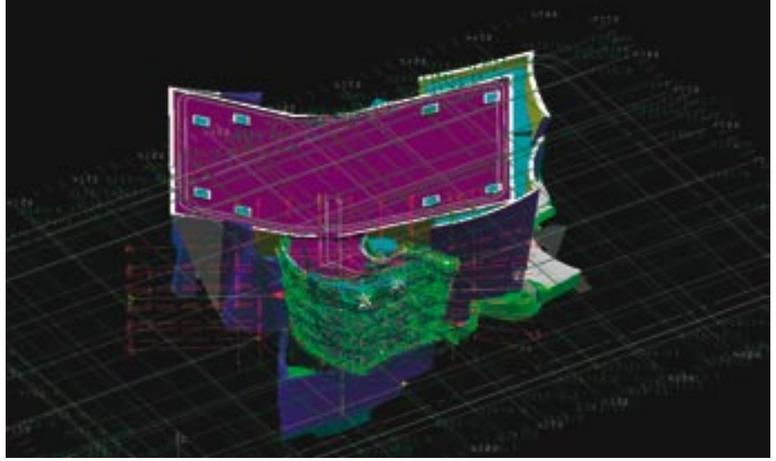
els lay down pretty nicely. There is a soft pillow in them. We used slightly lighter gauge than you would if you were trying to go for flat. The pillowing actually makes the building friendlier. It's a deliberate design decision. It also causes the walls to change in Los Angeles, depending on the time of day and how hot the wall is. It is either very flat or very pillowed.

The entire process was done by collaborating with the curtain wall fabricator, Permasteelisa, in the Catia computer model environment. Ultimately the shop drawings included a three-dimensional computer model that modeled every component of the wall. Our original pattern had been mapped on the surfaces based on paper surfaces. All transitions were made so that there was always a paper surface. We actually went through a lot of simulation and mock-ups to make sure the metal would lay down. Permasteelisa developed a face panel assembly for the metal thin enough so that it could be curved on site except for the tightest curves. The structure was imported from X-Steel into the master model so the curtain wall subcontractor was able to map the frame and all the detail points, build the components, then use laser surveying devices in the field, and finally lay everything out to an absolute zero. Nobody working on the concert hall used tape measures. You never measure distance between things; everything was placed based on its ideal location in space using laser surveying and the three-dimensional model. The metal wall system has gone together really very nicely. We're really quite pleased with how that's worked.

We have learned a lot. We've developed an awfully good set of surfacing programs that are based on the way the material behaves. If you do enough of these buildings, you can find when you push it too far, and pretty soon you begin to understand material behavior. One of my hopes, and I suspect it will happen fairly soon, is that we will have modeling tools that have material behavior built into them so that if you try to bend plywood more than it will bend, it won't let you, and that way you'll get some sensibility about materials in the computer modeling process. It will be a little bit sad when that happens because right now what happens is you have to work with the computer and a guy in the shop that knows material. You have to get him to understand the computer, and you have to understand what he wants out of it, and don't do anything but what he wants. You tell him what it's supposed to look like and the rest is up to him. You figure out how to make the tools to support him, and you will do more creative work for less money than the competition. So it is that partnership between people who actually are responsible for putting the pieces together and the architect that allows you to develop a sensibility about materials and form and the relationship between the two that will allow you to explore new architectural forms and do it successfully.

When you do your two-dimensional drawings and you do your nice set of working drawings, if you fall outside of that tradition, or even if you stay within it, does a contractor in a six week bid period really understand what he is committed to do? Have you really got it all coordinated? The answer to both of those questions is no. You can't fully coordinate the job. It isn't your job to, and it wouldn't be possible anyway unless you were able to pick every product from a single source and use just what you wanted without regard to cost or competition. Does a contractor have time to fully understand the job? Does he just bid right away based on two-dimensional drawings, sometimes hundreds, maybe thousands of them in weeks, and bet his company on it? And why is there antagonism between architects and contractors? It's because we've set up about the dumbest system we can possibly set up for doing architecture. It works well for doing buildings that don't change, buildings that repeat what has come before. It is why sub-developments repeat house plans. It is why all shopping centers look the same. It is not because the architecture is not creative, but because nobody believes that you can operate in this two-dimensional world with nobody willing to take responsibility and actually achieve anything else. The only way you can be sure that you can afford what you are doing is if you repeat what you've done before. So there is a relationship between design, fabrication, and the legal structure that has to be broken for the possibilities of technology to be realized. In single source design-build companies, everybody is under the same contract and all of these issues disappear. They are doing parametric designs of whole buildings; they are able to produce designs and construction documents for major chip manufacturing plants or oil refineries in three or four days, without errors, without changes, and a guaranteed price, just no architecture present. So this is something I think that you really want to look at in terms of how this is going to affect the profession. Parametric and relational design, I am not sure exactly how far you should go with this. You can actually use parametrics to design buildings. You can write parameters for a program and let the computer design the building. I sure know quite a bit about that. It's fairly popular to do that now.

That is not what we do. What we do is use it to allow us to change our minds as much as we want and still have the detailing be good, which is freedom for doing the design work. Right now the world you'll go into will not pay you much money for doing the design part. They'll want you to get to the working drawings, and if you explore things for too long, the cost of making changes to advanced drawings will kill you. It will put you out of business. Now if you parameterize the relationships between the basic components, then you can tweak and refine your building and recover your drawings by taking the most tedious part of the job and automating it. So the computer makes the old fashioned two-dimensional drawings, and you spend your time working in three dimensions or in the field or touching the material. I see a future where you're going to have a three-dimensional computer modeler and the material itself and need nothing else as a tool. All the rest of it can be automated, which is not automating design, it's automating everything except design.



CONTESTED URBANISM

TRUCK STOP

Jason Young

> *Most have shower rooms. Many have adjoining motels and lounges. There is almost always a shop of some sort, offering, at convenience store prices, a variety of necessities and non-necessities: maps, atlases, sunglasses, watches, CBs, TVs, knives, antennas, snack food, fruit, toiletries and over-the-counter medicines, cowboy boots, gloves, pants, shirts, baseball caps, truck accessories (chrome-plated lug nuts, seat covers, air fresheners), quick gifts for wives and children and sweethearts, coolers, music tapes, and audio tapes. Books on tape, one clerk told me, just fly off the shelves.*[1]
> *—Bryan Di Salvatore,* Truck Stop

After a sustained exploration of its messy material nature, it appears to me the city of Detroit poses a significant question regarding the relationship between the terms "city" and "urbanism." While these terms are practically interchangeable in the disciplines of architecture and urban planning, the confounding and often contradictory conditions found inside postindustrial American cities often resist the conventional turnstile connecting them. Detroit's radical spatiality certainly recommends a re-examination. The extreme conditions on the ground in Detroit suggest that fixed conceptions of the city may have been exhausted by the systems of capitalism that established them in the first place. To clarify the way in which the terms might begin to be separated, I would submit the city is but one of the resultant forms produced by processes of urbanization. Similarly, urbanism is much more interestingly defined as prevailing modes of economic development than it is by a city. This appears to be the case despite the city's position as the most celebrated and academically cherished resultant form of urbanization.

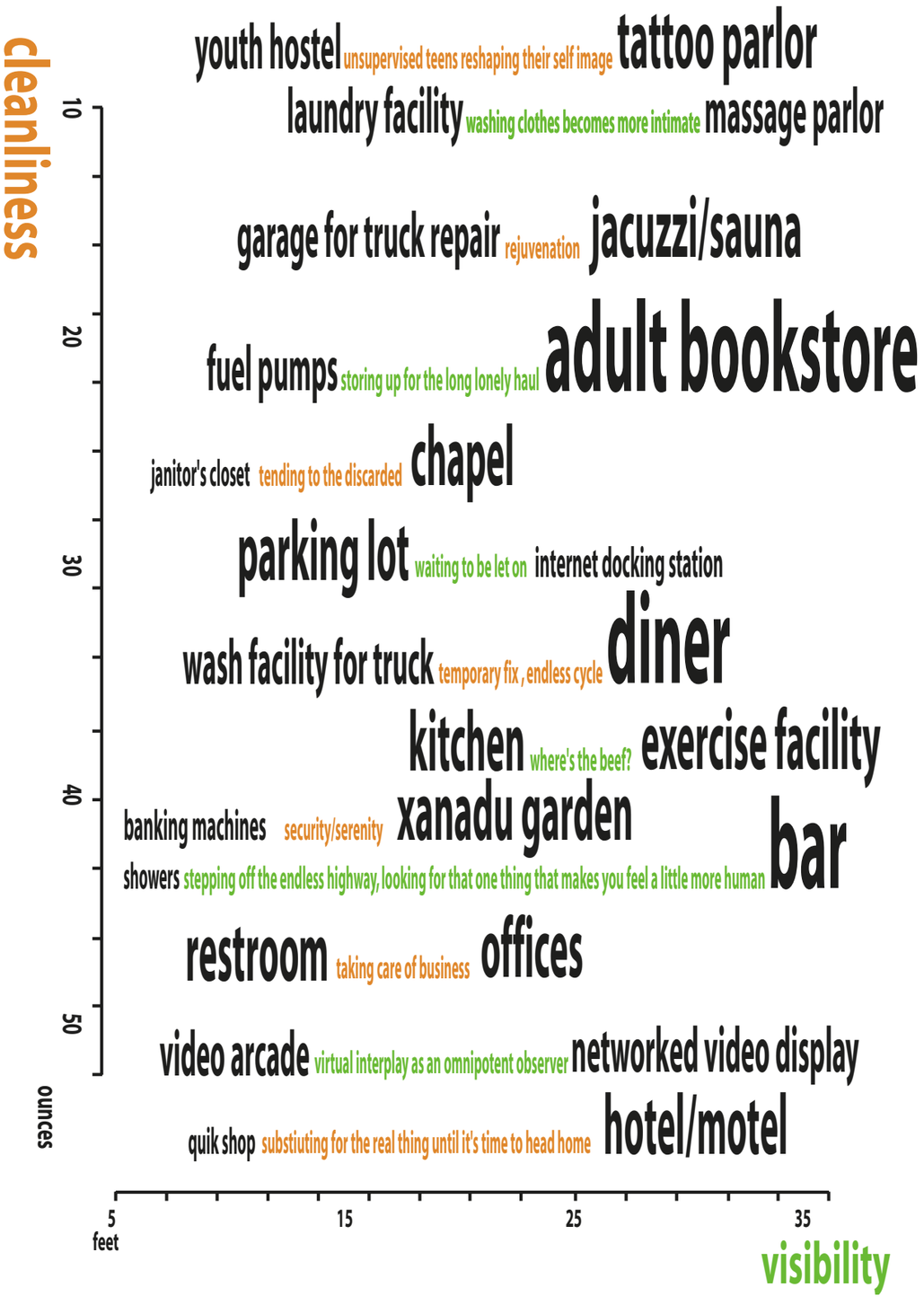
While there are many contests between constituents within the city, we are concerned here with the contest between the material condition of the city and urbanism at large. To put this contest into a fresh perspective, it is important to admit to an interest in non-canonical sites of urbanism—places that are truly urban yet definitely not cities. Often referred to as "suburban," many of these sites are significant given their frequent repetition and virtual ubiquity within the American lifestyle. Big-box retail, strip center developments, franchise space, corporate consumerism at the highway interchange: each is an example of an urbanism which falls outside of the comparative taxonomy of traditional, central, dense cities.

For the purposes of this essay, and the studio work that accompanies it, the truck stop serves as a site of inquiry. A curious inside/outside space of flow for capitalism, the truck stop may be the most truly congested place in American culture. A dazzling mixture of uses—the various programs of maintenance and of excess—blend dynamically at the truck stop, making its experience urban in nature. There is congestion, political struggle, social stratification, industry and commerce, church and state, possibilities of legal and illegal diversion. This is urbanism, and the city is miles away.

Why stop? This is the question on the mind of the trucker as he reads the billboard advertising the next truck stop, and this is the central question of truck stop urbanism.

The answer is in part a matter of maintenance—of the truck and of the driver's body. The truck needs fuel, air in the tires; it is time to check the oil. The body needs food, drink, and a break from the monotony of the highway. The federal government

Jackie Chavis



mandates that the trucker not drive continuously without a certain frequency of pause. The safety of the highway is as much a maintenance concern as is the performance of the truck. The bulk of the answer, however, has to do with the things in excess of maintenance: an opportunity to socialize with one's peers, the chance to infuse the routine of the job with variation, the time needed to reconnect with the family back home via the latest technology. With the facilities in place to provide for maintenance, the truck stop operator augments his business by tempting the trucker with provisions in excess: a twenty-two ounce steak, chrome accessories for the rig, a clean shower with hot water, a religious space for witnessing one's faith, seven variations of homemade pie, internet workstations, check-cashing facilities, video games, a bottomless cup of coffee, secure parking, a laundromat, personal telephones in every booth, pornography…it all sounds routine, but given the tight weave of the mixture, the diversions can become electric.

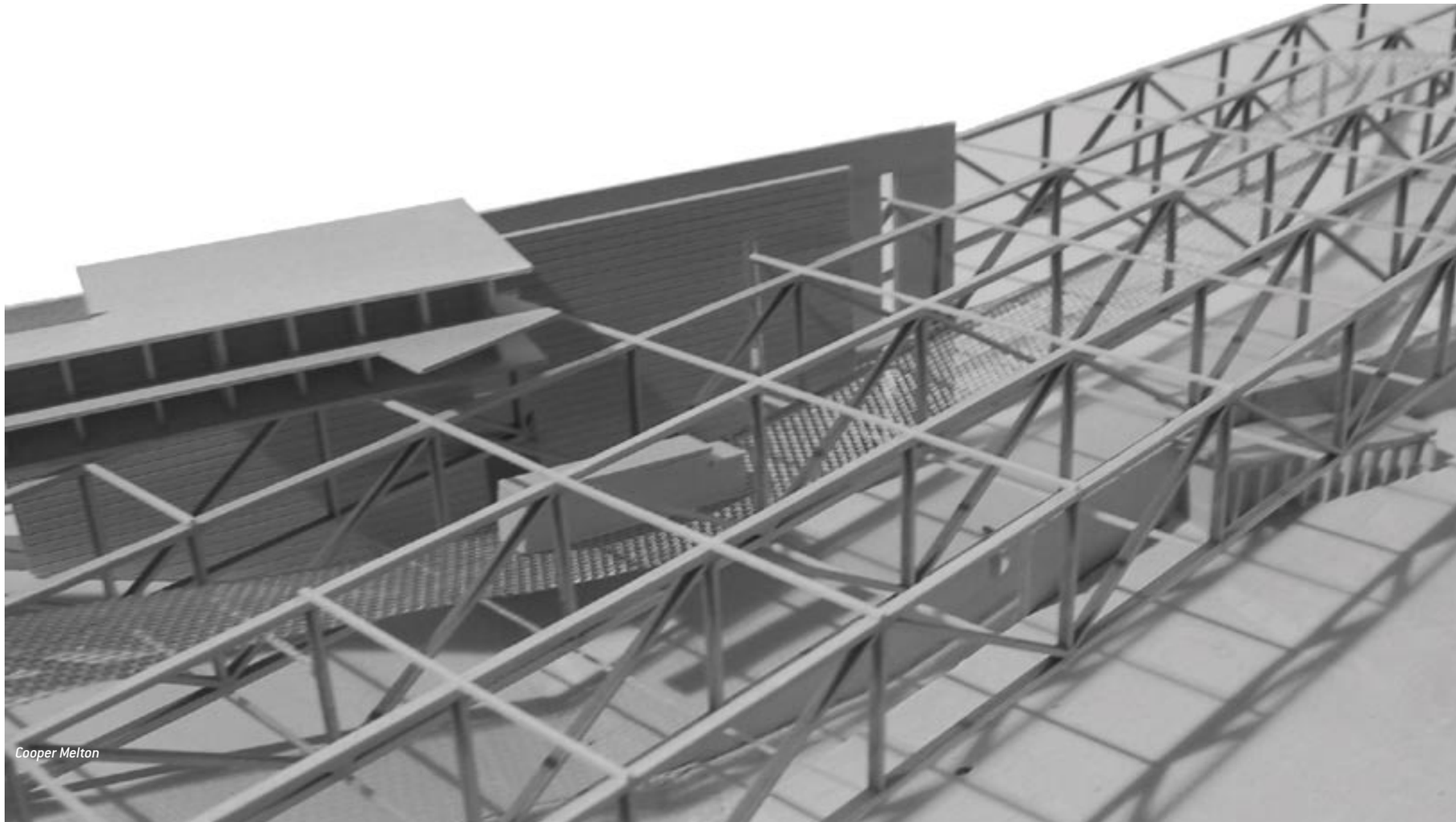
Urbanism here is a question of program in the architectural sense of use and activity. The truck stop offers the trucker a congestion of use. Based on their simultaneity, complex programs are bundled spatially in arrangements meant to produce expectancy and charge. Capitalism is driving this situation just as it drives every urban situation of mixed-use programming, including the city. It was Guy Debord, in his landmark book, *Society of the Spectacle*, who opened my mind to the notion that urbanism might be defined by the propensities of capitalism. I was particularly struck by his entry #169:

> *The Society that molds all of its surroundings has developed a special technique for shaping its very territory, the solid ground of this collection of tasks. Urbanism is capitalism's seizure of the natural and human environment; developing logically into absolute domination, capitalism can and must now remake the totality of space into its own setting.*[2]

Reading this entry, along with the others comprising Chapter VII, titled "The Organization of Territory," brought the realization that discourse on urbanism dominated by endless discussion of the form and spatial syntax of cities may be preventing more penetrating understandings; understandings that could be essential to arriving at incisive disciplinary strategies for urban work. Moving the question away from the polarized, city-specific debate between "new urbanism" and "post-urbanism" allowed for studio work exploring the very terms of urbanism in a manner free from the moral imperatives frequently embedded in both of these extreme positions.

Imagine yourself on the open road of the highway. Now imagine it for forty to sixty hours per week. Suddenly the thought of pulling into the truck stop seems important. It is your chance to expose the monotony of those seventy miles every hour to a basic, yet profound set of possibilities. The crowd in the diner seems both familiar and strange. There are other truckers, other travelers, and the locals, here for some reason or another. These are people you have never seen and may well never see again. While sitting behind the wheel is anonymous in its own way, here you are part of a larger dynamic—the crowd. Proximity is no longer mediated by the dimensions of the truck, which are immense, nor by the conditions of speed, which are extreme. You are there, alongside the other citizens of an urbanism that is larger than any one of your private desires.

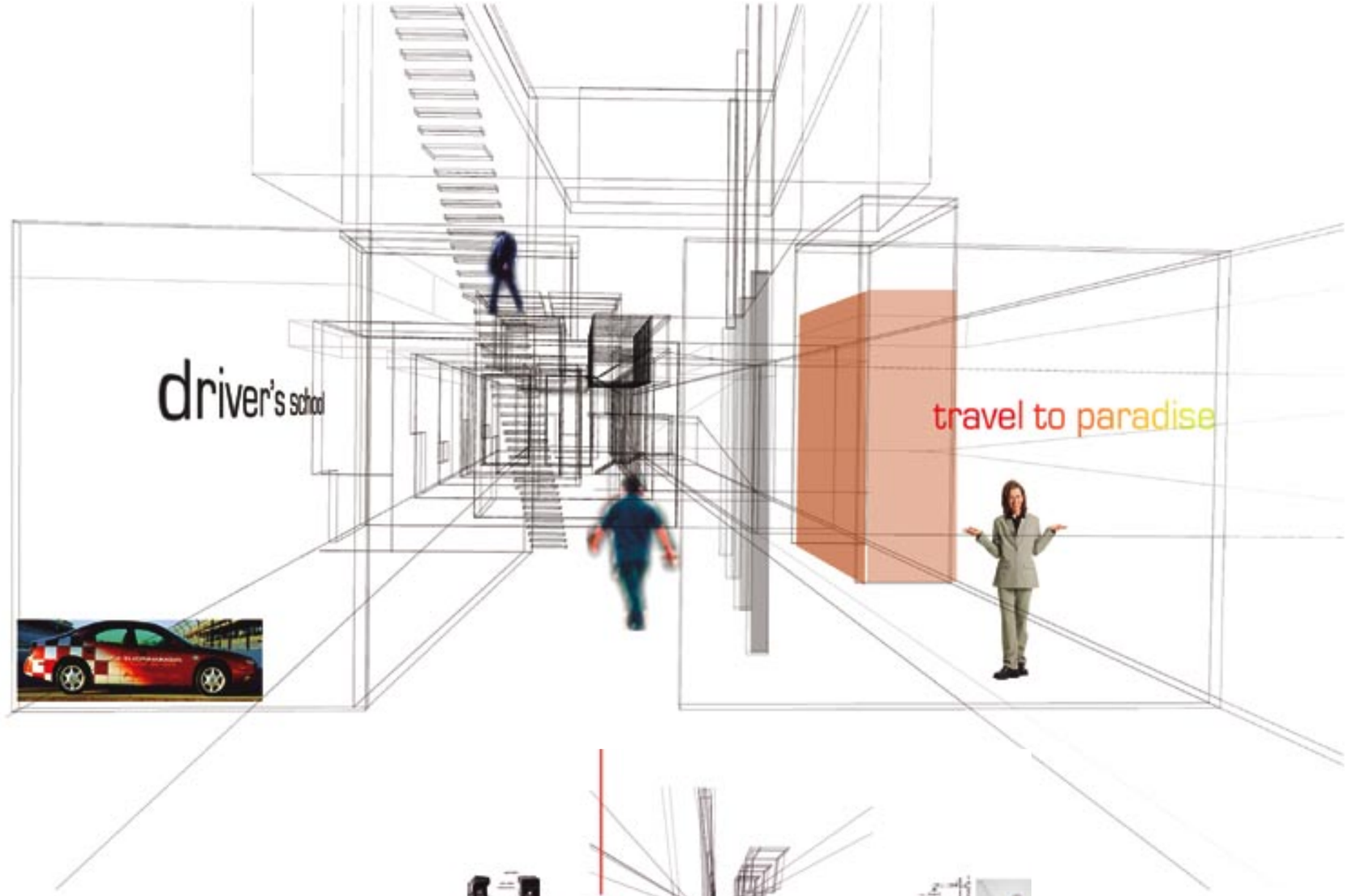
Negotiation leads to exchange. Routine yields to event. Anonymity leads to social interaction. The trucker trades money for time, and time for excitement. But his money

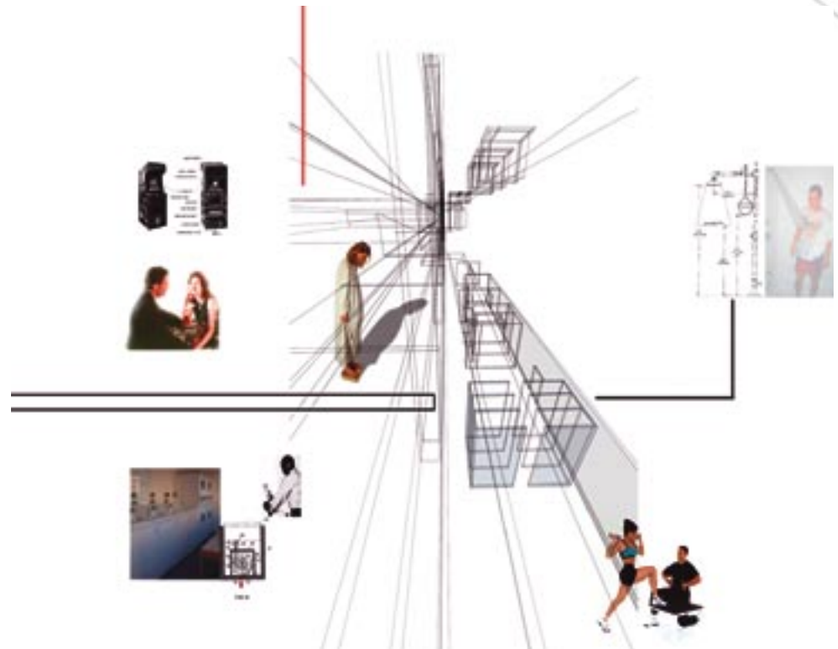


Cooper Melton

was already time. Literally. Truckers, their identity hemmed together by what they do (*hey truckers, keep on trucking*), move commodities through the nation so that they can reproduce themselves (again) inside the system that defines them. In this sense, the truck stop can be understood as an emblem for the movement of capital. At the truck stop, we can find a place to loiter inside the network of moving capital in order to move the capital. For the trucker, living and making a living unfold in the same space/time. Their truck is the loft apartment above their office, which is the highway. The truck stop is the neighborhood store, the newspaper stand, the coffee shop down the block, the local eatery, the girl next door...live/work never looked like this.

Notes
1. Di Salvatore, Bryan, "That's the Job," in *Truck Stop: Photographs by Marc F. Wise,* (Jackson: University Press of Mississippi, 1995), p. 33.
2. Guy Debord, *Society of the Spectacle*, (Detroit: Black & Red, 1983).





Murat Uyanmis

BUILDING +/–

Chris Knapp

In the book *The Ethical Architect: the Dilemma of Contemporary Practice*, author Tom Spector accurately summarizes the current status of moral and ethical decision making in the architectural profession as "the result of vague and unsustainable promises to society and of an unnecessarily narrow view of what constitutes an ethical outlook brought on by modernism's exclusive reliance on a philosophy of utilitarianism."[1] This modernist philosophy, initiated in the 1920s, attempted with great conviction to alleviate societal ills through universal design, yet by the 1970s, was found to be untenable.

Concurrent with this development was the gradual deterioration taking place in Detroit. At the height of its population density and urban enthusiasm in the twenties, Detroit found its point of declared "failure" at the same time modernism was finally confirmed dead by the structuralists and semioticians of the late sixties and seventies. To what degree did these parallel trends contribute to one another? The difficulties that plagued Detroit in the mid-twentieth century were indeed the "problems" that the Corbusian concepts of air, light, and greenery attempted to solve. And as history demonstrated, the social and economic collapse in cities such as Detroit was only exacerbated by the open, gridded, and austere interventions that modern architects placed in the city.

In the wake of these coinciding trajectories, the architect today must stake out an ethical stance to frame her decision-making process. This is not necessarily the AIA Code of Ethics nor a divinely inspired doctrine of goodness (although these examples could, and do, inform certain design practices). Rather, what is being put forth here is an assertion that ethics have a presence in all decisions made under the guise of working as a professional. Engaging in a process of defining what Architecture really is (the kind we all aspire toward, with the capital A) and on what basis it is evaluated develops one's sense of ethics. Is Architecture simply a building plus or minus some other attributes? If a built thing is dubbed "good" or "bad," within what framework is such a conclusion made? Does such a judgment assimilate the attitudes of all the constituencies involved, or is it only made from the perspective of the designer? It is unfortunately the case that such evaluations are often more limited in scope than broad, but this is perhaps due in part to the fact that an ethical agenda is one which an architect continues to develop and refine over a lifetime, rather than being an accomplishment achievable in the first years of one's practice.

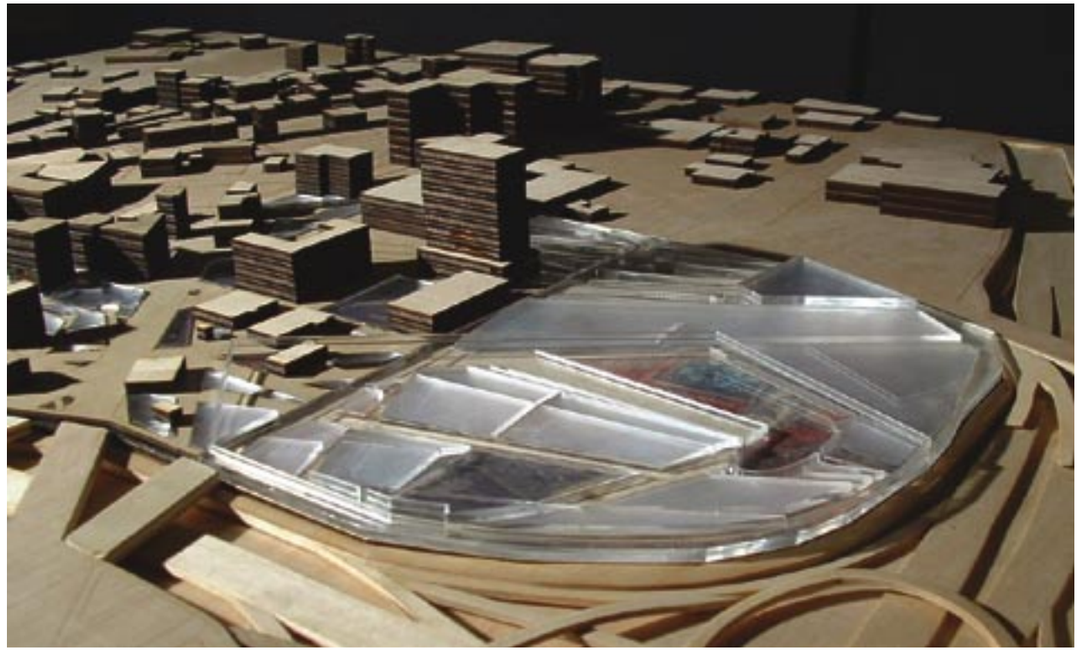
***Jarod Allen, Stephanie Metz**: This project is driven by an interest in vacant buildings. A "building-as-artifact" was selected on Michigan Avenue in Detroit, based on its dormancy and its potential as a host for an architectural intervention. Issues of materiality and form were broken down into seven elements and with these elements in mind, the building was mapped two and three-dimensionally. The resulting proposal seeks to activate this building and seven others along Michigan Avenue by employing a series of reconfigurations and/or new constructions that work in response to one of the seven elements used to study the found building. The project is devoid of program, and the future addition of a particular program is not within the proposal. These buildings have the potential to be successful as vacant spaces; to narrow this potential through the specificity of program would take away from the latent meaning that is brought to them upon their activation. While still remaining vacant these structures will move on from their dormant status.*

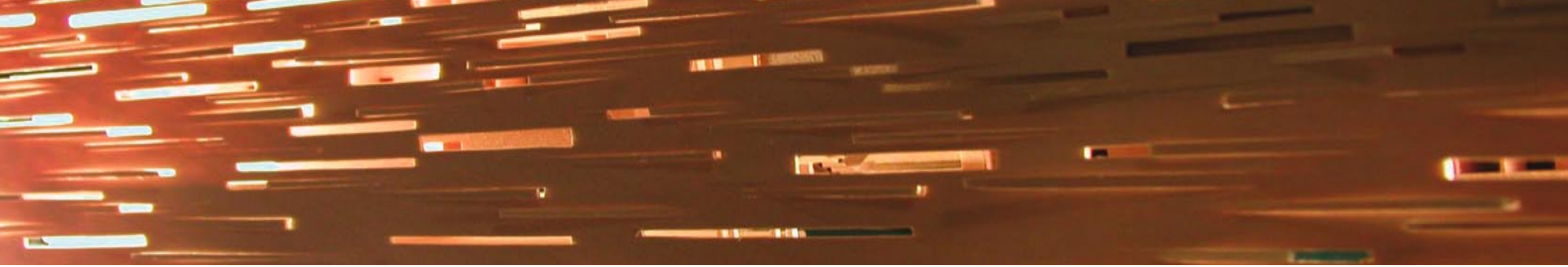
Both obliquely and directly related to this question of ethics is a second front upon which the architect must stand: the means of practice. The basis upon which one decides to operate is indeed nested within the qualifiers and values of the ethical discussion. Critical to this is maintaining a balance between default conventionalism and extremist avant-gardism. In any given design scenario, it is important that the architect evaluate the situation on its own terms and not allow preconceptions to funnel possible outcomes with egoistic determinism or formulaic precision. In the preceding example, one can separate from modernism its ethics versus its practice. As is common today, one can achieve the aesthetics and formal strategies of the genre without subscribing to the utopian theory that was at modernism's core. Yet what is entirely crucial is recognizing that subscribing to a given approach, such as the minimalist/technological approach of today's neo-modernism, is still ultimately limiting. Without releasing practice from preconceived foundations, engaging the city through architecture will continue to produce both the expected, and unintended, results seen in the past.

The philosopher Michel de Certeau offers a useful perspective in bringing an unbiased attitude toward practice, particularly in terms of the city. In *The Practice of Everyday Life*, de Certeau differentiates between the concepts of strategies and tactics. Strategies are an outcome based system, which enacts the steps necessary for achieving desired goals, or "an effort to delimit a place as its own and serve as the base from which relations with an exteriority can be managed." Tactics serve an inverse, and in this case, more appealing counter to strategies. "A tactic is a calculated action determined by the absence of a proper locus," [2] writes de Certeau, noting that the tactic is autonomous, ephemeral, and mobile, much like the concept of "becoming" in the work of Delueze. It is in the notion of tactics that one might practice architecture with the greatest energy, intuition, and freedom through simply observing and experiencing the city, which is itself the result of a strategy.

If one understands the concept of "contested urbanism" to mean the spatial outcome of competing political, social, and economic interests in the city, then the strategy/tactic of duality becomes quite productive. As a means of practice, the adaptation of tactics to understand the city requires direct participation in it. By revisiting the city with this new mindset, one does not go there looking for something, but rather enters the city waiting to be provoked, to be instructed by its milieu of animate

***Gabriel Abbott, Michael Piche, John Steven**: Along Michigan Avenue signage is everywhere, saturating the environment. Each advertisement competes with the next for the eye's attention. Due to its sheer size, the most dominant presence among these signs is the billboard. A building located at 1721 Fifth Street, bordering the intersection of the Lodge Freeway and Michigan Avenue, has one tenant, generating $150 per month in rent compared to approximately $10,000 per month generated by the advertisements attached to its façade and roof. At a time when Detroit requires attractions to generate patronage, this project proposes using advertisement to create a symbiotic relationship between owner and user in an urban park. The park attempts to link larger programmed areas (ice rink/fountain, ampitheater, drive-in, exhibition space, fields) to other Detroit attractions with intense advertising found in a series of smaller, rentable, multi-use parks. The location of paths through the park are governed by connections drawn from existing advertisements currently found throughout Detroit, as well as a series of nodes on the site where spaces and activities are most likely to be viewed.*





and inanimate subjects. Working on the city in a conventional manner, one might make maps/plans, take photographs, and even conduct interviews—all activities which immerse the designer in the site of intervention. However, to spin these activities with a simple change of nomenclature to "hovering above, living in, and digging"[3] respectively, the implication of the research is modified. The results become less expected, less predictable, through changing one's point of departure into practice.

Ultimately, the dialectic exchange between the formation of an ethical basis for decision making and the development of a liberating method of practice can perhaps be best summarized by looking to John Rajchman's writing on lightness. As with de Certeau, Rajchman champions developing a new schema. "Simple analogy provides a restricted relation between concept and design. To try out a concept is to risk another freer, more mobile, more experimental sort of relation, where a concept is not shown in a single formal trait or signature but assembles and reassembles many different design features...in an original manner, linked to a larger complex that looks to architectures yet to come."[4] While more a statement of strategy than tactic, this discussion provokes the reader to understand lightness in many other ways, beyond common associations of immateriality and transparency, to analogous and disparate possibilities of release, nomadism, freedom, gravity, and formlessness. An attitude of lightness might release the architect from the apparent burden of ethical responsibility by opening up other questions or qualifiers, and as such, thinking light can expand one's system of practice to engage architecture and the city through utilizing what has been there all along, yet seen in a new light.

Notes
1. Tom Spector, *The Ethical Architect: the Dilemma of Contemporary Practice* (New York:Princeton Architectural Press, 2001).
2. Michel de Certeau, "Making Do," in *The Practice of Everyday Life* (Los Angeles: University of California Press, 1984), p. 29-42.
3. A tactic used by Mary-Ann Ray and Robert Mangurian.
4. John Rajchman, "Lightness," in *Constructions* (Cambridge: MIT Press, 1998), p. 37-54.

***Karl Kowalske, Jenny Butler**: Beginning with an exercise mapping Michigan Avenue, the tension between observation and experience was explored through an analysis of the spatial, economic, and functional relationships between a Baskin Robbins and Dunkin Donuts housed in the same building. From this analysis, the proposed design intervention attempts to suture a severed connection between a commercial and residential area of Dearborn by proposing a combined fitness center and hotel. While the design independently addresses the spatial, economic, and functional needs of the separate franchises (Bally's and Radisson), it introduces another level of efficiency by combining mutual programs. While maintaining the integrity of the original entities, the design provides "lobes" of programmatic interaction where the user realizes his or her place in a matrix of mutual relationships, i.e. a hotel guest fully engages the hotel but realizes the presence and potential benefit of the fitness center. This programmatically combinatory structure connects two independent sections of Dearborn through the activity and interactivity of people and mutually benefits both franchises and users.*

PLAUSIBLE SPACE

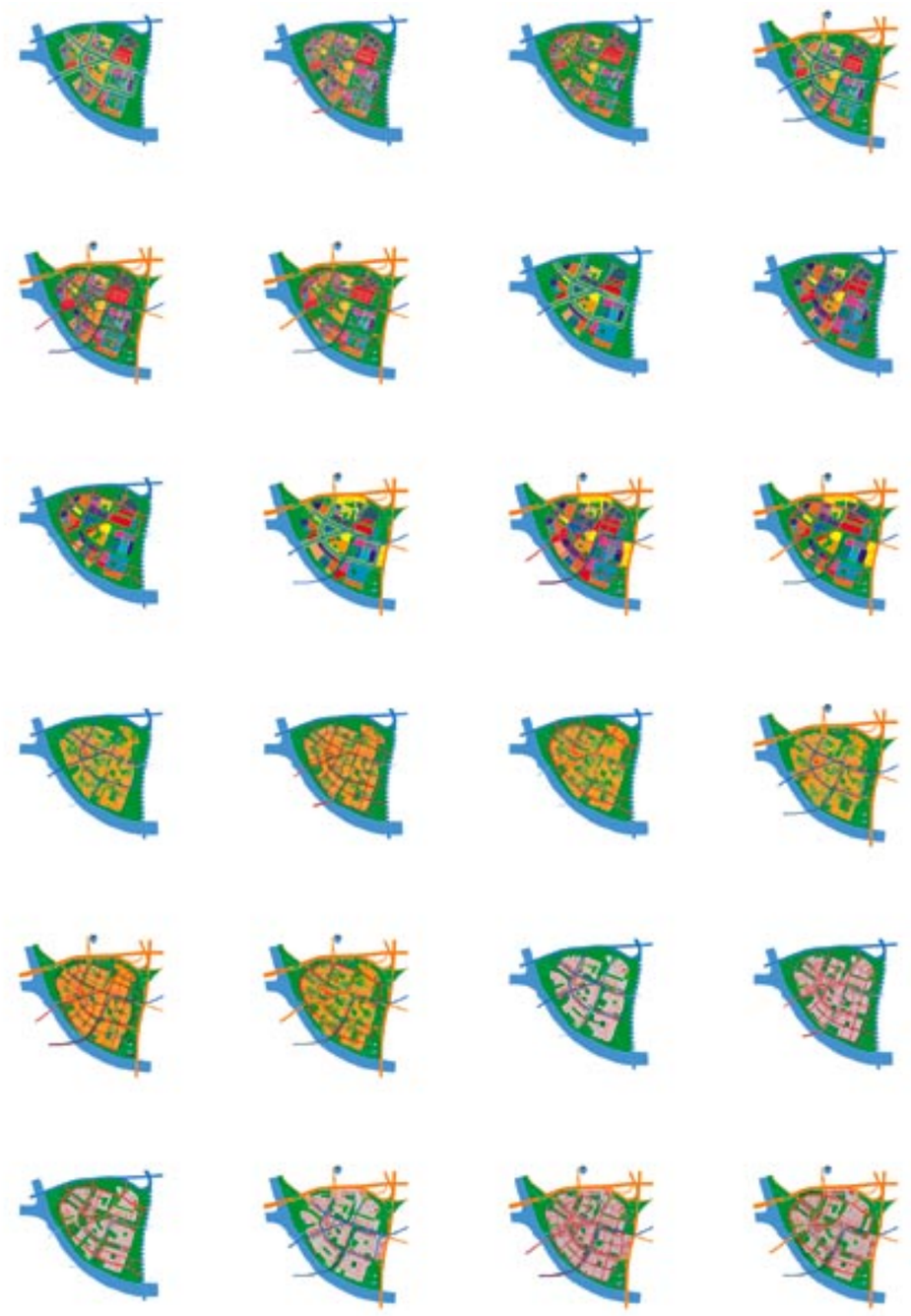
Michael Speaks

From the moment Herman Kahn used the term "scenario" to describe the unimaginable though nonetheless plausible futures he was scripting in *On Thermonuclear War* (1961), planning, and the future itself would never be the same. A military strategist at the Rand Corporation in the 1940s and 1950s, founder of the Hudson Institute, and widely acknowledged as the inspiration for the Peter Sellers character in Stanley Kubrick's cold war satire, *Dr. Strangelove, Or: How I Learned to Stop Worrying and Love the Bomb* (1964), Kahn pioneered a speculative approach that eschewed predicting the future in favor of developing multiple futures narrated in the form of scenarios or stories. Kahn believed that in order to achieve strategic advantage over adversaries one must be prepared for any eventuality and in order to be so prepared it was necessary to think through numerous, often unlikely, scenarios.

Scenario planning, as this approach later came to be designated, was radically transformed in the 1970s and 1980s by planners at Royal Dutch Shell in the Netherlands who sought to discover how company operating plans could "learn" and change over time. Due largely to the influence of Peter Schwartz and the Global Business Network he and others founded in Emeryville, California, in 1987, scenarios are becoming one of the most powerful tools available to long term planners and strategists. Slowly gaining acceptance in the business and policy sectors, scenarios have with rare exception been used to think about and plan extremely complex entities such as cities. Still dominated by the utopian belief that they can see into the future and predict what shape or form the city should take, urban planners focus all their efforts on designing a definitive, master plan that, by virtue of its fixed formal characteristics, will not change over time. Given this, it is not hard to see why scenarios, which emphasize interactive, time-driven processes, have been largely ignored or ridiculed by urban planners. But that is changing. As urban planners begin to realize what those working with scenarios have known all along—that it is impossible to predict the future and therefore impossible to design the plan that can accommodate that unknowable future—time has become an ever more important factor in planning. An entire new generation of urban thinkers, for example, now argues that the city is not a fixed spatial form but is rather a dynamic form of life that undergoes almost constant transformation as it adapts and evolves in time. For these new thinkers, spatial planning is no longer an effective means of planning the city and has given way to the more interactive and speculative planning of plausible spaces.

Maxwan, an architecture and urban planning office in Rotterdam, for example, has created a plan for Hoogvliet, a suburb of Rotterdam, that forgoes fixed spatial planning in favor of a time-based, interactive, urban gaming process they call LOGICA. Scheduled to be played out over a ten-year period, Maxwan devised a game with rules and a fixed set of predetermined choices that allow all stakeholders—Hoogvliet citizens, developers, city officials, land agencies—to participate in planning the city. The game was designed to allow stakeholders to decide "yes" or "no" on four urban scale choices—whether, for example, new urban parks should be scattered in little parcels among the housing or lumped together to form one big park. For Maxwan it was not important which choice was made; it was only important that these four urban decisions be made by Hoogvliet and that the choices be irrevocable. These fixed choices would then lead to other options that ultimately generated a matrix of twenty-four possible plans for the city, twenty-four plausible spaces. The game was first played in a series of eight "LOGICA Council" meetings last fall in Hoogvliet, in which stakeholders, employing various interactive media, designed the twenty-four plans. Stakeholders were thus encouraged to interact with the future by creating and occupying these twenty-four plausible spaces. The objective was not to complete or realize a master plan drawn up by planners but to use the "game-plan" as a form of urban negotiation entered into by way of plausible space. As planners, Maxwan focused on designing the initial four choices and the rules of the game; what results from those choices and how they are to be developed, is left entirely to the discretion of the stakeholders. In this way the plan "learns" over time and adapts to the needs of the community, but always under the guidance set out in the rules and the initial four choices. The planning of formally fixed spaces projected into the future thus gives way to the planning of fixed but negotiable plausible spaces that enable the plan "to learn," adapt, and change over time.

Part of a ten year urban planning experiment entitled WIMBY, "Welcome Into My Backyard," headed by Crimson, Rotterdam-based research and planning office, LOGICA was made the official city planning document for Hoogvliet earlier this year. As with other urban gaming forums like Sims Online, LOGICA shows that plausible space, while not space in any conventional sense, is a real space where a real community has formed to design and live in a city in real time. Plausible space is a reality that we are only just beginning to understand even though we seem to have been living it since the onset of the Cold War. Despite extreme conclusions he reached—such as, for example, that nuclear war was winnable—Kahn gave us a way to think about the future that we are only now beginning to fully appreciate. Launched in the midst of cold war paranoia, scenario planning and the plausible worlds it scripts collapse the lines we draw between fact and fiction, between real people like Kahn and characters like the one played by Peter Sellers in Dr. Strangelove, and between the real space that we plan to live in someday and the plausible spaces of real time that are the living fabric of our lives. As these lines become more blurred we may eventually come to realize that we have never really lived in space at all but have always and only occupied plausible spaces in real time.



BORDERLANDS

Gretchen Wilkins

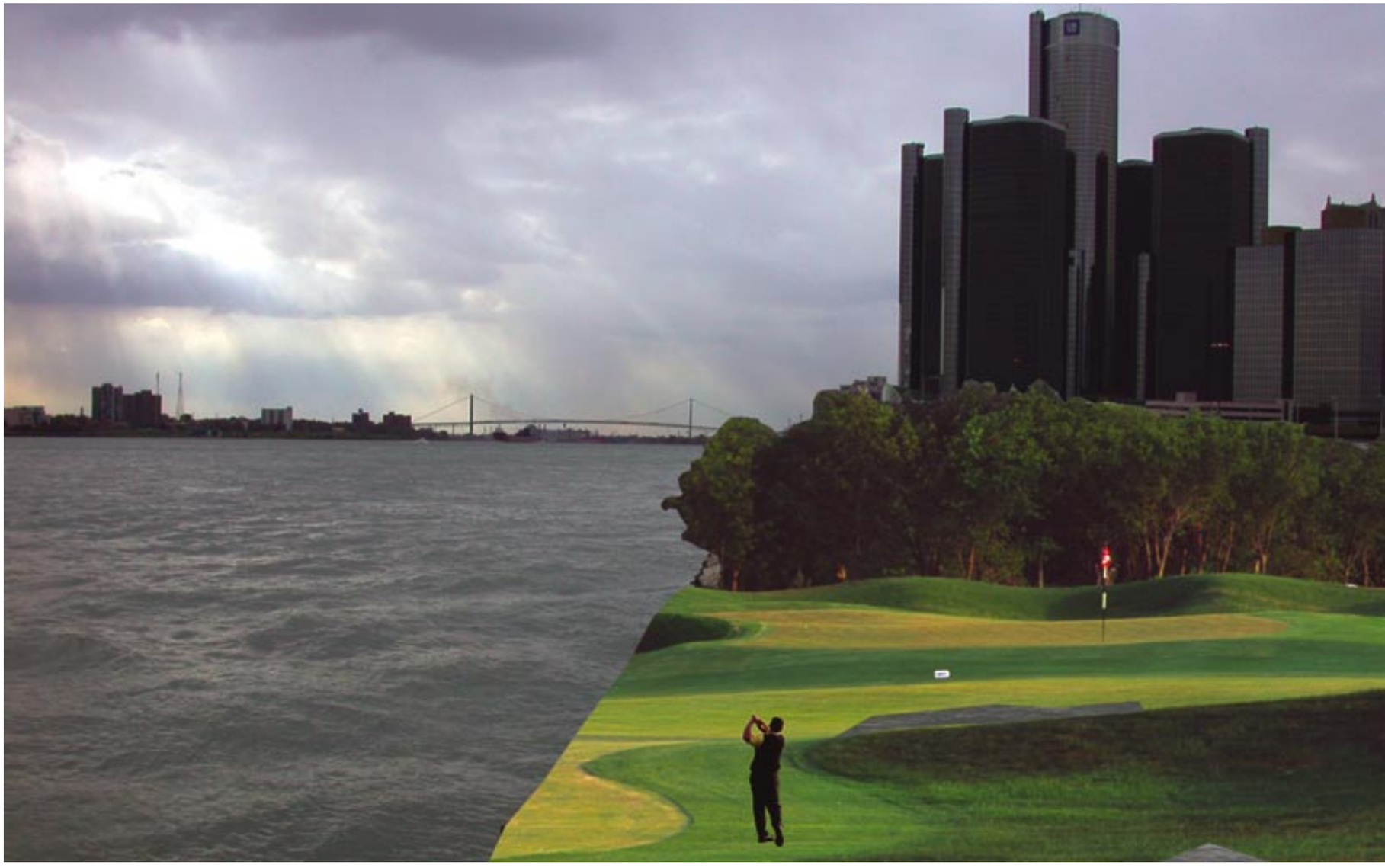
In 1874, Mark Twain commented on the social implications of the Mississippi River, a contested political and geographical boundary defined by movement and fluctuation over a delineated territory. Twain observes:

> *The Mississippi is remarkable in still another way—its disposition to make prodigious jumps by cutting through narrow necks of land, and thus straightening and shortening itself. More than once it has shortened itself thirty miles at a single jump! These cut-offs have had curious effects: they have thrown several river towns out into the rural districts, and built up sand bars and forests in front of them. The town of Delta used to be three miles below Vicksburg: a recent cut-off has radically changed the position, and Delta is now two miles above Vicksburg. Both of these river towns have been retired to the country by that cut-off. A cut-off plays havoc with boundary lines and jurisdictions: for instance, a man is living in the State of Mississippi to-day, a cut-off occurs to-night, and to-morrow the man finds himself and his land over on the other side of the river, within the boundaries and subject to the laws of the State of Louisiana! Such a thing, happening in the upper river in the old times, could have transferred a slave from Missouri to Illinois and made a free man of him. The Mississippi does not alter its locality by cut-offs alone: it is always changing its habitat bodily—is always moving bodily sidewise.*[1]

The Mississippi River, a significant geological and political demarcation in the United States, defies clear authority due to its natural fluctuations with season, topography, and weather. Despite efforts of the Army Corps of Engineers to straighten the river in the 1930s for ease of transport, environmental forces continue to expand and contract, bend and straighten this seemingly fixed political line. Borders are quite often defined as limits of control, yet the boundless energy of this U.S.-appropriated borderline challenges the roles of authority. As Anuradha Mathur questions: "Is the Mississippi River a defined entity within a larger material and cultural landscape that exerts an authority over it? Or is it an identity unbound, a landscape that exercises its own authority?"[2] The designation between borderline, the delimitation of excises of authority, and borderland, the territory being delimited, becomes an appropriate and significant means through which to more fully understand the spatial, urban, and programmatic implications.

BORDERS: PERMEABILITY AND AUTHORITY

The border between the United States and Mexico is one of the clearest examples of a contested terrain, operating as a selective border which is permeable in some ways but opaque in others. It is the busiest land crossing in the world and also one of the most heavily fortified, demonstrating the constant tension between NAFTA's need for economic and industrial permeability and the political need for control. A symbiotic economic interest between the United States and Mexico necessitates easy border crossings for imports and exports, travelers and tourists, investors and their money. At the same time the Immigration and Naturalization Services and the border patrol continue to invest increasing capital in high-tech surveillance equipment in an effort to maintain the image of national authority, security, and power. Faced with the need for simultaneous conditions of permeability and fortification, the U.S. government faces a predica-



ment: how to maintain a border that permits the free flow of capital and goods while denying the free flow of people?

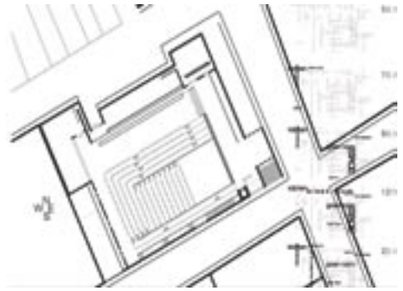
Another example of a selective border is HavenCo, a newly established data haven located on the independent Principality of Sealand. Originally called Roughs Tower, Sealand is an artificial island built during WWII as part of a complex of anti-aircraft forts off the coast of England. Abandoned after the war, the sixty foot high, six thousand square foot steel deck in the North Sea was occupied in 1967 by Roy Bates, a British war veteran. Because the borderline of Great Britian's international waters only extended out three miles from the shore at this time, Bates quickly renamed the island Sealand, declared its independence from Great Britian, and appointed himself the nation's prince. Bates, his wife, and son, the Royal Family of Sealand, have ruled the passport-issuing, currency-yielding micronation in the North Sea ever since.[3]

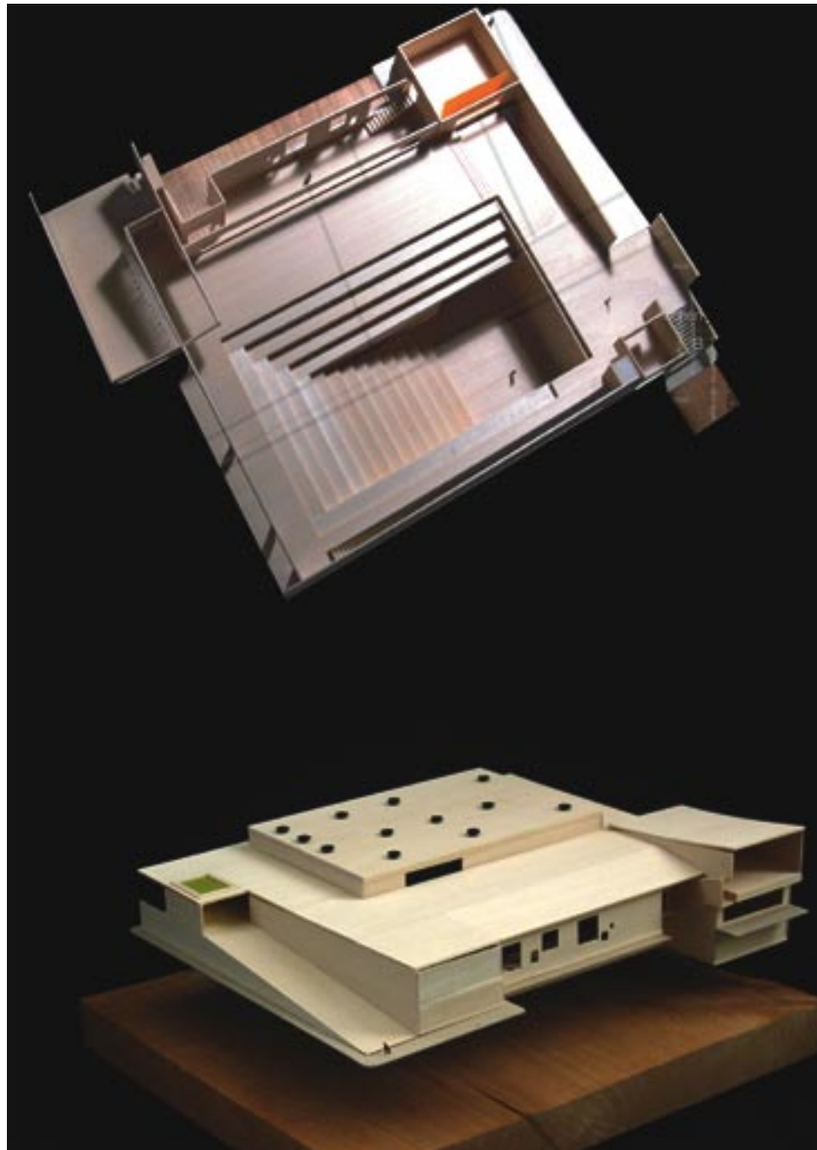
In 2000, a group of entrapaneurs secured Sealand as the site for their new business, HavenCo. HavenCo transformed this abandoned WWII gunnery fort into a high-tech collocation facility which, because of its strategic international location, can offer complete security for sensitive information. HavenCo pledges to destroy investor's data rather than let it be captured—rendering typically regulated or illicit activities such as anonymous bank accounts, internet gambling, and untraceable email all legal activities in this independent micronation. The unique border conditions of Sealand deny accessibility of human occupation while permitting the free flow of information and currency, a selective borderline which facilitates digital and economic exchange precisely because of the inaccessibility of its physical terrain.

The centralization of information employed by Sealand to maintain claim to the "world's only true free-market environment"[4] is precisely the format responsible for shutting down internet company Napster.com. Napster, the file-sharing program that allowed independent and remote personal computers to swap copyrighted music files, maintained control of member transactions through a central server. This server facilitated the process of uploading, downloading, and file organization for all remote locations logged onto their common website. The centralized source of information allowed the Recording Industry Association of America to clearly assign blame and order the website to control unauthorized copyright infringements. In contrast, programs such as Gnutella or Kazaa are not subject to this type of regulation because they have developed a form of open architecture that is completely decentralized and structurally labyrinthine. An endless web of data resides on and communicates through every participating computer and is therefore not technically managed or controlled through any single independent entity. By erasing any trace of proprietary borderlines, these systems evade control from copyright authorities. Gnutella and Kazaa have deemphasized the borderline in favor of a stronger, network system of fluctuating, anonymous border-territories.

DETROIT BORDERLANDS

The contested authority of the Mississippi River, the U.S.–Mexico border, and internet file-sharing systems introduce the multiplicity of geographical, political, economic, and social boundary conditions. Calling into question the differences and continuities that take place from one point in space to another, borderlines transform seemingly neutral spaces into complex and contested terrain. Operating within this critical context, the Borderlands studio posited borders as sites of negotiation between



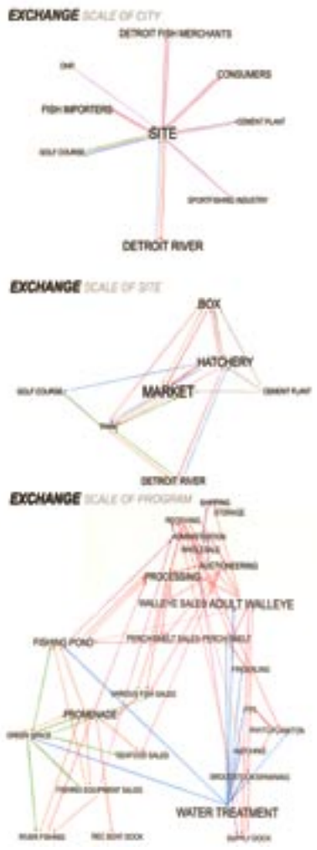


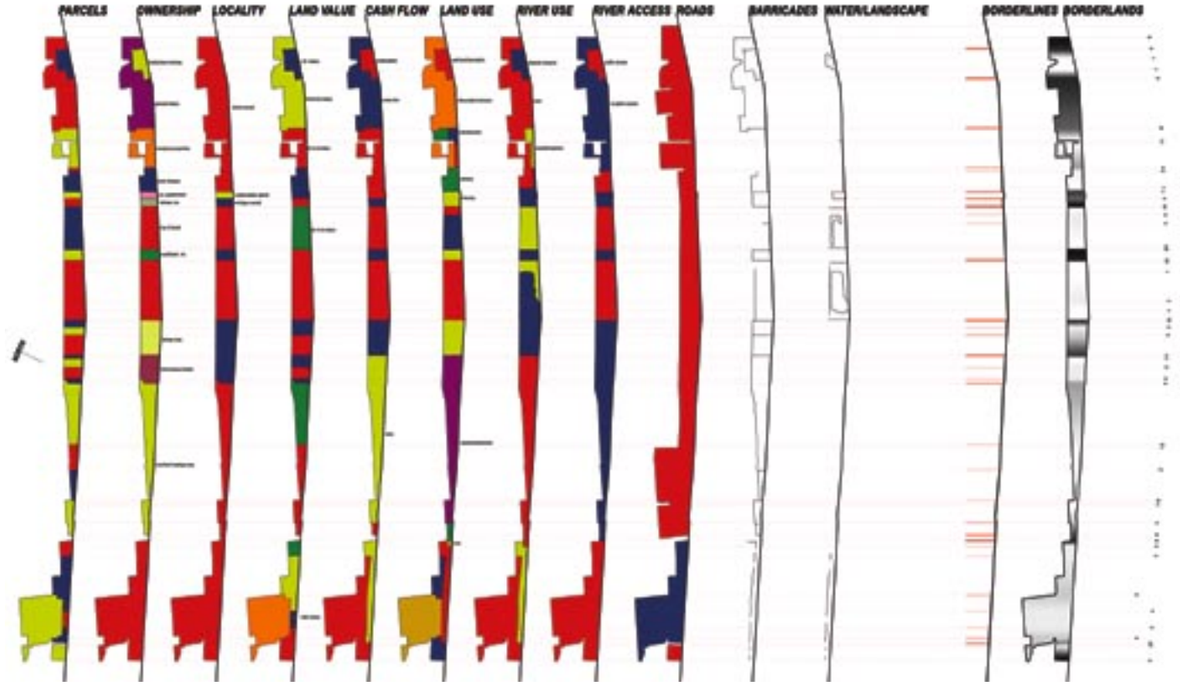
Randall Knight: Dinner/Theater *Randall's project explored intensive border conditions in Rivertown, Detroit, analyzing the borderlines produced through property values, ownership, inhabitation, and vacancy. The project, a variation on the traditional dinner theater, attempts to conjoin the spectacle of dining with that of theater, creating an architecture which reconfigures the borderlines inherent between the two. Consideration to ideas of threshold, aperture, and movement orchestrate the participant's experience of the city, the site, and the events inside. The location of the building within the patchwork of the riverfront site intensifies borders of value and use, while altering those of vacancy and program. By injecting the site with intense moments of program, especially those that occur over the twelve-hour day as opposed to only in the evening, the project acts as a seed to future development and a hinge to sporadic forms of occupation already extant.*

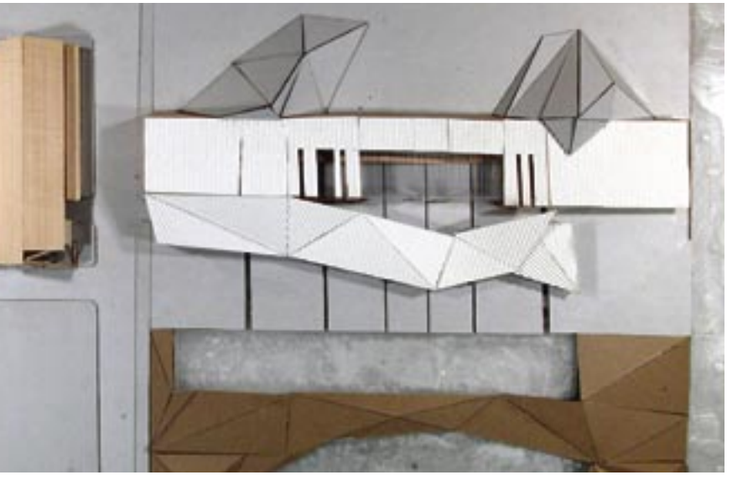
intellectual constructs and physical space. Through investigations into the relationship between limits (borderlines) and territories (borderlands), the studio explored the multilateral effects of boundaries as they are manifest by outlines on maps, astronomical lines, built artifacts, cultural diversions, points of exchange, political territories, national identities, and economic shifts. The sites that emerged from these investigations proved not to be entirely predictable or controlled territories, but more often dynamic, shifting landscapes pinned only momentarily to an ever-changing framework.

Based in Detroit, Michigan, the studio explored physical and non-physical border conditions occurring as a product of urban exchange. Extensive borders (international, topographical, infrastructural, architectural) and intensive borders produced by non-physical intensities of energy, capital, and exchange emerge relative to the specifics of space and time, marking shifts in political histories, power structures, economic exchange, and human migration. At the intersections of extensive and intensive borders exist contested urban sites, territories defined by intensities of production, value, exchange, or program, but without fixed or clear control. Students intervened at these particular sites (or series of sites) to affect the border conditions they had revealed, under the given programs of "food and exchange." A deliberately abstract program, it was necessary for each student to define these programs relative to the initial research. As such, each project was distinct in terms of site and program, but unified through a critical interrogation of the border conditions inherent within the studio program.

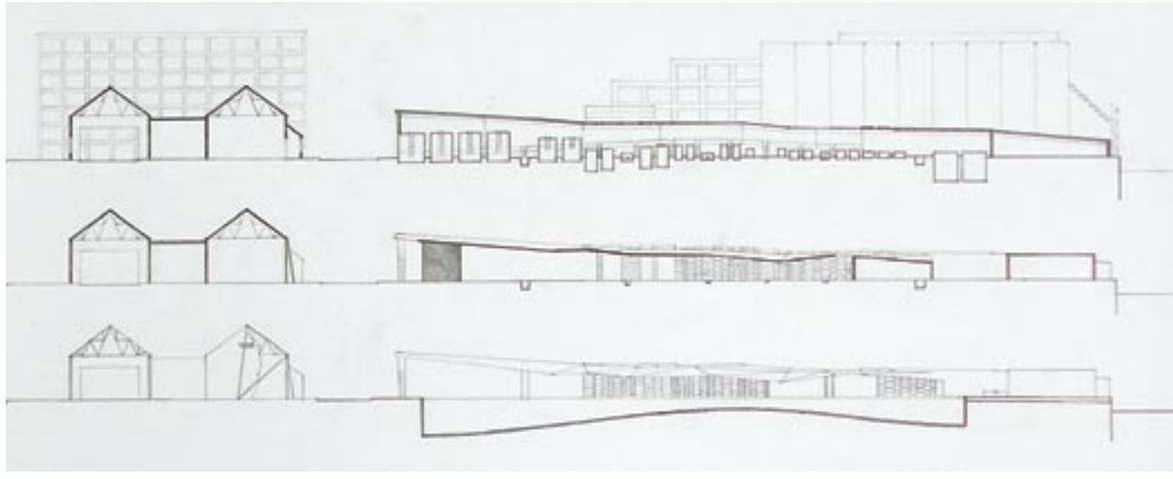
Notes
1. Mark Twain, *Life on the Mississippi*, (New York: Harper & Brothers, 1923), p. 3-4.
2. Anuradha Mathur, "Blues Meanders," *Architecture of the Borderlands*, *Architectural Design* vol. 69, Academy Editions (New York: John Wiley & Sons, Inc., 1999), p. 49.
3. Simson Garfinkel, "Welcome to Sealand. Now Bugger Off," *Wired Magazine* Issue 8.07, July 2000.
4. HavenCo Ltd., <http://www.havenco.com> (11 March 2003).

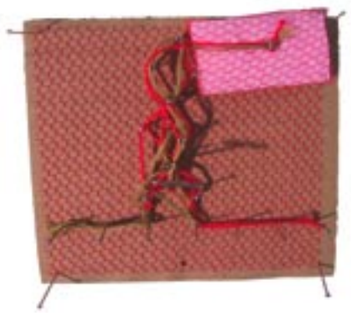


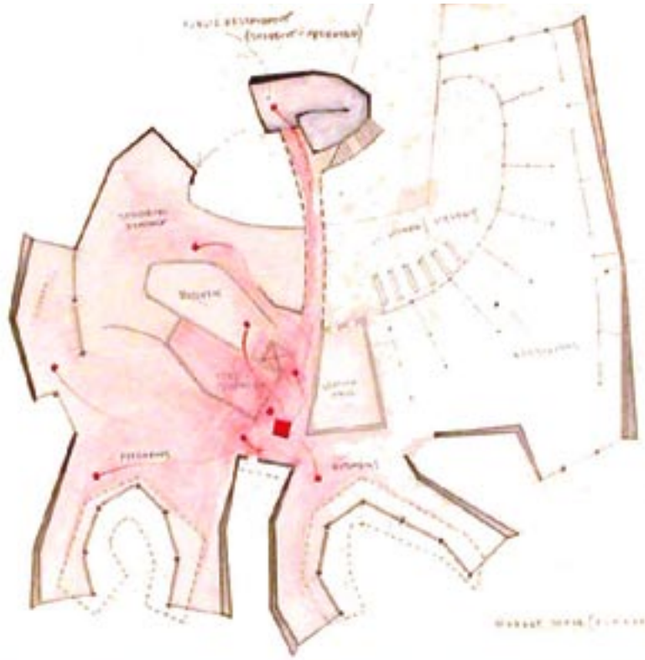


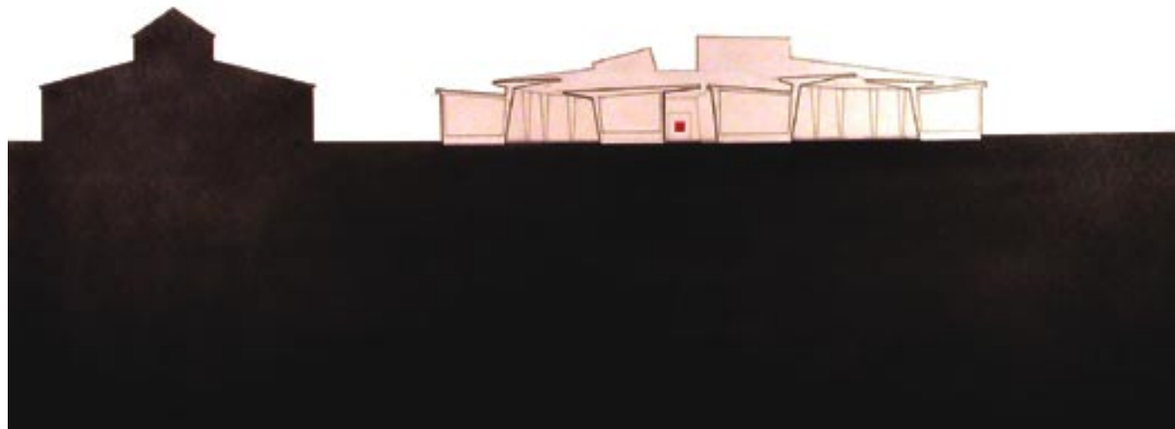


Jeff Ponitz: Industrial/Park *The Detroit Riverfront is a series of mismatches and hard edges; one can see in succession a cement plant, an ampthitheater, another cement plan, and (coming soon) a public golf course north of the Renaissance Center. By superimposing various forms of territory, a gradient border condition is formed along the riverfront. These territorial mappings document the seams in Detroit's urban fabric. Bordering a cement plant and the future golf course, the Industrial/Park utilizes its internal and external seams to generate a symbiotic network of exchange. The juxtaposition of industry (fish hatchery) and recreation (fish park) create a resultant (fish market) that mediates production and consumption. An abandoned cement warehouse across the street reclaims its former program of storage and shipping. Capital, livestock, and water are shared, reused, and stored in the seams between cities, sites, and programs.*









Dana Jaasund: Eastern Market as Network *Detroit's Eastern Market district is a dense network of businesses all contributing to the industrialization and commodification of food. One cow can be slaughtered, butchered, sold to wholesale, and served in a restaurant all within this area. The Culinary Institute serves to interrupt and/or intervene in this process by adding another level of interest. The goal of the Culinary Institute is to teach students how to use food as a medium for artistic expression, thereby adding a subjective layer to the processing of food. The school operates both as an autonomous institution and as a part of the larger neighborhood of the market. It becomes a microcosm of the network where it is situated, breeding a complex web of relationships between the students, the food, and the spaces to enhance the hands-on experience of the whole. The student-operated restaurant located in the foreground along Russell Street becomes the school's link to the public as students are finally given the opportunity to present themselves as chefs. Only there does the transformation of food to cuisine and student to chef become realized.*

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STEEL-BELTED RADIAL CITY

Christian Unverzagt

The steel-belted radial city has blurred the distinctions between the urban, sub-urban, and rural territories that it is responsible for linking together. No longer a series of unique topographies with distinct forms of use and occupation, the postindustrial regional landscape is now one and the same. Suburban "downtown revitalization," urban farming, and recent attempts to attract big-box retail to the city of Detroit are only a few examples of the new face of growth in the region.

NEW, USED, CERTIFIED PRE-OWNED, 0% FINANCING, $4000 CASH BACK

The freeway constitutes the new urban fabric. Extending as far as the eye can see, it often conceals the road itself. Once open and uninterrupted, it is now replaced by the perpetual cycle of its own occupation and revitalization—a cast-in-place testament to the promise of mobility.

This dissonance between location and condition conspires to produce a non-linear reading of the city; its metropolitan reach resists its former classification and offers new possibilities for its redevelopment. Unfortunately, despite these new "scalar urbanisms" and sloping densities—and without denying the glaring social and economic discrepancies that remain—the city/region continues to be discussed as a set of polar conditions.

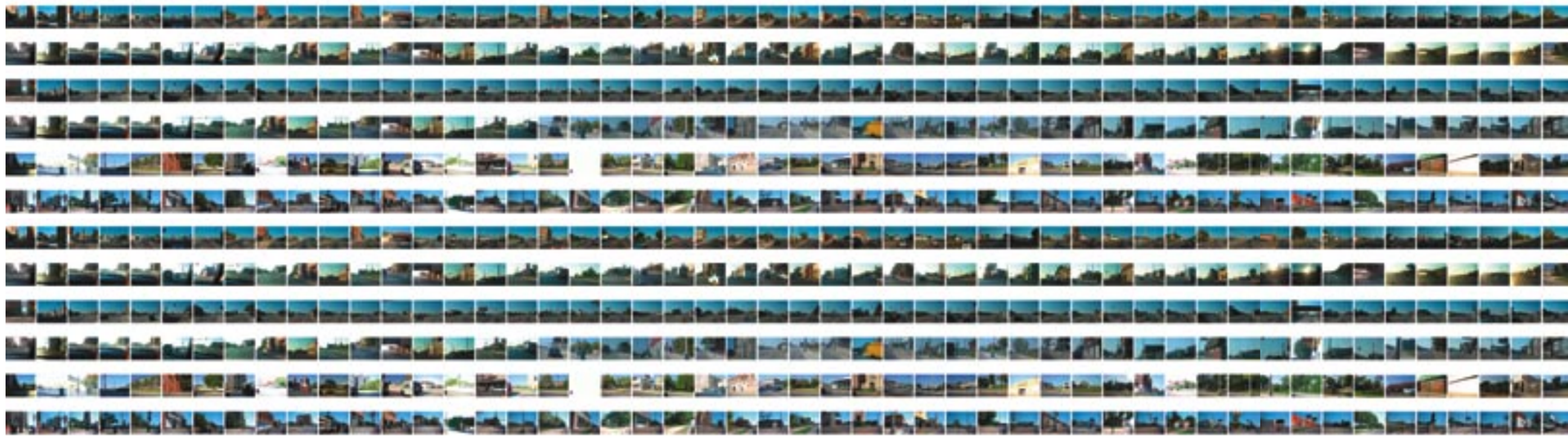
CHOPPED, SHAVED, SLAMMED, TUNED, AND TUBBED OUT

In 1982 organizers brought the Formula One Grand Prix to Detroit. The annual race along the edge of the Detroit River reconfigures and resurfaces the downtown streetscape as a stage for automotive might and agility. After a decade of interlacing the city, the race was relocated to Belle Isle before being halted in 2001—its sponsors citing lackluster attendance, irregular courses, and muddy work areas for the crews.[1]

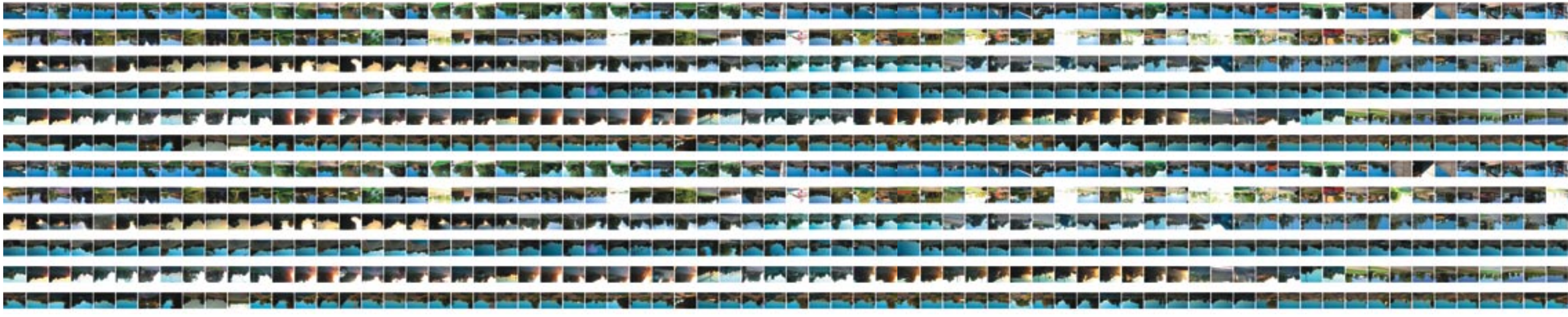
The decline of the Grand Prix in the 1990s was countered ten miles away by the emergence of another automotive event: the Woodward Dream Cruise—a one day celebration of gridlock and gawking, generating $55 million for affluent Oakland county.[2] There are no restrictions for participating in the cruise which occurs along an eight mile stretch of Woodward Avenue; a '57 Chevy, a '97 Integra or an '03 PT Cruiser are equally welcome. The promoters, however, work to project an image of 50/60s American Graffiti cruising—an era of prosperity predating the racial conflicts of the late 60s.

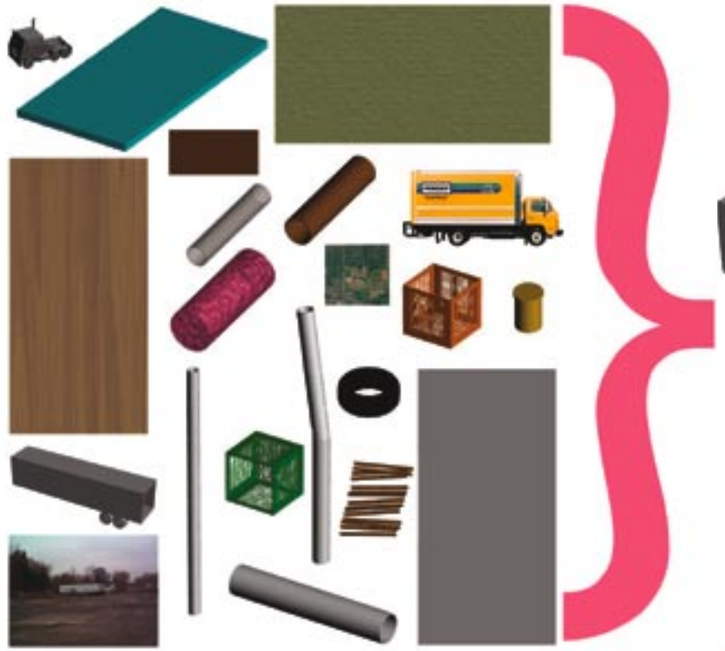
The organizers describe the route along Woodward Avenue as a circuitous cruise. It originates at 8 Mile Road—the border between Oakland and Wayne counties, also the Detroit city limit—and heads towards Pontiac, before looping back to the beginning. Participants, however, may enter the circuit at any point with the cruiser expected to turn around prior to entering Detroit—denying the continuity of Woodward and harboring the cruise safely within the confines of the "participating cities."[3] In stark contrast to the material preparations that occurred in anticipation of the Grand Prix, the resurfacing of Woodward occurs immediately following the event, effectively erasing any traces of errant activities left by the cruisers.

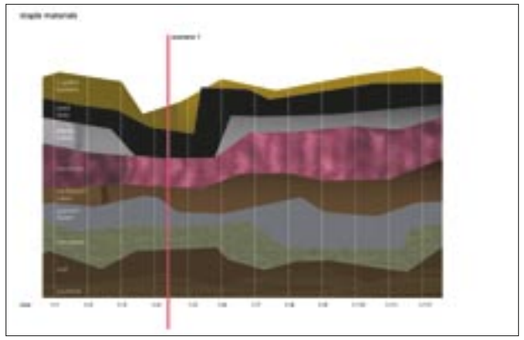
Notes
1. http://www.autoracing1.com/MarkC/000620DetroitPolitics.htm
2. http://www.woodwarddreamcruise.com/2003/history.html
3. Ibid.

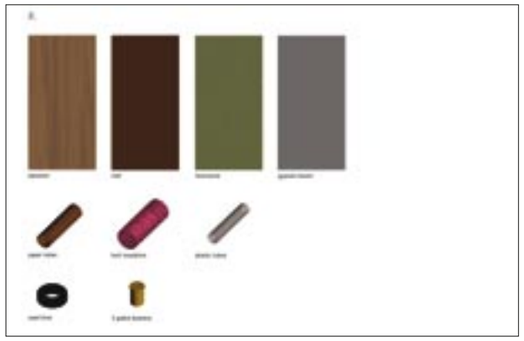


1440 Vision *A studio-wide photographic survey which originated at the vertex of Detroit's three principal arteries and moved outward along twelve independent auto-bound trajectories, recording 120 equidistant moments for a distance of twenty-four miles.*

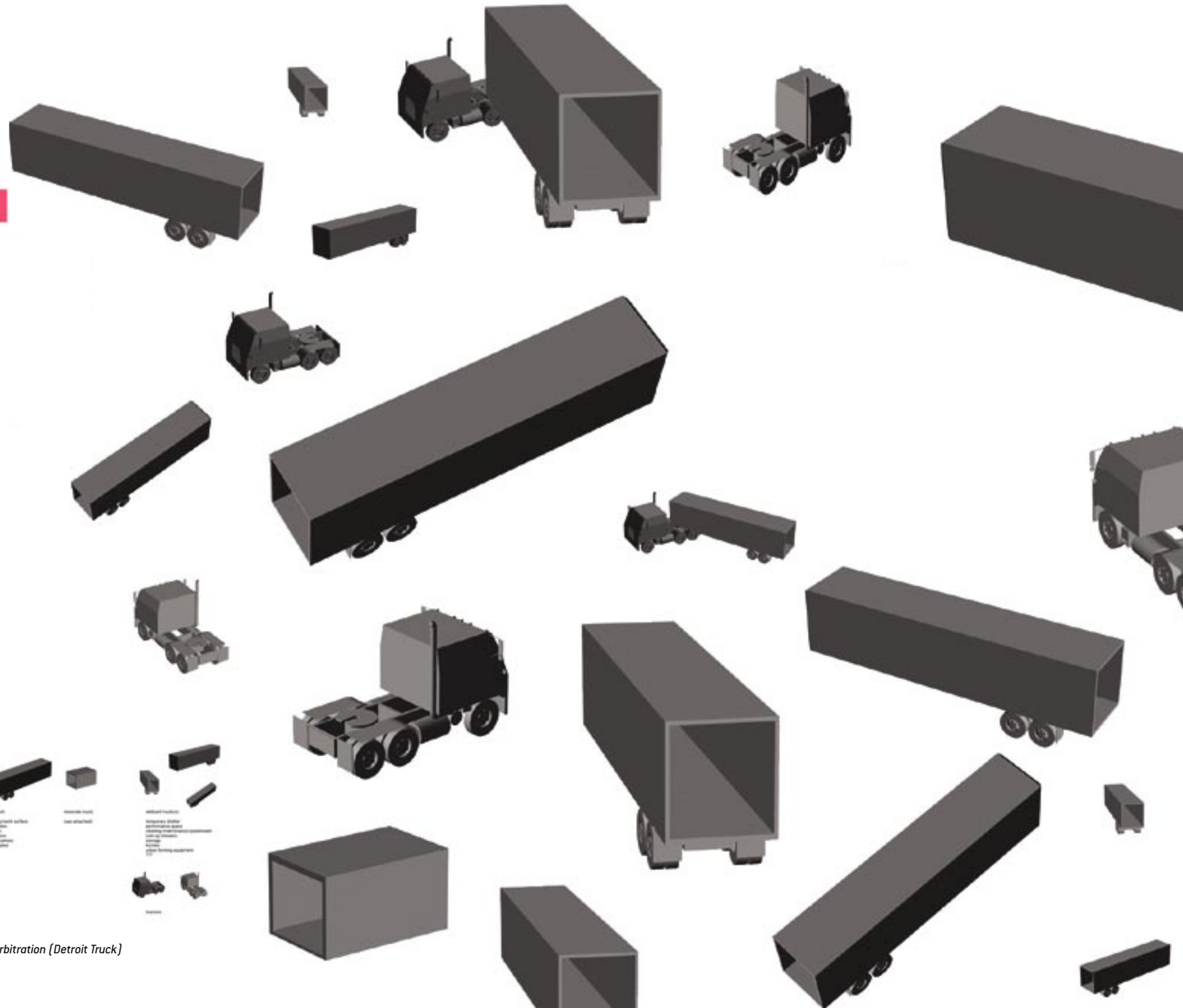








Neil Meredith: Material Arbitration (Detroit Truck)



Calder Spruill: Looking for Action

INTERVIEW WITH EYAL WEIZMAN

James Fidler

Eyal Weizman lectured at the Taubman College on November 18, 2002. In his lecture, "The Politics of Verticality," Weizman argues that through strategic planning measures the Israeli government has configured the settlements of the West Bank in such a way as to prevent the land division crucial to the forming of a Palestinian state. His research describes the spatial techniques of surveillance and control used by Israeli planning agencies in laying-out the settlements, for example the Israeli occupation of the hilltops that overlook major traffic arteries and Palestinian towns.

Weizman and partner, Rafi Segal, have taken their research on the West Bank settlements and turned it into an essay entitled, "A Civilian Occupation." The essay appears as part of a larger exhibition, Territories*, curated by Anselm Franke, at the Kunst-Werke (KW) in Berlin. The exhibition, which opened in June 2003, depicts instances of human rights violations from around the world that play themselves out in the spatial forms of architecture and urban planning.*

***Dimensions:** Was* Territories *the same exhibition that was supposed to open last year in Berlin?*

Weizman: Well, it's the same subject. Obviously, we got more information along the way and a budget and facilities through the KW in Berlin which allowed us to expand our research and our means of presentation. So it was based on the same principles. All the materials that were supposed to be shown in Berlin last year were shown here, but there is much more. About thirty to forty percent of the exhibition deals with the architecture and built environment of the Israeli-Palestinian conflict; the rest of the show deals with other places and other instances of spatial injustice where human rights violations are built into the architecture and planning. We took the case of the West Bank as a kind of a laboratory where strategic planning of human rights violations are playing themselves out in a very extreme manner, but by no means is it the only place where it has happened. There's a very familiar typology of similar gated communities in other places; the West Bank is just much more extreme and violent.

Where else has this sort of research been conducted?

There's been work done in the former Yugoslavia, Guantanamo Bay, Diego Garcia—places belonging to the American army around the world with American pockets of sovereignty. We are also showing a piece by Stalker, an Italian group, on Kurdish refugees. There was a large section on the architectural planning analysis of urban warfare, on the way the army understands the city. We were showing another piece by an American group, Bureau of Inverse Technology, on corporate America and Silicon Valley. They were actually flying spy planes over it.

All those things together were meant to shake architecture up a bit from notions that stuck to it during the nineties of celebrating commerce, celebrating the corporate world, branding, logos, all these things and take it in a different direction, saying there is a very dark side to architecture and planning. Architects have been complacent in human rights violations and war crimes around the world in a very severe and negative transformation of the built environment. I think now is the time to take a breath, stop, and examine those processes. So putting the exhibition together with Rafi Segal, on the one hand we showed the research, on the other we edited a hefty book on these issues together with the German curator, Anselm Franke. If this book were to come to America it would be called Territories as well.

It seems like state and military agencies would not be willing to disclose this sort of information. What were your research methods for gathering such sensitive information?

We gathered the research through a very long and laborious process of traveling to individual settlements under false pretenses, getting hold of their master plans, copying them, and plotting them onto a large map; we were flying over the West Bank, taking aerial photography, analyzing it, and plotting the rapid transformation of the environment. We were using obvious sources. The CIA office in Tel Aviv was giving us material from satellite images. So there was a kind of synthesis of a large number of sources that came together in the map and the exhibition.

Regarding the rest of the exhibition, we approached people that we felt were doing interesting work in the field. We wanted to support their research, so they can continue to analyze their findings. The art institution, KW, during the exhibition was turned into a sort of research center for those issues.

How cooperative were state agencies in helping you with your research? Did you go to them specifically and tell them what you were doing?

We were not really going to state agencies. There is enough information that is available through different forms of open research. If you look at Guantanamo Bay, the people we worked with just went there and did as much as they could independently. Obviously when you get to official channels, you get the official line on things. So we needed to take a more serpentine way to get the information, but the point is that even though it involves a lot of political debate and political topics, this exhibition is an architectural show.

It's a show about these processes solidifying into architectural form. We believe that architecture is a solidification of social, economic, and geopolitical strategic forces. We're examining the elements of the architecture, very minute and small sometimes, and trying to read back how these forces were applied in organized form. So it was very much like the work of an archaeologist. You find a material trace, and you try to figure out a narrative and the processes that brought it about.

Do you feel it's your place to speculate whether this research can lead to peaceful coexistence between the Israelis and Palestinians or was that not really your intention in the project?

That would be such a long shot to say that an exhibition, an architectural critique of settlement, is going to bring about a peace between Israel and Palestine. Every little work on the topic by human rights organizations, peace activists, and humanitarian activists is chipping away at the tree. I wouldn't say that any particular thing is what's going to bring the peace. I'm speaking primarily to architects, Israeli architects and architects everywhere, that they need to examine the forces, the vectors, that are influencing their decision-making in terms of design. It's not enough to say, as Koolhaas was saying during the nineties, "If you can't be responsible, be irresponsible," or to celebrate the commercial world to such a degree it becomes dangerous. We cannot allow ourselves to continue this discourse.

Some people at this school have criticized your research, saying that the West Bank development wasn't so contrived or insidious as it was made out to be in your argument, that occupying the hilltops has a very long, almost Biblical history that predates an Israeli state, or that there is an older vernacular tradition going into the site strategy of the settlements. What's your reaction to that sort of criticism of your work?

Architecture, and town planning especially, always has and always will have a strategic paramilitary guidance. The history of urbanism is the history of warfare and the reaction to different kinds of threats. Every city from the time cities formed is organized with a defensive position. This is nothing new. Being on the hilltop gives you a strategic advantage. I'm not saying the settlement invented the fortified model.

What I am saying is that what developed there is a particular vernacular of occupation that domesticates violence. It is no longer the agencies of control, the army and the police, that are responsible for maintaining Israeli control of the West Bank; it is individual settlers. It is the civilian population and civilian architecture that are being drafted. It is the red roof with the garden, the most mundane and familiar of urban typologies, that has been placed in a particular way to generate control. What I am showing is how this panoptical diagram of power is guiding the layout of the settlements. They've stretched these rings around the mountaintops so that every main window in the living room of every house is looking into another stretch of territory. Settlements are optical devices at an urban scale. They are placed over strategic sites to be watched. The Israeli supreme court acknowledged that, the Israeli military acknowledged that. The settlers on the other hand do not acknowledge that because they believe that they are there because of some divine right and the gaze onto the landscape is not a surveillance gaze, but a gaze that appreciates the pastoral, Biblical landscape.

I can understand where the root of your question comes from. Both the architects that designed those settlements and the settlers themselves are sometimes not aware of the overall strategy and the overall planning of the West Bank as a matrix of control. The architects are responding to guidelines and internalizing them. It's a process by which architects have turned a blind eye to the way which power works on topography and landscape.

The representation of your maps of the West Bank gives the impression of camouflage. Was that just a symptom of the fragmented way the settlements occur in the West Bank, or was that a strategic part of the representation of the project?

It definitely looks like camouflage. If we think for a second about camouflage and the history of camouflage, it is an attempt to work against form, against formal continuity. It flattens foreground and background. It breaks the edges and limits of a body. I think that the master planners' attempt, although they are not consciously thinking about camouflage, is to fragment and to break the coherent territory of the Palestinian state, to attack form, formal continuity, and formal coherence. Therefore, the map really looks like a kind of patchwork of alienated ethno-national pockets. There's no continuity between the blue bits on the maps which are the Jewish settlements and no continuity between the brown bits which are the Palestinians. I believe the intention was to complicate the terrain so much so that a possible kind of partition plan, as proposed by the Israeli left, or now even Sharon, would be very, very difficult to achieve. The settlement master planners feared that after they lost control there would be a leftist government in Israel that would like to draw a boundary between Israel and Palestine. Therefore, they put the settlements precisely in those spots that would not allow a single line to separate old settlements from the Palestinian towns.

Do you think that that precludes the possibility of forming two independent states simply through its spatial geography?

I think without dismantling all the Israeli settlements it's going to be very difficult to achieve a viable Palestinian state. You have to realize that the settlements in the West Bank are sitting on the best locations, on the places where you can pump water from the mountain aquifer, on the nearest places to Tel Aviv and Jerusalem, and on all the traffic arteries. Without removing them you're not going to get a viable Palestinian state.

What they plan now in the [U.S. proposed] road map is a gradual or partial removal of settlements. I don't think this is going to work. When Sharon is speaking about the Palestinian state in the West Bank and the idea of contiguity between the different Palestinian areas, he speaks of contiguity that will work only through the use of tunnels and bridges. Because he does not want to remove the really crucial settlements, the map of Palestine will be a few pockets of land completely disconnected, where Israel is around and in between, where

connections only occur through tunnels underneath Israeli territory or bridges spanning over Israeli territory. I think it's absolutely nonsense to think that such a spatial configuration could be a sign of goodwill and a path to peaceful coexistence.

So you don't feel the road map they've laid out answers the spatial questions that are so intricately involved with the negotiations?

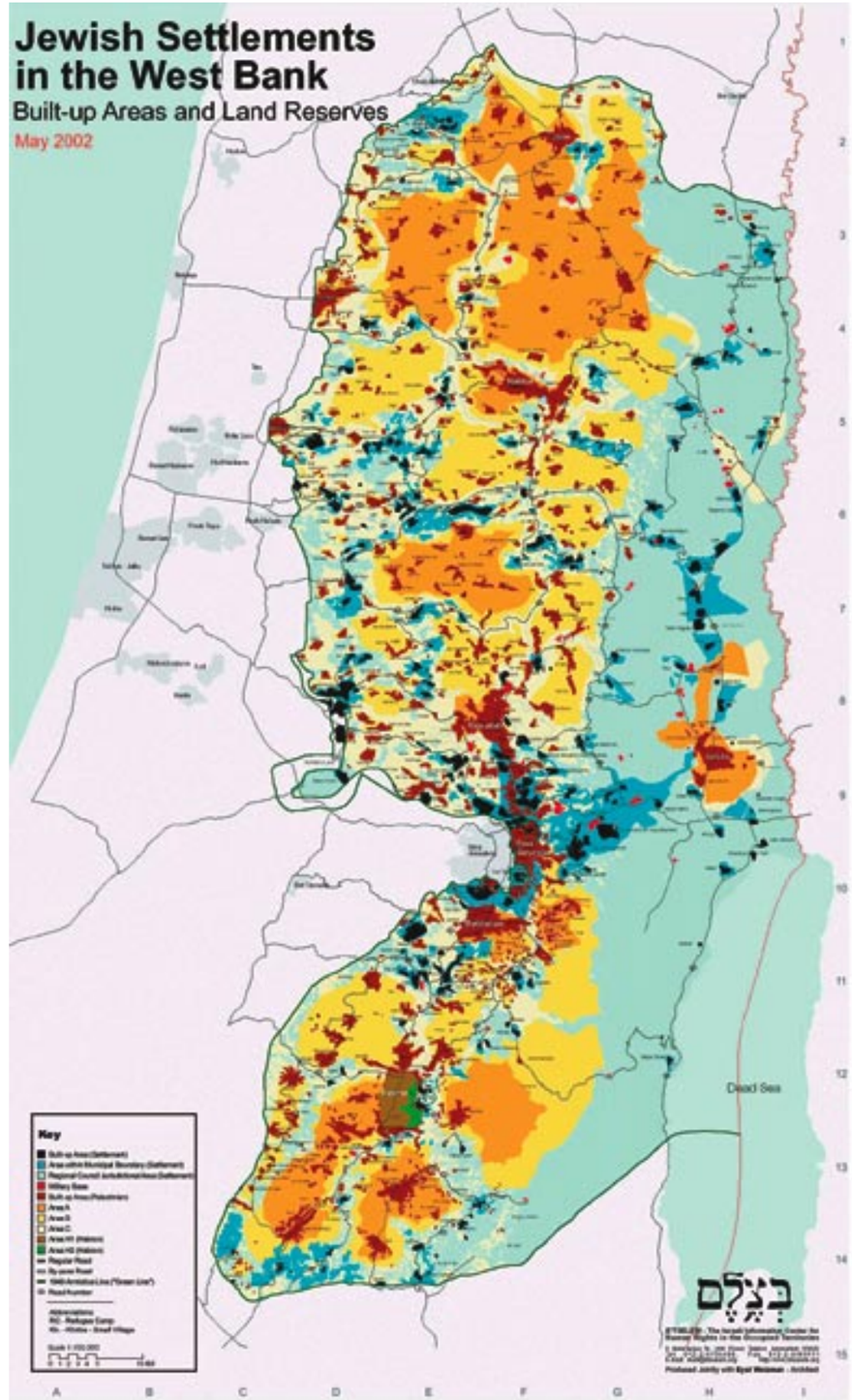
Not at all. During Camp David, the people that were analyzing and forming opinions about the Israeli proposal were thinking, "Oh god, Barak is willing to give 90 percent, even 95 percent, of the West Bank." That sounds like a lot, right? And here's Arafat asking for another 5 percent. It sounds very petty. But actually one needs to look at form and look at the map very carefully to understand that what you can do with five percent, or even two percent, strategically placed is paralyze the ability of the 95 or the 98 percent to function. This is exactly the aim. Israel wants to exercise control over the whole area of the West Bank without being present there. By a system of acupuncture, of very careful planning moves, Israel is able to completely neutralize and paralyze the ability of the Palestinian state to regain power. Lenin once said that strategy is the choice of forces to be applied. I think this idea of acupuncture is the right metaphor to understand how one can paralyze or control a whole body through a pin-pointing location strategy which is very smart in creating what Jeff Harper calls a matrix of control.

Obviously your work has a strong social component. How much of a place do you believe social research has in architecture in general? Do you continue this understanding of architecture in your design work?

I do. As an architect you need to be careful in understanding the interest of all the people involved in a particular commission. You need to know how to channel the forces that are operating on the site. You need to completely research the origins of these forces. This is how I operate in my practice in Israel together with my partner, Rafi Segal. We are very deeply involved in the social, economic, and political vectors in the city and how they influence form.

Do you continue to do your research simultaneously with your design work?

If I get the chance to design and to build, this is very important. I don't see myself only as an academic. I see myself as a practitioner and the power of the research comes from practitioners, people who can comment about space in less of a naïve way. I'm very excited whenever I get a chance to build something. Through the research I get to develop a methodology that integrates social-political thinking into space.



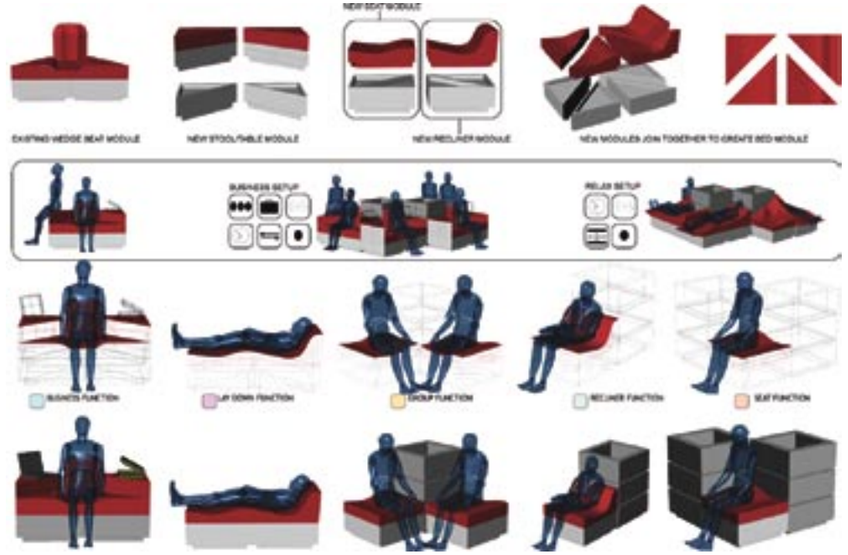
42° 30' N, 83° W – LOST PUBLIC?

Oliver Neumann

Globalization and the development of media technologies are accompanied by the questioning of the role of local space in the forming and functioning of communities. Discreteness of identity and location has been replaced by the immersion of self in the mediascape. As a consequence, the emergence of the screen as a central point of communicative and aesthetic experience is paralleled by the absence of the subject and the human body as a reference in the conception and generation of space. At the same time, no new spatial forms of local community have emerged as a result of the expanded realms of communication. Contrary to communication technologies' potential to connect geographically remote individuals and to create new virtual communities, recent developments in communication have led to a growing disengagement in communal activities.

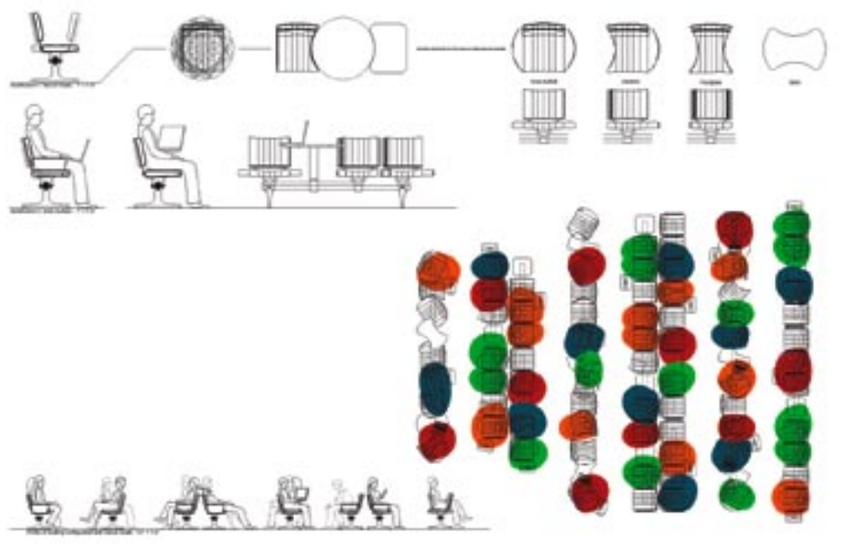
In the urban context, the influence of media technologies has led to a waning interest in public spaces and particularly the abandoning of the city as a public realm. The parallel individualization of everyday life leads architects to often disregard architecture's potential to represent and to constitute spaces of public interaction and communal exchange.

Developments that disregard public interaction are similarly reflected in the evolution of the design and layout of recent transportation facilities. Contemporary airport planning, for example, in an attempt to satisfy the wishes of the airlines' best paying customers promotes the creation of private spaces and areas of limited access rather than areas of communal gathering. Restaurants, concession stands, and airline lounges are expanded for business and first-class travelers to offer temporary areas of seclusion. At the same time, public hallways and waiting areas are gradually reduced to the minimum space necessary for the handling and processing of the majority of passengers. Long distance bus service and trains—although targeting



Kyle Hulewat *The analysis of the modular seating units focuses on the person's engagement with the individual seat and on activities of individuals and small groups using the waiting room furniture. A detailed examination of the surface reaction of the seat forms the starting point for the redesign of the furniture modules. The proposal for the modified design uses similar modular system. Shape and configuration of the seats now condition individual use and group gathering relevant to bus travelers.*

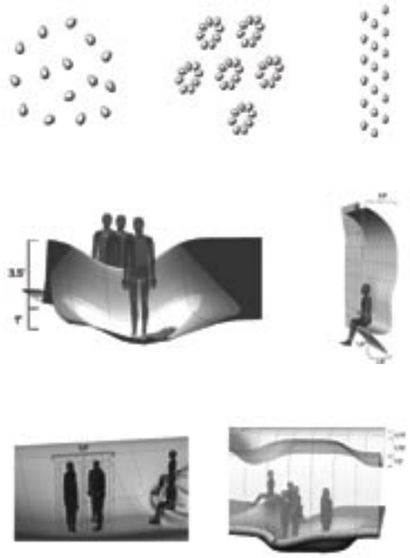
Joanne Graney *Minor modifications to ubiquitous airport furniture can promote exchange between travelers. With the addition of a swiveling row of chairs, the travelers are able to modify their position and relationship to those around them. The swiveling seats are based on the turning radius of the original chair. Turning one seat now may require the adjustments to the position of surrounding chairs. In addition, the introduction of a work-height table facilitates travel-related activities relevant for business commuters and traveling groups.*

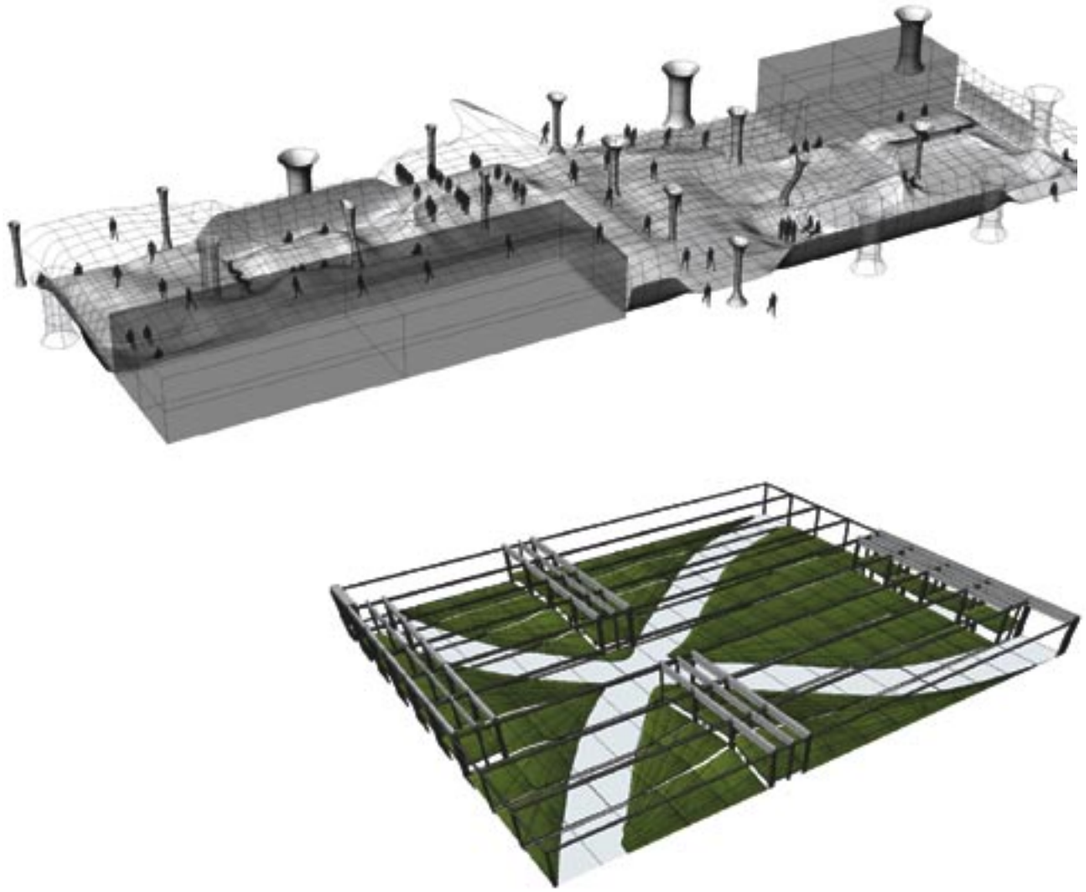


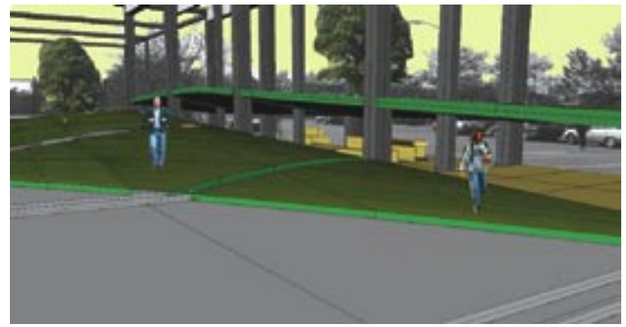
a more diverse clientele—also address the changing expectations of customers immersed in an environment dominated by technology. Terminal facilities extend their services to the traveler as workstations for internet access, restaurants, and controlled waiting areas cater to the projected needs and desires of affluent costumers.

Detroit's global coordinates, 42º 30' N, 83º W, as much define the city's particular geographic location as they integrate Detroit into a universal positioning system. The new Detroit Greyhound terminal constitutes a significant node in the Greyhound service network with more than 3,500 locations. Likewise, as an inner-city transportation hub, the station serves as a link between Greyhound buses, Detroit city transit, shuttle connections to Detroit airports, local taxi services located in the center of the city, private transportation, and pedestrians. As part of the "Contested Urbanism" studios, 42º 30' N, 83º W explores architecture's potential to condition public spaces and to promote interaction between people under the current conditions. Places, like space and time, are seen as social constructs and understood to represent the cultures and societies that produced them. As a consequence, architecture and the spaces it generates have the potential to inform and even condition communal behavior. Rather than dismissing the importance of media technology's influence on everyday life and on the exchange between people, the studio investigates possibilities that promote interaction and exchange on a local level. Program layout, configuration, and superimposition are studied simultaneously with human contact and engagement to formulate an idea of social interaction as a basis for design. Attempts to redefine notions of public space become the basis for the reading of the existing city and subsequent design proposals.

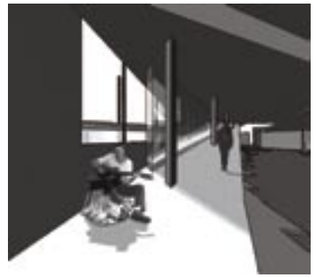
As part of the design explorations of the studio, the investigation of architecture's potential to constitute interaction and communal activities focuses on two distinct scales. In an initial exercise, the design and analysis work concentrated on a rereading of common seating arrangements in airports, train stations, and bus terminals as sites of local interaction. Particular focus is given to the relationships of configuration, form, assembly, and detailing on the performance qualities of the studied furniture. Design proposals that expand on interrelationships between materiality, assembly, and use suggest interpretations and modifications of the given elements of the seating arrangements to reveal the furniture's potential to condition social interaction.

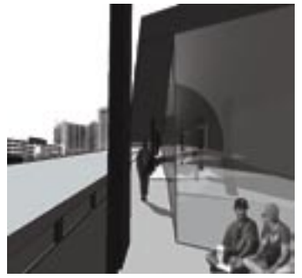




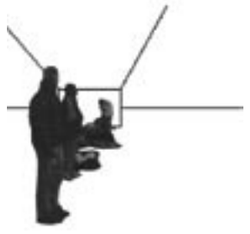


Kyle Hulewat: Surface Dynamics *Extending the studies from the initial exercise, this proposal explores the public areas of the bus terminal as a responsive architecture intended to accommodate the changing spatial and programmatic requirements of the Greyhound station. Behavior patterns of travelers are considered to generate zones that accommodate programmatic needs of individuals and groups. A programmatic rereading of the initial design of the terminal interior the final proposal integrates the bus station into the urban context. The notion of an architecture that accommodates necessary and desired functions at any given point is developed in a proposal for a collapsible structure that oscillates between park-like surfaces and bus terminal.*





Joanne Graney *Bus stations are commonly located in marginal areas of cities: just beyond the borders of downtown, near major highways, and away from populations that would be bothered by the noise and pollution associated with a bus station. In addition, bus travel is commonly perceived as a marginal means of transportation. It remains the least expensive means of travel, making it available to a wider economic range of travelers and carrying with it the stigma of the less affluent. These two marginal conditions are compounded, as members of the margins of society are more likely to be wandering in the margins of the city. The bus station then serves as a focus for the area, a presence of activity in an otherwise inactive sector, a defined place in an area otherwise undefined. The typical Greyhound station attempts to disassociate itself from its position in the margins. This proposal embraces the margins by incorporating them visually into the designed spaces and promotes instances of localized loitering not limited to those taking the bus.*



METROPOLITAN LIFE?

Caroline Constant

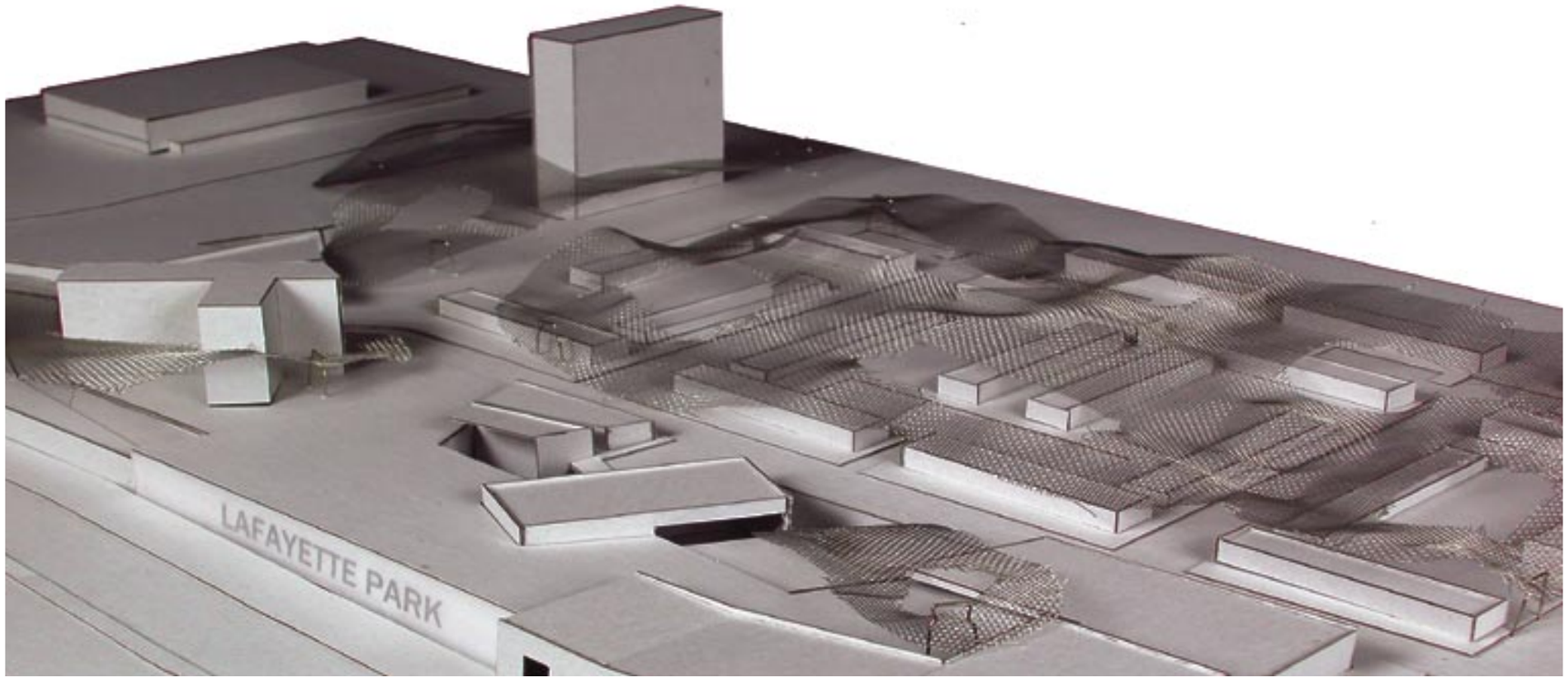
> *If there is to be a "new urbanism," it will not be based on the twin fantasies of order and omnipotence; it will be on the staging of uncertainty. It will no longer be concerned with the arrangement of more or less permanent objects, but with the irrigation of territories with potential; it will no longer aim for stable configurations, but for the creation of enabling fields that accommodate processes that refuse to be crystallized into definable form; it will no longer be about meticulous definition, the imposition of limits, but about expanding notions, denying boundaries, not about separating entities, but about discovering unnameable hybrids; it will no longer be obsessed with the city but with the manipulation of infrastructure for endless intensifications and diversifications, shortcuts and redistributions and the reinvention of psychological space.*
> —*Rem Koolhaas,* S, M, L, XL

There is a deliberate ambiguity to the rhetorically redundant phrase "contested urbanism." What is urbanism? What is contested? To investigate these questions this studio took for its site a suburban intrusion on a formerly urban milieu: Lafayette Park (1955-63), designed by urban planner Ludwig Hilberseimer, architect Mies van der Rohe, and landscape architect Alfred Caldwell. Lafayette Park is a paradox—an indication of both the potential of the modern metropolis conceived of as an open landscape and the limitations of such a vision. Although widely regarded as one of the most successful examples of urban renewal in the United States, Lafayette Park remains an island of relative affluence in a sea of empty lots and abandoned buildings, situated within a few blocks of Detroit's urban core.

Elevated to the National Register of Historic Places in 1996, Lafayette Park is no longer contested as a physical environment, yet its role in the broader urban landscape remains problematic. Although it lacks the placeless qualities commonly associated with suburbia, Lafayette Park is essentially suburban in its structure and form. It is not a gated community, yet the project's densely vegetated periphery clearly demarcates a semi-private domain. Aside from the adjoining shopping strip and elementary school, the project is isolated from its immediate environs. Even the public park that forms the core of the project remains disconnected from those parts of the city that can be clearly identified as public territory. Moreover, Lafayette Park has spawned a series of developments in the immediate vicinity that similarly operate as autonomous residential enclaves.

Students were asked to engage the social, political, and formal implications of this "urban" site, by examining/utilizing/challenging Koolhaas's approach to "new urbanism" on a site that reflects an alternate and opposing point of view about the city. Whereas Hilberseimer gave his urban settlement units a clear, rational structure in order to counter the chaos of metropolitan existence, Koolhaas embraces the messy, unpredictable, hybrid character of the postindustrial city. Although these approaches differ ideologically as well as formally, their underlying social assumptions remain highly questionable. Whereas Hilberseimer equated the development's abundance of open space with democratic freedom and choice, Koolhaas equates the surreal indeterminate environments arising from free development with individual freedom.

Students provided varied responses to this challenge. Rejecting Koolhaas's notion of irrigating territories with potential through the staging of uncertainty, Rafael



Michael Parlett: Seeking New Ground top
Brie Peters: Establishing Boundaries bottom left
Raphael Yee: Open Space=Urban Space? bottom right

Yee sought to counteract Hilberseimer's democratic universal space of modernism by activating the park and its primary entrances through a series of highly specific programmatic and formal interventions. In contrast, Brie Peters introduced boundaries to transform the park into a highly articulated ground plane, subdivided into four distinct typologies that nevertheless lack programmatic specificity: contemplative space, gathering space, active space, and unprogrammed space. By introducing typological complexity to the park she sought to overcome its current state of isolation, which is paradoxically exacerbated by the typological diversity of the housing at its edges.

Like Yee and Peters, a majority of students identified the park itself as the locus of their intervention. An exception was Michael Parlett, who sought to reactivate a semi-abandoned linear site bounded by the I-375 interchange to the east and Lafayette Park to the west to address Hilberseimer's utopian vision of an idealized ground plane upon which buildings are rotated with respect to the urban grid, underscoring their object qualities. Challenging the notion of a stable constructed ground, Parlett introduced multiple modulated grounds that embed the existing structures within a new, non-hierarchical order. Disrupting the site's abstract and empty character through multiple acts of negotiation and reckoning, his proposal establishes new relationships between the urban core, the freeway, and the park.

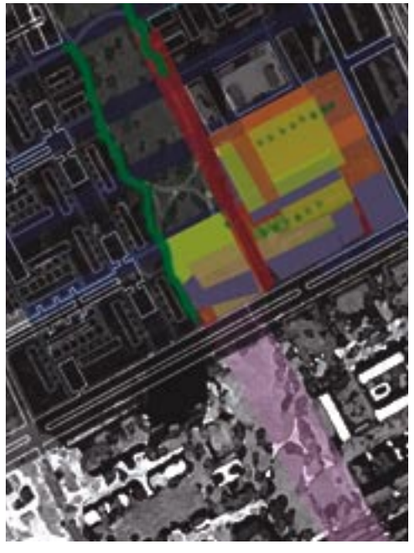
The following two projects comprise exceptions to this tendency to fill the park with program. Both students sought to preserve the tranquil nature of the park while simultaneously encouraging its broader public use: one by heightening the urban character of the existing shopping center at its edge and the other by providing a public amenity at its center and subtly augmenting visibility at its edges.

Michelle Laboy: Fields of Diversity

The architecture of Lafayette Park is, in Rem Koolhaas's terms, an architecture of "erasure." This suburban capsule created in the midst of an urban arena of conflict and redefinition, represents the eradication of a history that reemerges and resists around it.

The landscape of Lafayette Park isolates the development from the space of the city. The park's proportions and lack of connection to the public realm make this large space a void that lacks a sense of ownership. It is a public park that feels private from the outside, yet public from within. The juxtaposition of scales and the layers of ground are constant reminders that the site belongs to an urban grain that is buried within it. This proposal seeks to rediscover these layers of intervention—to create a field of diversity that celebrates what Detroit can be by inserting activity and amplifying the sense of place. It manipulates the ground to break down the scale of the park and generate activity, without disturbing its role as a center of tranquility for the neighborhood. Instead of conserving a capsule that keeps Detroit out, it becomes a fragment of Detroit within.

As a necessary corollary to this notion of the park as a revitalized but tranquil locale, a fulcrum is created at the corner of Lafayette and Orleans—an interior landscape capable of infusing activity into the park and giving it visibility. By redefining the shopping area and giving urban definition to the buildings along Lafayette that currently dissolve into a sea of parking, the proposal creates surfaces that define entry, open to interior landscapes and enfold shared territories, creating tension



between public and private realms. This nexus of shops and cafes surmounted by housing, together with a library introduced at the southern end of the park, joins the urban and the suburban and negotiates between the different scales of the city. Urban surfaces invade the park, just as the park surfaces pour into the urban, weaving the urban street with the ground plane of the park. Subtle differences in elevation delimit territories, define thresholds between public and private and make gestures of invasion and appropriation.

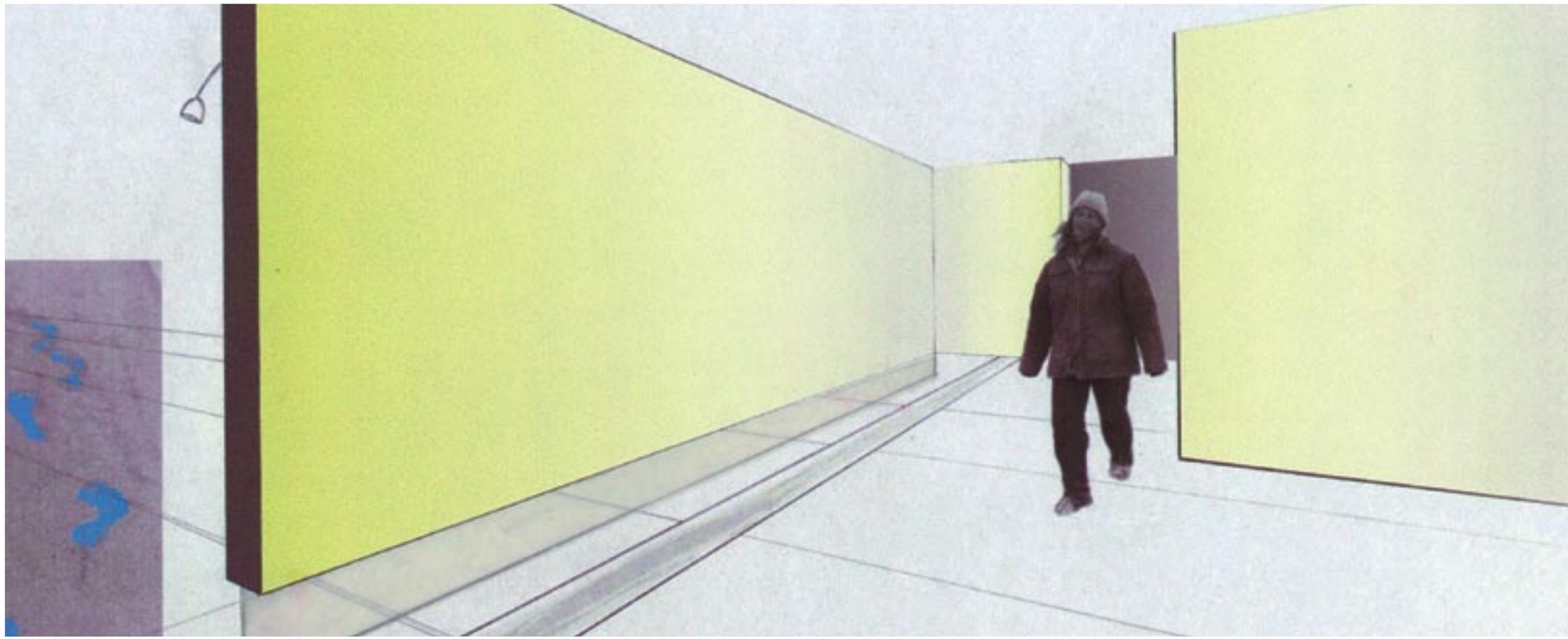
Kristen Little: On Public Ground—The Protocol of Public Space

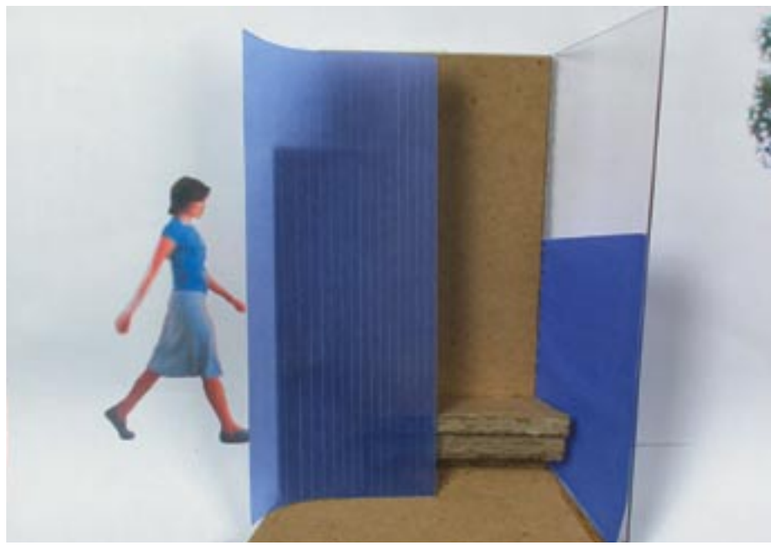
Affirming the transformative power of a minimal intervention, Kristen Little's proposal encourages reoccupation of the public park at the center of the Lafayette Park development through a combination of architecture and landscape. It challenges Hiberseimer's concept of the open ground plane as public territory, arguing that public and private interests require more direct but subtle manipulations of the ground plane. A large public pool and restroom facilities introduced in the middle of the park mediate between sports grounds to the north and a combination of open parkland and garden spaces to the south.

The programmatic elements establish two types of ground: the surface layers of the sporting fields and the deeper aqueous ground of the pool. The restroom facility mediates between them, reinforced by an architectural skin that extends along the length of the building, constantly mutating to serve in different capacities. Penetrating the building as a perforated screen in the women's changing area, where it provides privacy and a means to hang one's clothes, the skin extends into the toilet stalls as a shelf for personal belongings. Increasingly objectified in the men's changing area, it serves as storage shelves, urinal stalls and lockers, respectively. In its final iteration, low heavy planters reestablish a sense of solid ground as they extend through the southern façade toward the pool.

Details reinforce the relationship of architectural elements to the energized body. A horizontal aperture at the base of the façade reveals the surface of the shower floor, the only surface of bodily contact when showering. The water drains into a channel that lines the façade, communicating the activity of showering from without and drawing on the relationship to the deep ground of the pool beyond. The doors to the women's changing booths are a thin, brightly colored membrane. When closed, the color is visible from the room, signaling occupation of the space within. The splashguard behind sinks used to wash the hands corresponds to the handrail that one encounters approaching the exit.

The project gestures outward beyond these intimate details. To establish greater connection between the Lafayette Park development and the civic life of Detroit, the pool is sited at the visual extension of Antietam Road, which extends into the park as a pedestrian route, marking the erased urban grid and signifying park access appropriately scaled for public use. The presence of the pool signals a new public for the park, encouraging active and passive recreational use of the broader site and challenging its status as a locus of activity for the inhabitants of the housing clustered at its edges.



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THESIS

BODYBUILDING

Stacey Segowski

As I eat, the thickness of the flesh that separates self from world melts away.[1]
—Peter Greenaway, The Cook, the Thief, His Wife and Her Lover

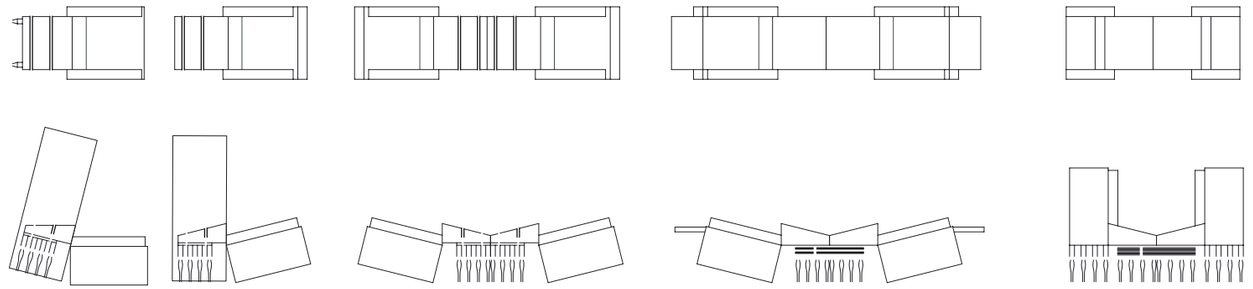
In *The Cook, the Thief, His Wife and Her Lover*, Peter Greenaway visually breaks down boundaries between body and space. Clothes, rooms, and bodies are all closely associated making the characters of the film indistinguishable from the rooms they inhabit. Are the rooms the characters that animate the bodies, or are the rooms extensions of the characters' personalities? Body and place become undefined.

Space ritualizes the body; the body digests space. *Bodybuilding* reframes the socially-constructed opposition between body and space in terms of mutual incorporations, projections, introjections, and digestions. These connections are virtual prostheses, suggesting the psychological mediation between body and space. Mechanical skins such as rollerblades or eyeglasses enable the body and extend its capabilities. The body learns how to incorporate the mechanical skin; through use the relationship of this new appendage to the body becomes fixed. The reason Jackie Chan wins all his fights is that he sees every object around him (including other bodies) as an extension of himself. Many social rituals (dinner parties) and the objects associated with them (chairs, tables, dining rooms) comprise a cultural jungle gym, an array of configurations of space and body indicating a culturally-defined and negotiated use.

YOU ARE WHAT YOU EAT

It takes effort to notice that bodies are porous and permeable, deeply connected with their surroundings and with others and, by themselves, incomplete.[2]
—Karen Franck, "From the Body," Architecture Inside Out

The site of *Bodybuilding* is the dinner party—a place where body and space are porous. Rooms of the house (bathroom, dining room, sitting room) are programmed around the "place settings" that occupy them: toilet, table, and sofa. This network directs and positions the body, transforming the architecture into a verb that animates the body. Similarly, etiquette manuals and their contemporary equivalents, TV personalities such as Denise Austin and Dr. Phil, tell us how to be in cultural space.



The dinner party inventory: 1 mirror, 1 front door, 2 recliners, 2 sofas, 8 straight back chairs, 1 toilet, 1 sink, 1 bathtub, 1 table, and 2 front steps had to be consumed in each slipcover. The materials could be broken apart and refigured, reversed, cast, etc. but everything must be accounted for in each dinner party.

Table slipcover

Bodybuilding is conceived as a series of cultural animators which refigure place, enact cultural rituals, and work through temporary alignments to produce new images of ourselves. Through this process, a new kind of place emerges dislocated from its previous cultural context. This place mimics Leder's incorporation: "The body as a whole is always shifting...A phenomenological anatomy cannot therefore be thought of as fixed over time, or even confined by the physical boundaries of the flesh."[3]

Instructions for a hug:

1. Cut along the lines.
2. Insert tabs into corresponding slots.
3. Find a friend and enjoy.

STRETCHING + FLEXIBILITY

Multiple depths of appearances present at the dinner party are connected through the concept of the slipcover. The slipcover simultaneously protects, camouflages, and reveals social customs while allowing for alternate place settings to occur. Each *Bodybuilding* cultural animator is conceived as a variation of the slipcover, housing the inventory for the dinner party.

TABLE SLIPCOVER

The table is one point in the dinner party network that works to ritualize the body. The table presupposes the chair and ground. The surface works to connect dinner guests in a communal ritual of digestion and places the guests eye-to-eye. What happens to the surface if another cultural animator, such as a recliner or bed is presupposed? The table slipcover inflects to maintain the condition of being eye-to-eye with the other cultural animators.

HUG SLIPCOVER

The hug slipcover is architecture-for-two: it protects the social ritual of a hug while allowing for alternate enactments.The dinner guests enter the hug slipcover from the bottom and in effect "look each other up and down." Once the dinner guests are inside, the difficulty of finding the handholes magnifies the interdependence of two hugging bodies. While the hug slipcover provides alternate hug enactments, it protects the intimacy and climax of the hug.

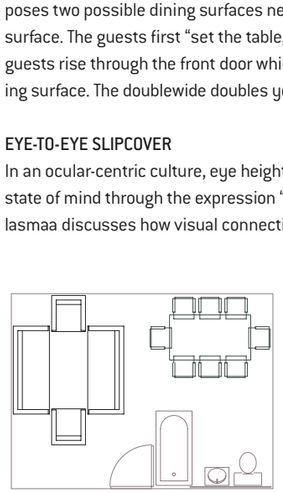
DOUBLEWIDE SLIPCOVER

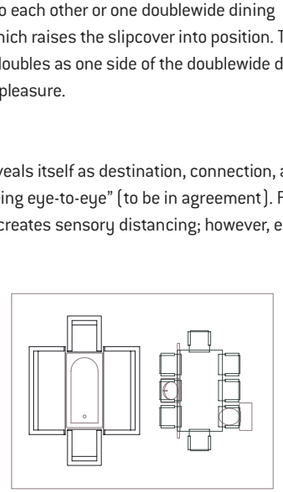
The doublewide slipcover is shipped to the dinner guests as a collapsable floor; it poses two possible dining surfaces next to each other or one doublewide dining surface. The guests first "set the table," which raises the slipcover into position. The guests rise through the front door which doubles as one side of the doublewide dining surface. The doublewide doubles your pleasure.

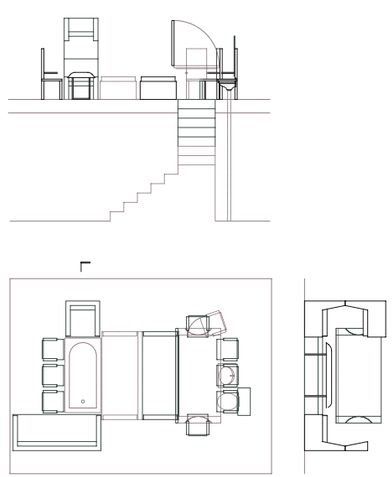
EYE-TO-EYE SLIPCOVER

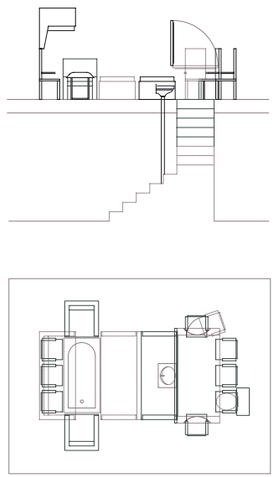
In an ocular-centric culture, eye height reveals itself as destination, connection, and state of mind through the expression "seeing eye-to-eye" (to be in agreement). Pallasmaa discusses how visual connection creates sensory distancing; however, eyes

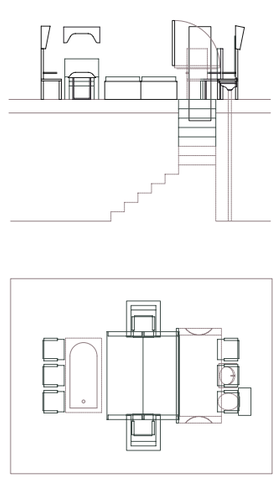
Slip: to slide out of place or shift position. Cover: a table setting for one.

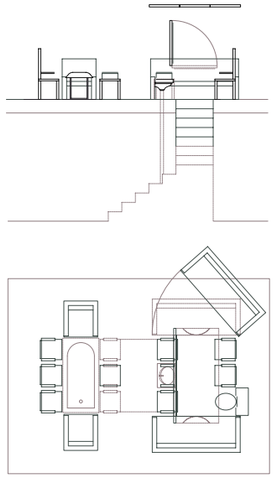


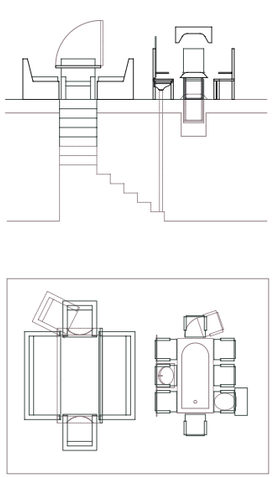


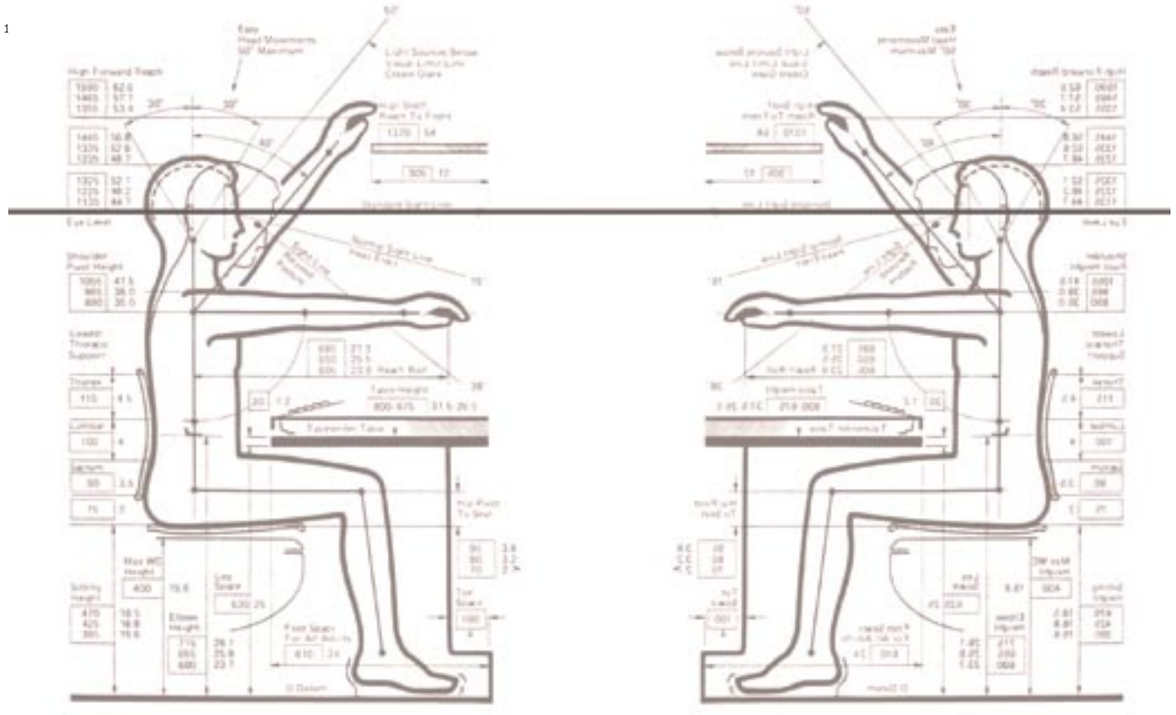










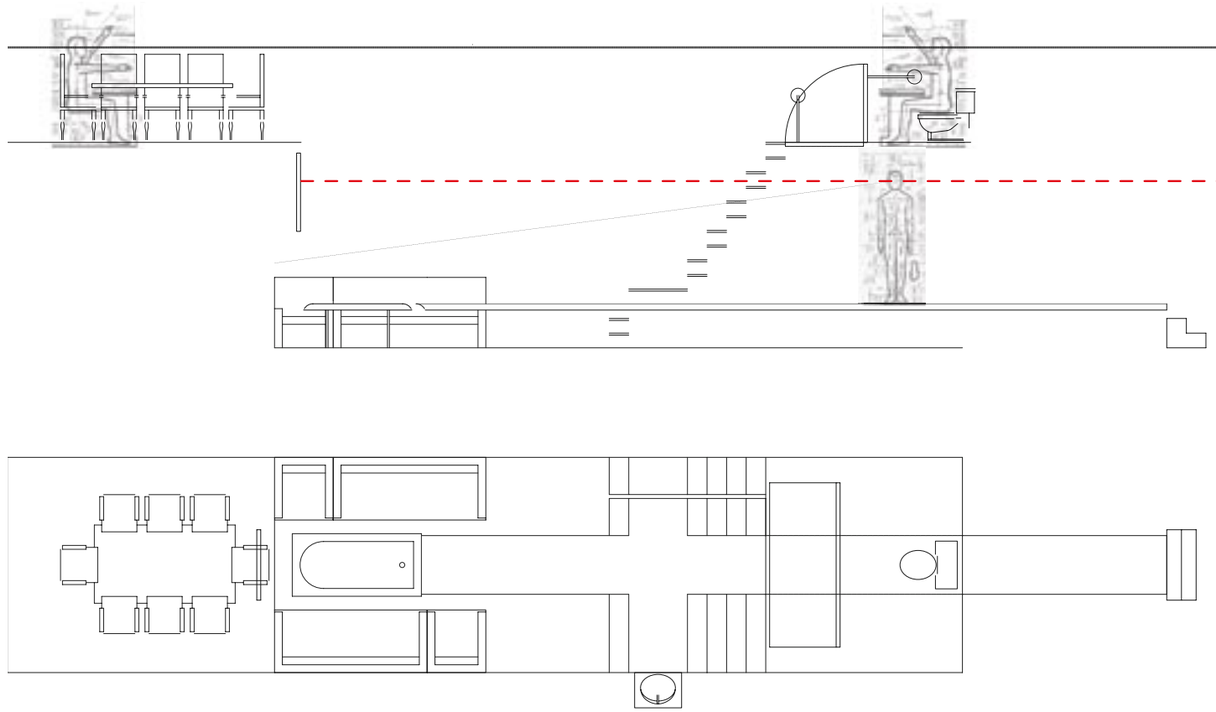


are connected to bodies with memories of past corporeal experiences.[4] The guest enters the eye-to-eye slipcover along the catwalk at the end of which the dinner guest is eye-to-eye with the bathroom mirror. Flush with the catwalk is the bathtub-coffee-table. Upstairs, the dining table and chairs are eye-to-eye with the toilet. As the guest passes over the front door, it tilts upward as a screen with the toilet paper dispenser as door handle.

DUMBWAITER SLIPCOVER

The dumbwaiter slipcover is a vertical shaft with moving floor and attached compartments that precisely fit the dinner party inventory. The size of the shaft just fits the dining table and chairs if they are pulled out of the walls in the correct order; however, the floor movement allows for many combinations of inventory and guests. The movable inventory can also be bra-strapped to docking points on the walls converting the space to a double-height use. The dumbwaiter puts things in their places without dictating use.

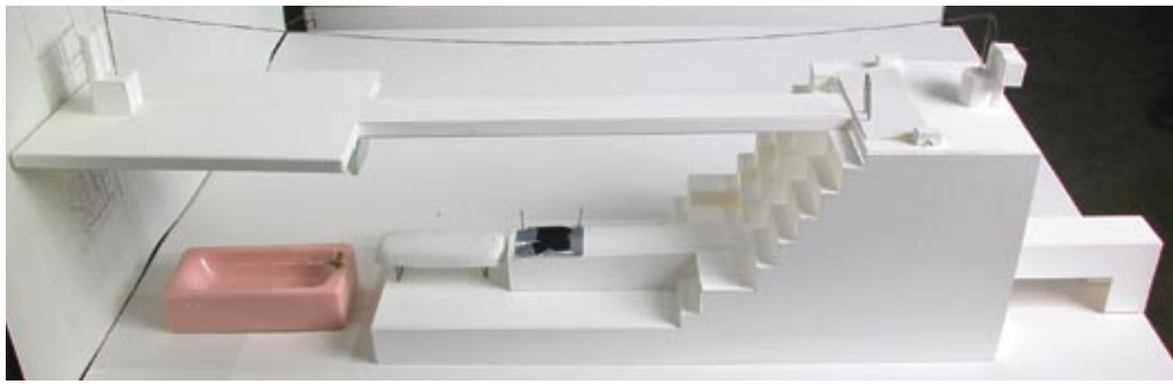
Notes
1. Drew Leder, *The Absent Body*, (Chicago: The University of Chicago Press, 1990), p. 66.
2. Karen Franck, "From the body," *Architecture Inside Out* (Chichester: John Wiley & Sons, 2000), p 32.
3. Drew Leder, *The Absent Body* (Chicago: The University of Chicago Press, 1990), p. 24.
4. 'Modernist design has housed the intellect and the eye, but it has left the body and the other senses, as well as our memories and dreams, homeless.' Juhani Pallasmaa, *Eyes of the Skin* (London: Academy Editions, 1996), p. 10.

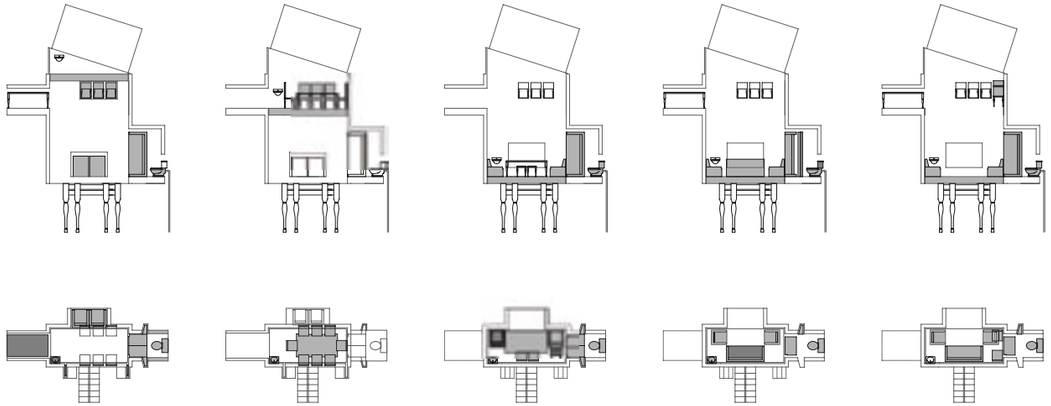


Slip: the relative displacement of formerly adjacent points. Cover: to match.

Bathtub coffee table.

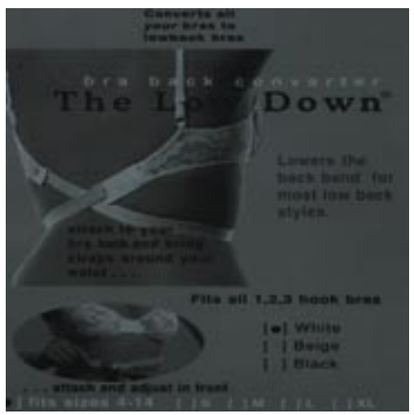
Eye-to-Eye slipcover.

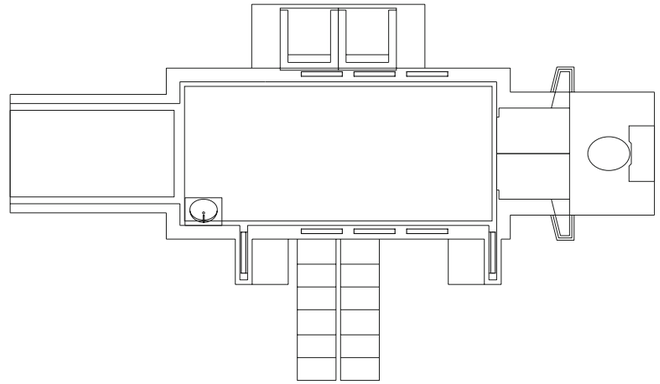


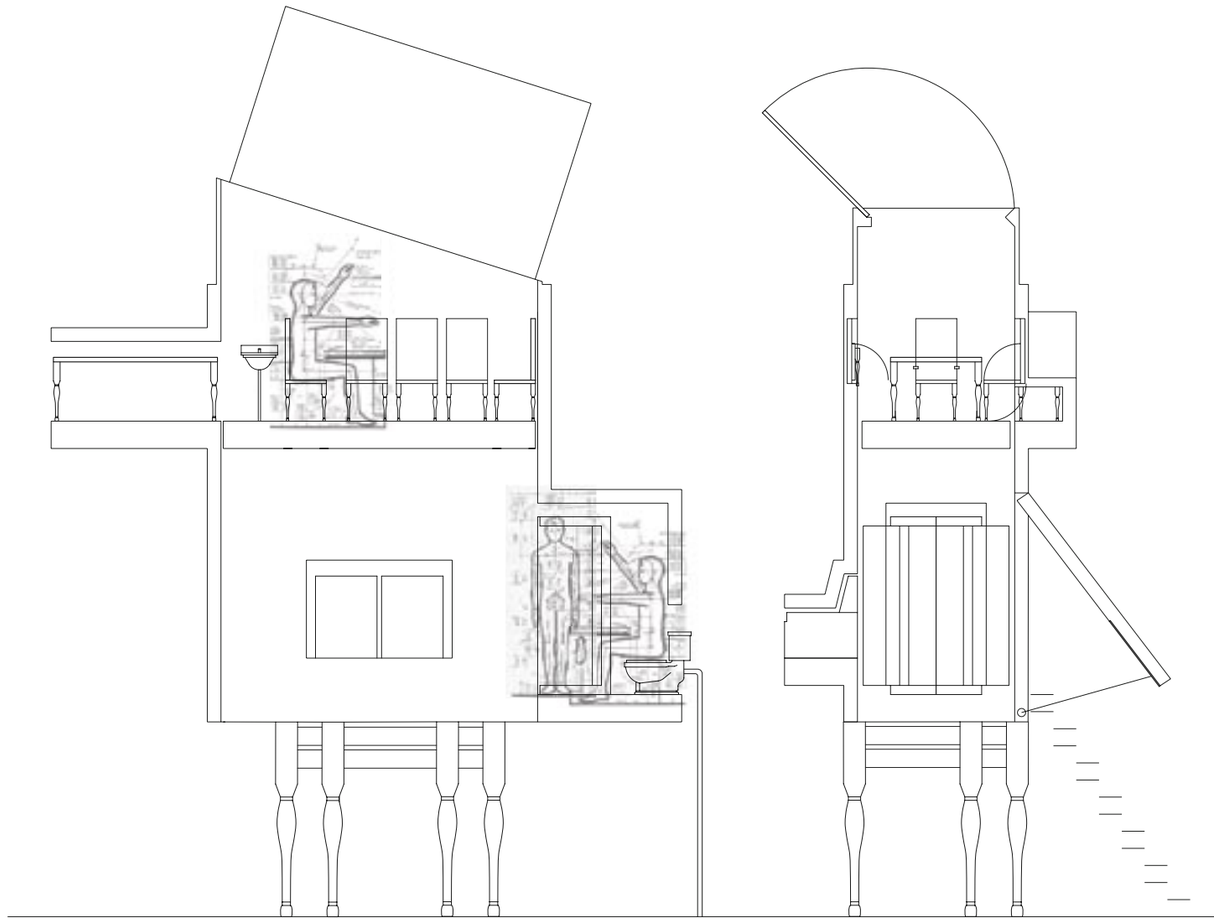


Slip: movement between two parts where none should exist. Cover: to compensate for.

Dumbwaiter slipcover.

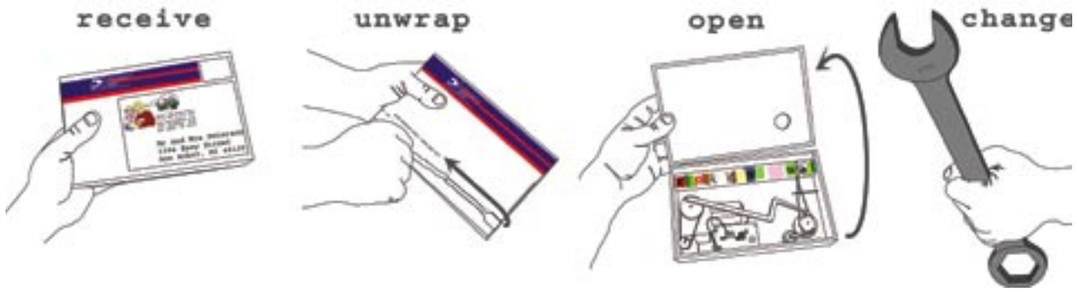






OPERATIONS IN CRISIS: A SUBURBAN INVERSION

Mark Weston



THE CRISIS ENGINE

Oddity performs. From the scale of an object, to that of the city, moments of strangeness can separate the extraordinary from the merely satisfactory. It is possible to bridge two impossible scenarios with an interface consisting of an instrument which operates on the virtue of its oddity. Such machines, known as crisis engines, are capable of overcoming the momentum of the status quo by creating a performance space that forces a reexamination of the known, the familiar, or the assumed.

Oddity is based on familiarity. A machine can be strange in its operation, but such an operation, when broken down, can reveal itself as a lumbering assemblage of boots, footballs, and birdcages: all familiar in their function. Today's synchronized mechanisms are still based on the apparatus of the cuckoo clock, but turning to the beat of an oscillating crystal. A strategy of efficient misuse, borrowing from these two systems and applied to any situation has the possibility of producing machines of critical oddity.

MECHANICAL POSTCARDS

A series of servo-mechanical postcards was developed to be mailed out to a suburban testing ground. Inside the cigar box-sized wooden container is an odd contraption of curious clockwork-bred design. It is a message delivery system that uses deliberate mechanical inefficiency to efficiently deliver its message.

The mechanical postcard demands a closer examination of the message contained than the delivery of a simple slip of paper. While the mechanical postcard is too strange to be ignored, the transparency of its mechanization renders it somewhat familiar. The recipient will keep the box, show it to his friends, or give it away, further spreading its message. It is a form of crisis engine, powered by oddity, designed to force people to consider the houses in which they live through a more critical lens.

DRIFT HOUSE

The American suburban dwelling is a reaction-in-refuge that denies the modernist machine aesthetic paradoxically responsible for the miles upon miles of identical "custom" homes. If the American gablescape only privileges images of conventional respectability, then the true potential of technological momentum has been derailed.

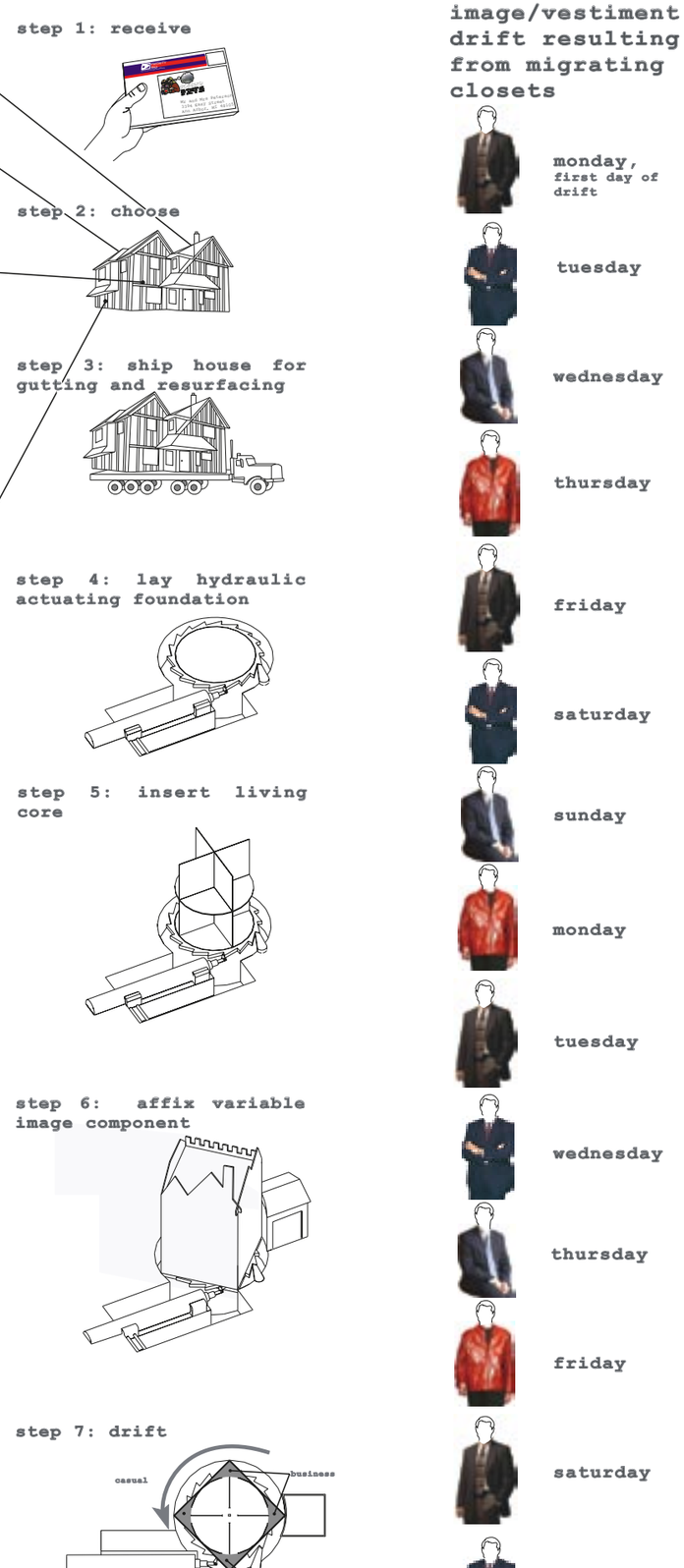
Technology should be understood not as instrumentation (a mechanical postcard or the computerized infrastructure of a house) which may or may not be expressed in built form, but rather as part of the existential condition of living through which we filter our realities and identities. The spread of home computing has reordered the relationship of house to machine. Given that contemporary technology is widely believed to have produced a new machine age, this could imply a return to a classic modernist notion of architecture as machine for living. Unlike the earlier formal adoption of a machine aesthetic, today's "build your own PC" internet sales mentality suggests interactive architectural possibilities: a pick and choose strategy of the "custom" hot-swappable façade and floor plan. The current reality of this arrangement, however, is that the American homeowner has been left with a product which is merely adequate.

To create a drift house, all choices must be embraced simultaneously. The homeowner first selects four new façades including any permutation of the vernacular, historical, or whimsical. Large catalogues of such façades are widely available and discriminate little between perceived categories of history, style, type, etc. Next, the home must be uprooted and shipped out for gutting and resurfacing. The movement of traditional homes can become a source of pride for the owners of these homes and for society at large. To move a traditional house, which is perceived as the icon of permanence and stability, is seen as one more technological feat of a mighty power. Alternately, the house could be thrown away or chopped up and sold for parts.

After removing the remaining and inelegantly stable foundations of the home, a Pneumatic Actuating Foundation (PAF) is installed in its place. The home can now rotate 90 degrees clockwise at the owner's whim. Affixed directly to the top of the PAF is the Living Core component. This modular, two story turntable contains the basic essentials of every home: vaulted entry, living room, family room, dining rooms, kitchen, breakfast nook, 3.5 bathrooms, and three bedrooms. The living core rotates ninety degrees upon each PAF actuation. The façades, or Variable Image Components (VIC), rotate around this living core and are adjusted to facilitated rotation. The corners of the VIC, in the rounded poché left by the Living Core, contain, in total, eight closets that change room adjacencies upon each PAF actuation. Each PAF actuation results in an immediate street-side home image adjustment and rotation of closets of clothing. Each day, upon awakening, the owner's wardrobe matches the external dwelling demeanor of the VIC component. His attire begins to slowly drift out of phase from the routine; when he comes to work on Monday in his Saturday attire, several of his coworkers find themselves slightly uncomfortable in the face of this new confidence. Others, however, are strangely affected and find their moods swinging with the owner's now-dynamic attire. Meanwhile, the crisis engine driven force of change is at work back at the homestead; after several weeks of rotating façades, one or two of the owner's neighbors notice the change and begin plans for the modification of their own homes. The Drift House is a suburban home-scaled Crisis Engine.

APPLAUSE WALL

The applause wall is a crisis engine in its purest state: raw performance. It consists of fifty-one sounding boards with mechanically actuated "clappers." The mechanism is sequenced using an array of transistors controlled a small microprocessor, which stores the sequences and plays them back randomly. The applause wall suspends and subverts the expectations of the observer inside an envelope of performance space.



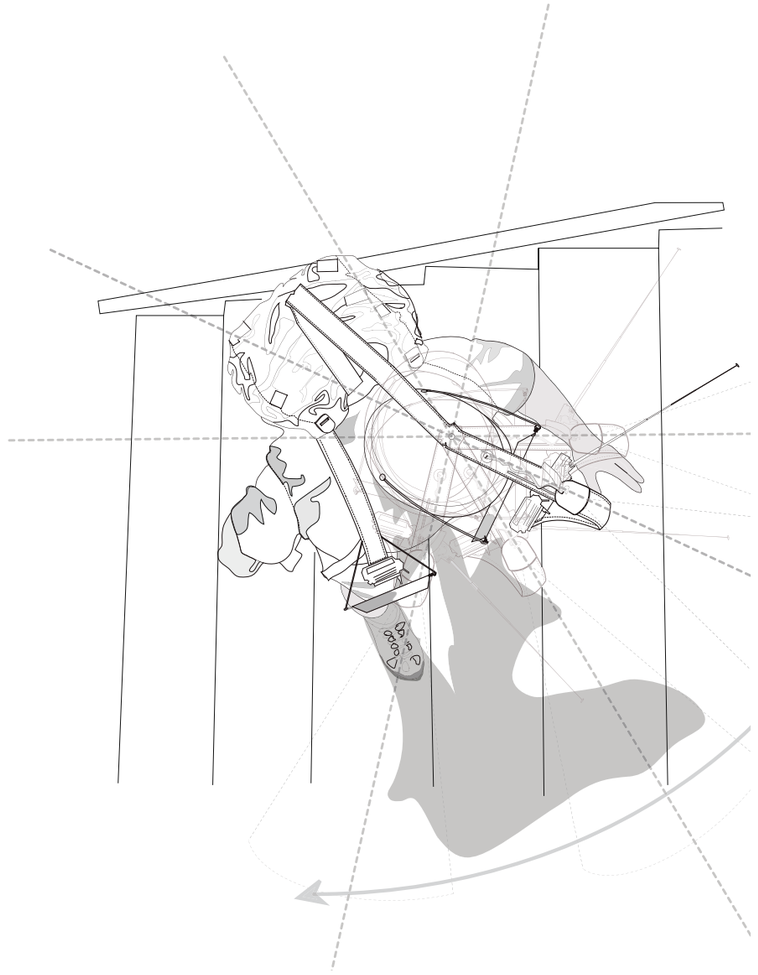
The applause wall is a tangential extension of the mechanical postcard enacted at a different scale. While the postcards challenge recipients to rethink notions of how they exist inside their homes, they do not engage the viewer's space. They are objects separated from but completed by a view-at-a-glance.

The clapper engages the observer differently, by removing the separation of the viewer and object; a wall, as you stand staring at it, occupies your space. Because of its length, extending past the edges of peripheral vision, it is not thoroughly understood from one vantage point. This spatial condition is played against the different clapping patterns as the wall is activated. One device is activated on the heels of another, over and over, cascading past the viewer. Although each device is activated individually, the rhythm is suggestive of a status quo, which becomes increasingly insidious until the wall seems to be goose-stepping, though visually random. Memories and associations are drawn upon to subvert an artificially created normative condition. The wall is in fact a façade, with inevitable associations in the mind of each viewer. Not unlike the artificial neatness of the façade of a house, the applause wall sets up a condition which, when peeled back, reveals the the messy oddity of our lives.

VIDPROXY (VIDEOTRONIC IMAGE FEEDBAG)

The façade of the American single family home expresses nostalgia and conventionality. A slow but constant drip of television, advertisement, and the blunt momentum of the status quo reinforce this projected image. The suburban façade is essentially a defense mechanism to hide individual identities unmoored by constant and aimless channel surfing. The Vidproxy replaces conventional pretense with a similar cultural video-feedback filtering device. The user views their present reality through two monitors set at eye height and a third facing the outside world. One monitor projects video fed from the helmet-mounted camera, while the other receives broadcast television. Both formats can be simultaneously recorded and/or played back. The third monitor reveals to outside parties how they are perceived. The Vidproxy reveals the true American personality: seeing is believing is being.

Glenn Murcutt inhabits the vidproxy.



BEHIND CLOSET DOOR NO. 1

Carrie Johnson

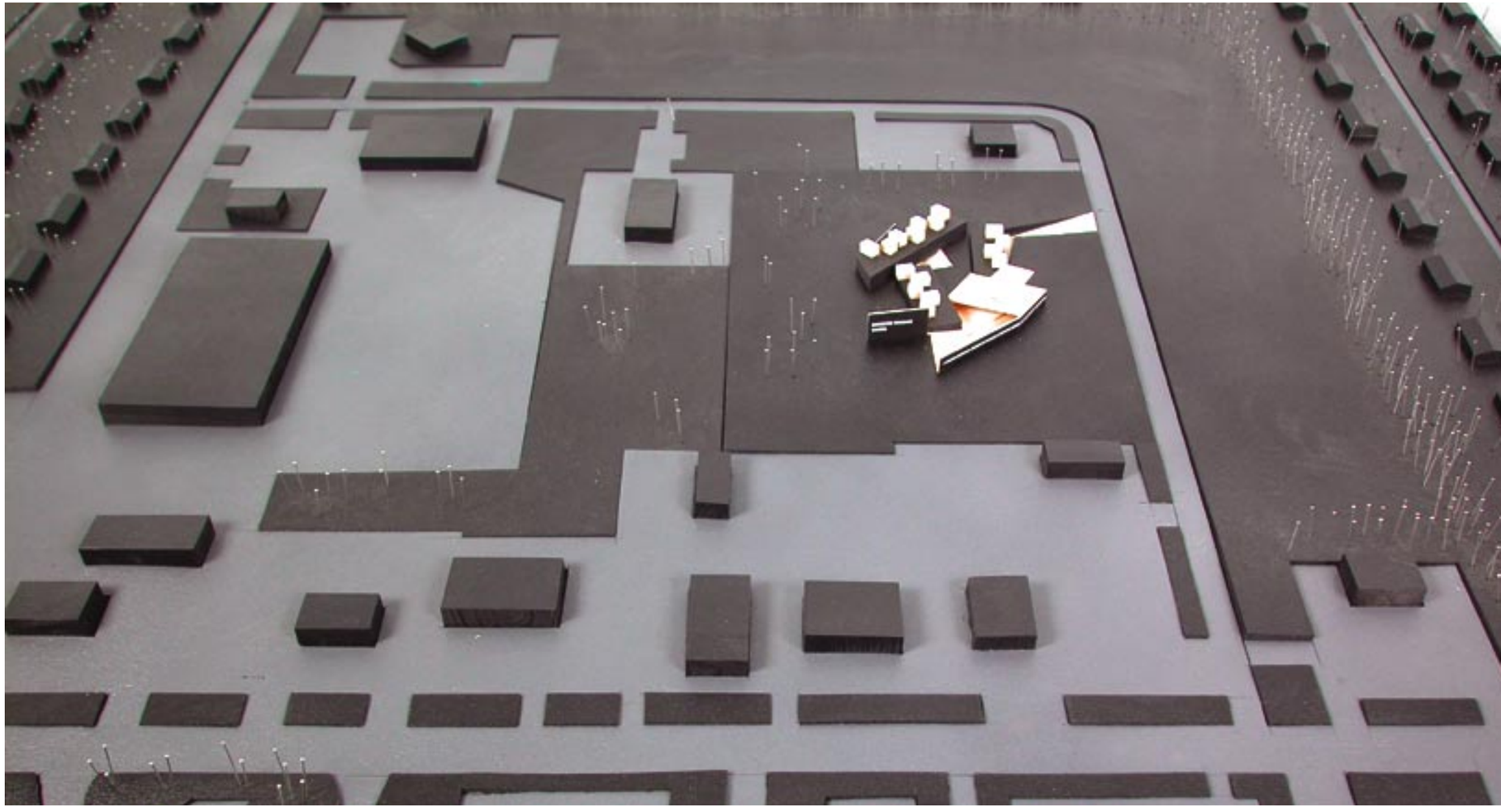
How *public* is a public institution if it is hidden from the view of society? At what point does the anonymity desired by those who utilize hidden institutions become a function of the public need to deny their legitimacy? Through the exposure of these concealed institutions, the function of architecture can be explored within the development of a public attitude and its effects on those who seek the services of institutions that are veiled, unadvertised, or hidden due to the stigma associated with their program.

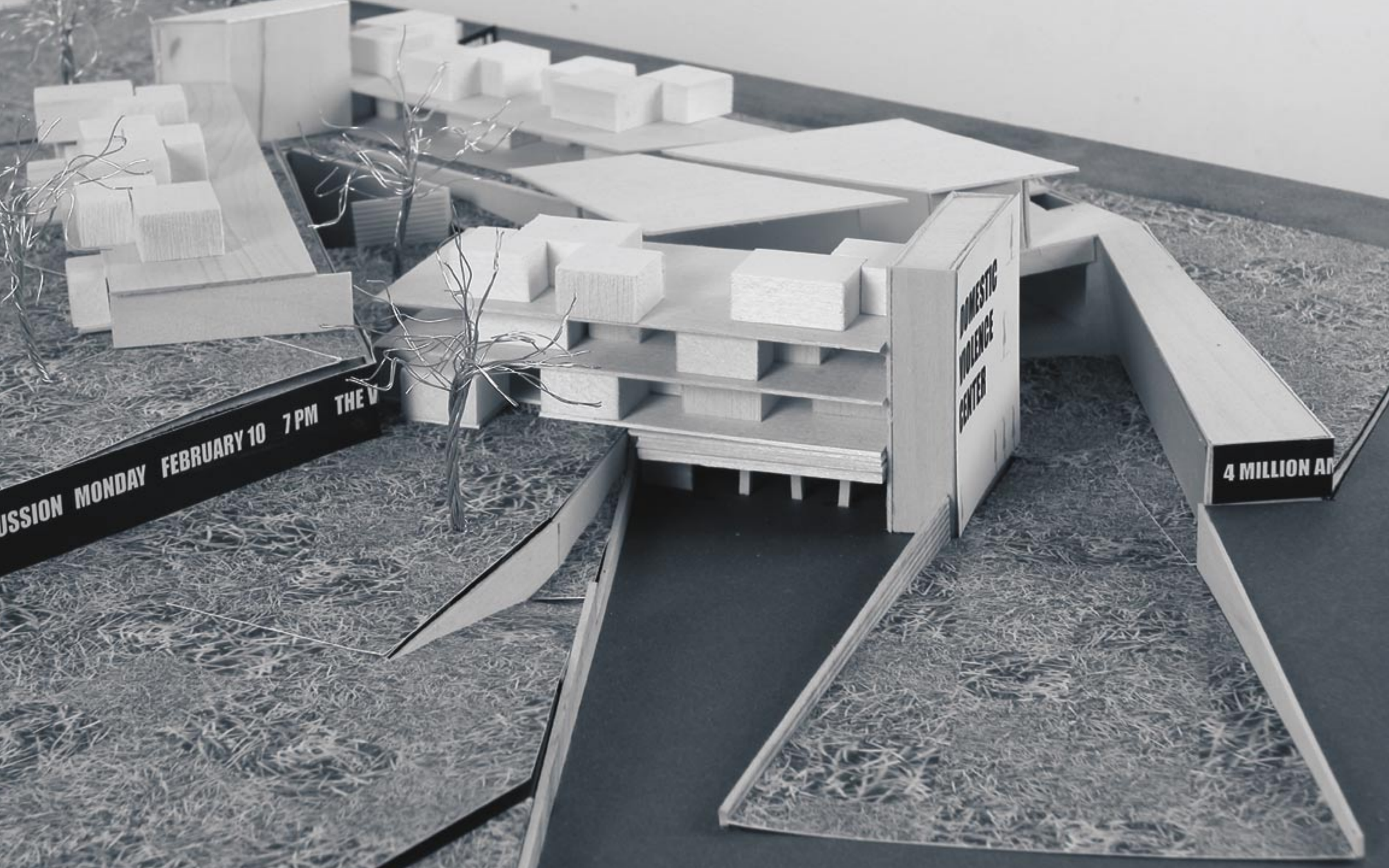
While a number of hidden institutions, ranging from mental health clinics to drug rehabilitation centers, may exist within one community, this particular thesis chooses to investigate domestic violence shelters as sites of such stigmatization and seclusion. While shelters exist to aid survivors, most programs are invisible to the community they serve. How does this program, traditionally restricted to anonymous territory, make a bold move into the public spotlight without compromising the effectiveness of its mission? Perhaps an unwanted entity in the open social sector, how can this institution, through architecture, shun compliance with unwritten social rules to make a decisive statement about its legitimate presence and purpose within the community? Though architecture alone will not solve social problems, it is important to ask what function, if any, architecture has in the development of collective ideas and attitudes.

Located in the conservative suburb of Jenison, Michigan, this proposal investigates both the social and architectural implications of positioning a domestic violence center in the public heart of a small community. Unlike many anonymous shelters, the project utilizes both signage and formal expression to convey its physical presence within the surrounding environment and its programmatic mission to educate the general populace. Integration of signage and building is critical; while text is essential in conveying the statistics of domestic violence, its physical connection to the shelter communicates the severity of the problem *particular* to that community, reducing the opportunity to disengage the facts from the public identity. Program further integrates community into the site through public elements that interlock

with the shelter, including an auditorium, a crisis/counseling center, and a youth recreational center. Incorporation of civic space is twofold: first, it works to actively familiarize the public with domestic violence and its survivors to reduce stigma and generate a communal support base for residents. Second, it fosters an atmosphere which allows gradual transition of the resident from refuge back into society. Critical to this transition is the line between public and private, which fluctuates according to the personal comfort level of each resident. A separate entrance with concealed parking allows a survivor to enter the site in a protected manner, upon which the resident determines interaction with the public realm. The overall form questions the institutional prototype: while the multiplicity of the unit, which characterizes both residential and administrative programs, works to formally convey the extent of domestic violence, building and landscape break away from the economy of the institutional box, shifting to accommodate delicate relationships within the program. Promotion of aesthetic over economy is therefore key; domestic violence is not a problem that can be hidden in an anonymous box, but one that is worthy of architectural consideration and expression.

While the culmination of this project attempts to critically question the status of the domestic violence center through the placement and expression of architecture, such queries only begin to understand how this publicity can benefit both the cause of aiding survivors and the necessity of community enlightenment. Through the persistent reassessment of domestic violence, the public identity, and the architecture that serves each, we may continue to explore these delicate, yet critical, relationships. Although not a remedy, architecture has the opportunity to become a progressive element in the exposure of this hidden institution, as well as a catalyst for social reflection and transformation.




USSION MONDAY FEBRUARY 10 7 PM
DOMESTIC
VIOLENCE
CENTER
4 MILLION AM

POLLING FOR DOLLARS

Damian Petrescu

If we live in a consumer society that is a manifestation of late capitalism, then President Bush's order to Americans to defeat the "evil-doers" by continuous and uninterrupted shopping makes perfect sense. We love commodities, and our inability to stop shopping could not contrast more with our will to vote. Architecture can't make us more responsible citizens if we choose not to participate in politics, but it can structure a set of relationships to bring people together and encourage political participation.

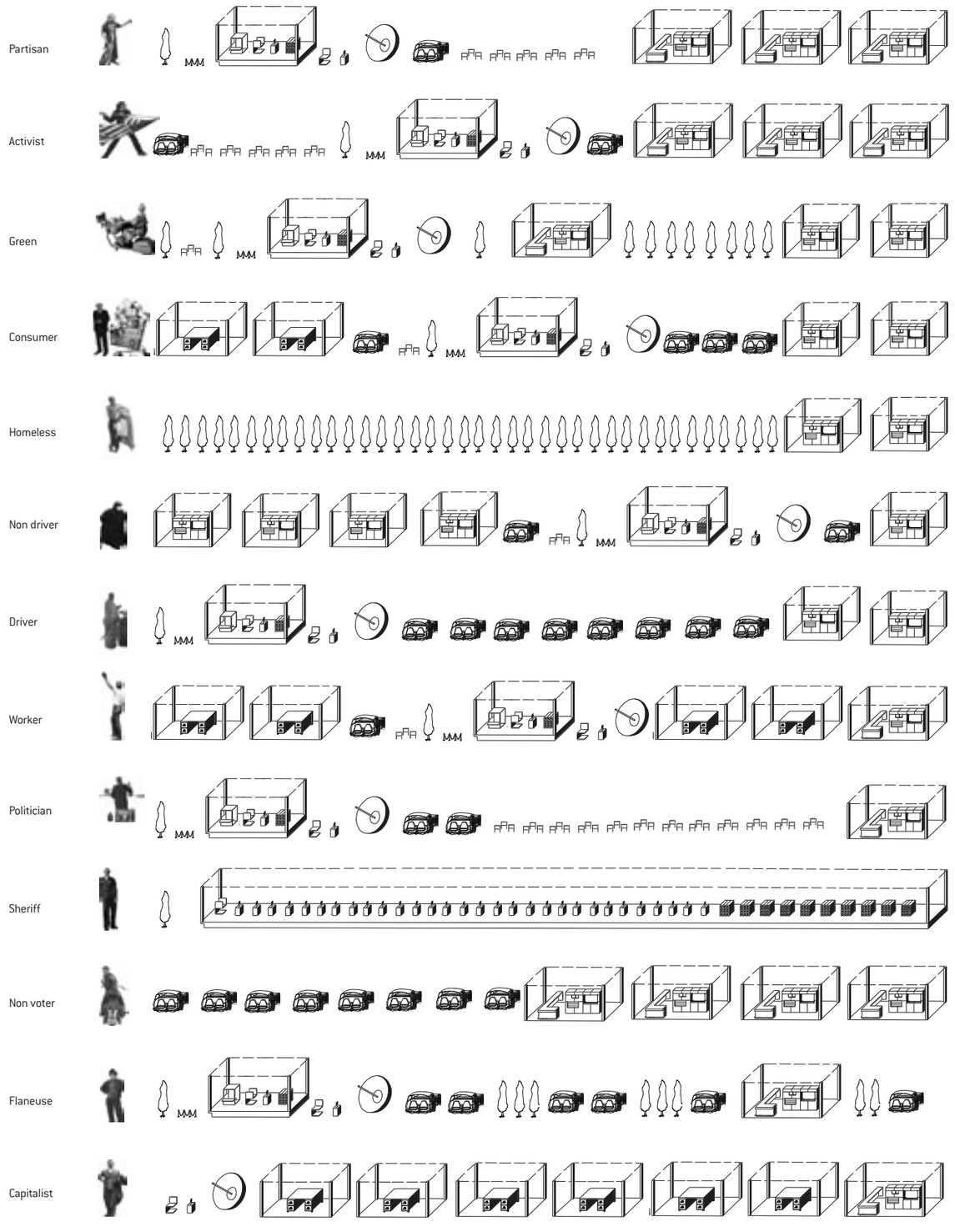
Despite its centrality to republican governance, the American polling place has had no permanent or independent existence. In the 2002 elections, anonymous architecture configured a set of temporary public-private hybrid spaces including: laundromats, used car dealerships, and attached garages of single family homes. This flexibility conjures up images of do-it-yourself electioneering and hard-sell campaigning as easily as it does coercion and intimidation. Before addressing why we choose not to participate in politics, we need to reconsider the place of voting in society.

Given Americans' propensity to avoid the polls, a successful polling place could reverse this alienation by bringing the vote to the people. That means taking up the challenge of adapting the public poll to the private property of consumption, the big-box retail strip. In the townships of Michigan, the electorate's diversity comes together out of its trucks, cars, and minivans in the parking lot of the local Meijer's "thrifty acres." The Meijer's customer comes for utilitarian goods—food, clothing, shelter—that within the environment of discount retail become indistinguishable from the volume of inexpensive commodities she ends up purchasing.

Our selection of commodities expresses our identity. We imagine this choice, in politics as in consumerism, sustains our free will. We proudly identify ourselves as democrats, republicans or independents, while denying that our actions are predicted by what we buy, drive, and eat. As uncomfortable as it makes us feel, the power of pollsters and marketers is their ability to capitalize on how our consumption patterns predestine how we behave as workers, soccer moms, and limousine liberals.

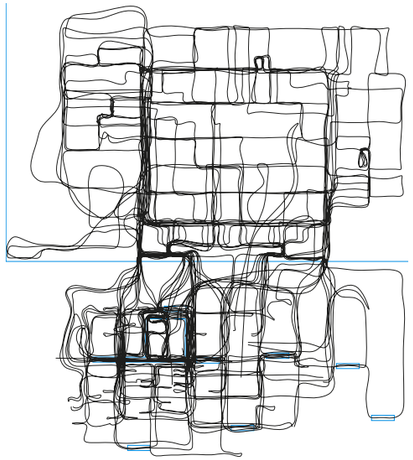
The notion of a permanent polling place transforms infrequent political participation into a calendar of continuous polling. Today, voting is a twinned process. We are polled once within the precinct and then again as we exit. The permanent polling place parses these two functions and takes continuous exit polling as the site of its on-going program, which five times a year happens to become the site of electoral voting. This counter-intuitive inversion, the creation of a venue for opinion polling as political participation gives physical space for the collective real-time analysis and debate of polled attitudes. The citizens and the pollsters have equal access to the information generated by the electorate's opinion. Ultimately, it could lead to a new understanding of how choices condition behavior, which could turn polling into a more transparent process. The inversion of the exit poll from the official act can return political participation into the essential communal ritual of open-air democracy.

The permanent polling place's ritual of continuous exit polling takes advantage of our conflation of democracy with consumerism. The permanent polling place is pragmatically embedded within the infrastructure of big-box retail. This understanding of materialistic values fosters an awareness of the political choices behind our consumption. The siting strategy multiplies the in-store communication systems into a field of scattered polling booths. These booths, now limited to price check and

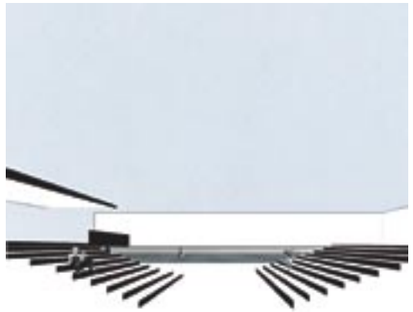


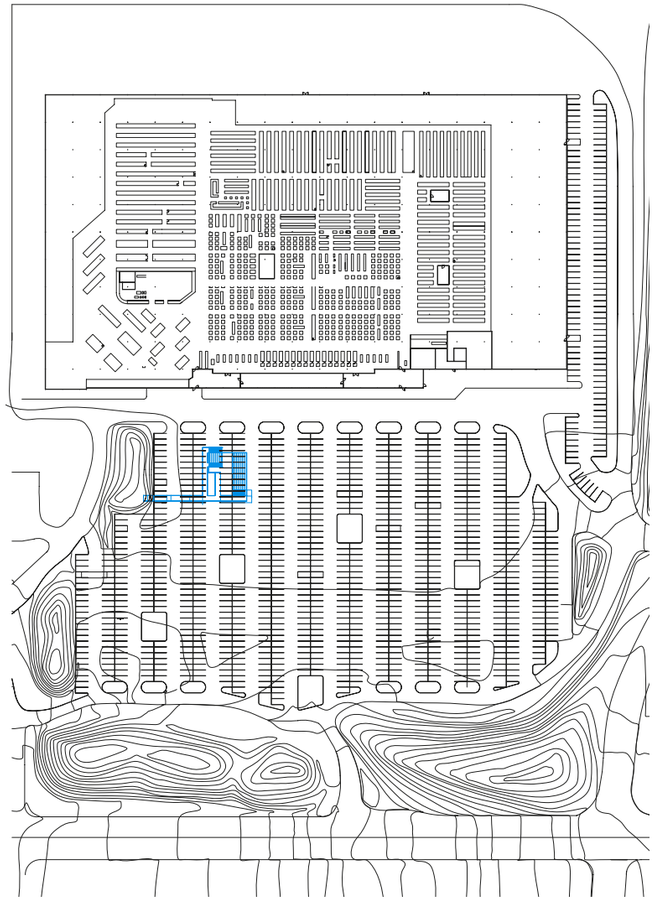
bridal registry, become interactive polling terminals that let all self-interested citizen-consumers participate. At the booths, the activist taking a break from soliciting petitioners and the non-voter drawn to the terminal in the middle of a quick errand have equal opportunity to devise their own polls, register their opinions, and learn the consequences of their purchases. In turn, as buying becomes voting and voting becomes buying, political participation becomes spontaneous and easy.

In the Meijer's parking lot, the permanent polling place creates a new public infrastructure. Here, in the space between the store exit and private vehicles, is an open structure, a gathering place to "talk politics," where the results of the in-store polling are exhibited. When activated by election day voting and town meetings, its unorthodox form is understood as the efficient accommodation of these communal acts. The rest of the year, the polling place's form is an iconographic presence memorializing these celebratory rituals in the language and material of the parking lot. By connecting the asphalt of the parking lot with the terrain vague of Meijer's manicured lawns, it proposes a reevaluation of the suburban landscape. It is open for everyday outdoor activities as diverse as morning prayer, afternoon tailgating, and midnight basketball. This outdoor infrastructure provokes notions of privatized public space—programmatically dependent upon the big-box retailer for amenities such as rest rooms, yet providing a forum where everyone's voice may be heard. It becomes a venue where people feel comfortable expressing unpopular opinions in dissonant actions as well as foaming-mouthed patriotism. It becomes a gathering place where inhabiting the space itself becomes a political act, the almost unintentional participation in the political realm. The permanent polling place stands as a prototype for the addition of public space to suburbia that addresses the most vexing developments in America: the failure of political participation and the decline of public civic space.



Meijer's circulation diagram.



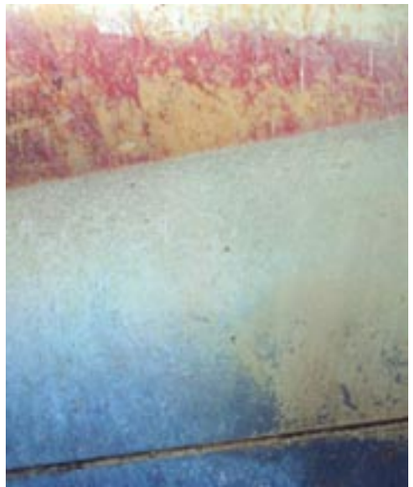


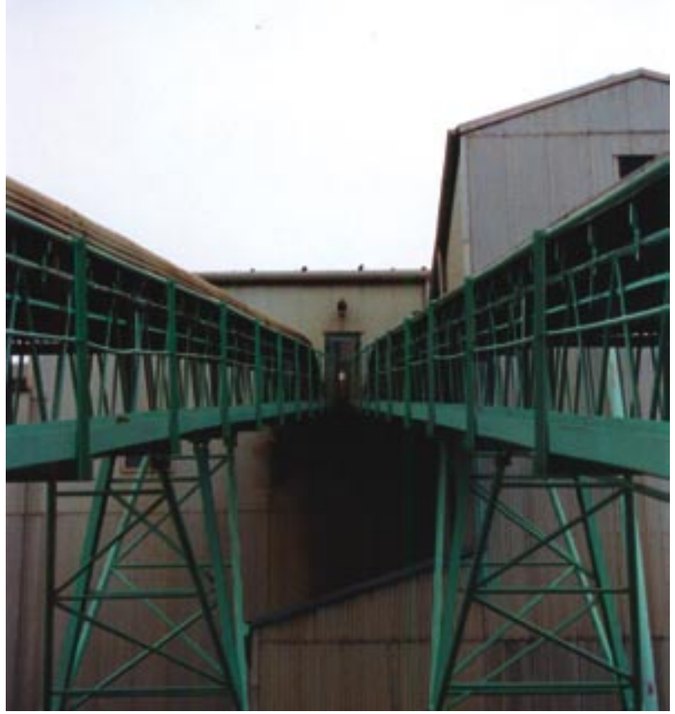

VOTE

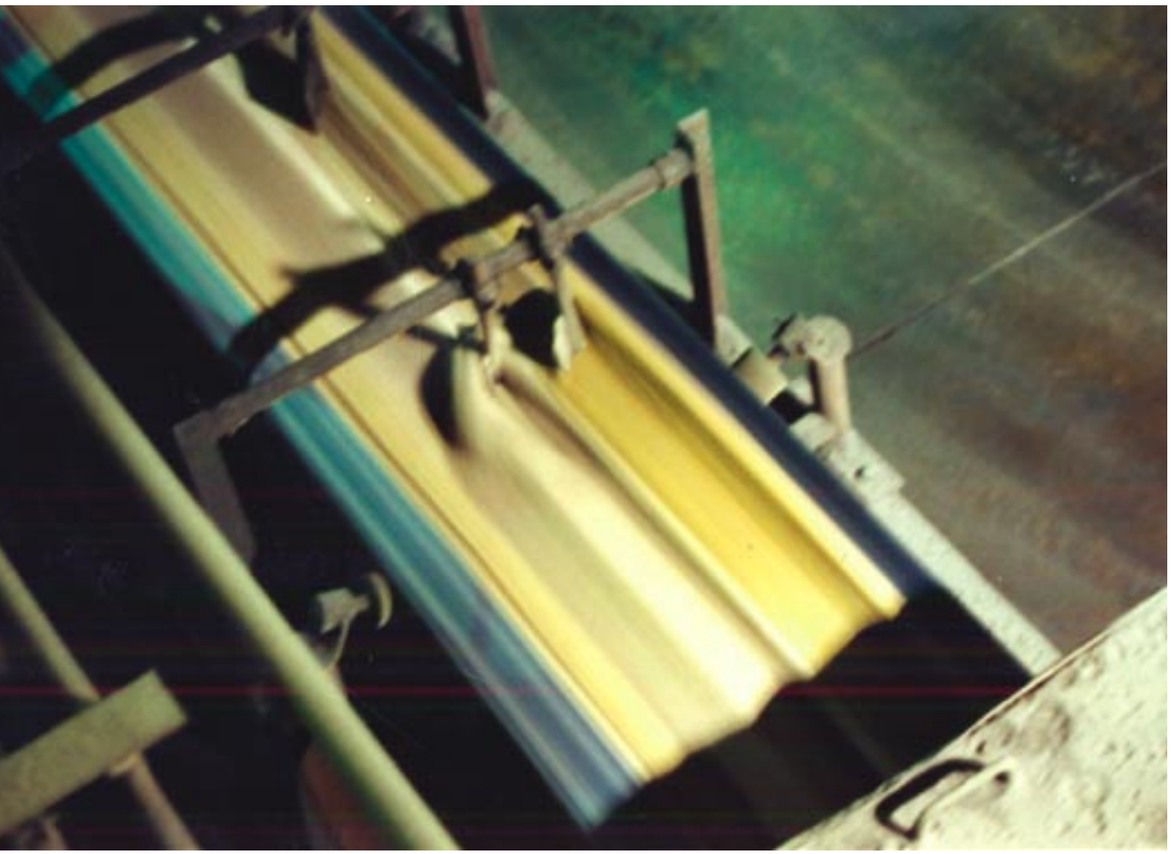
FELLOWS

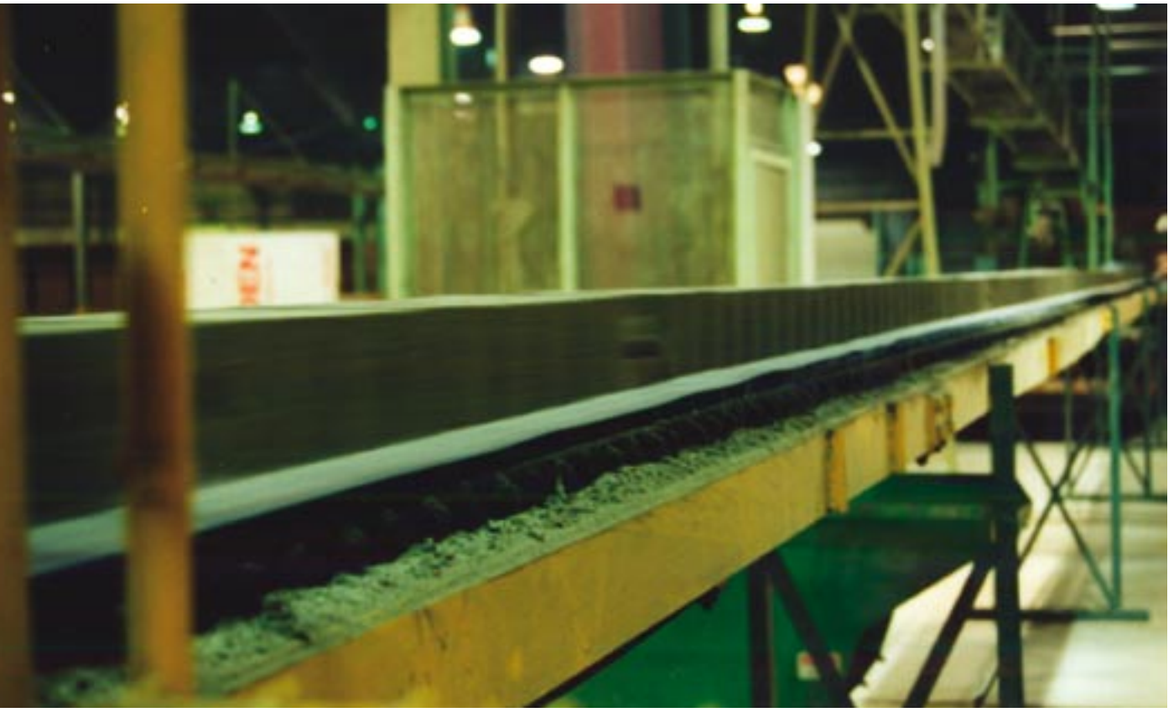
BRICKS

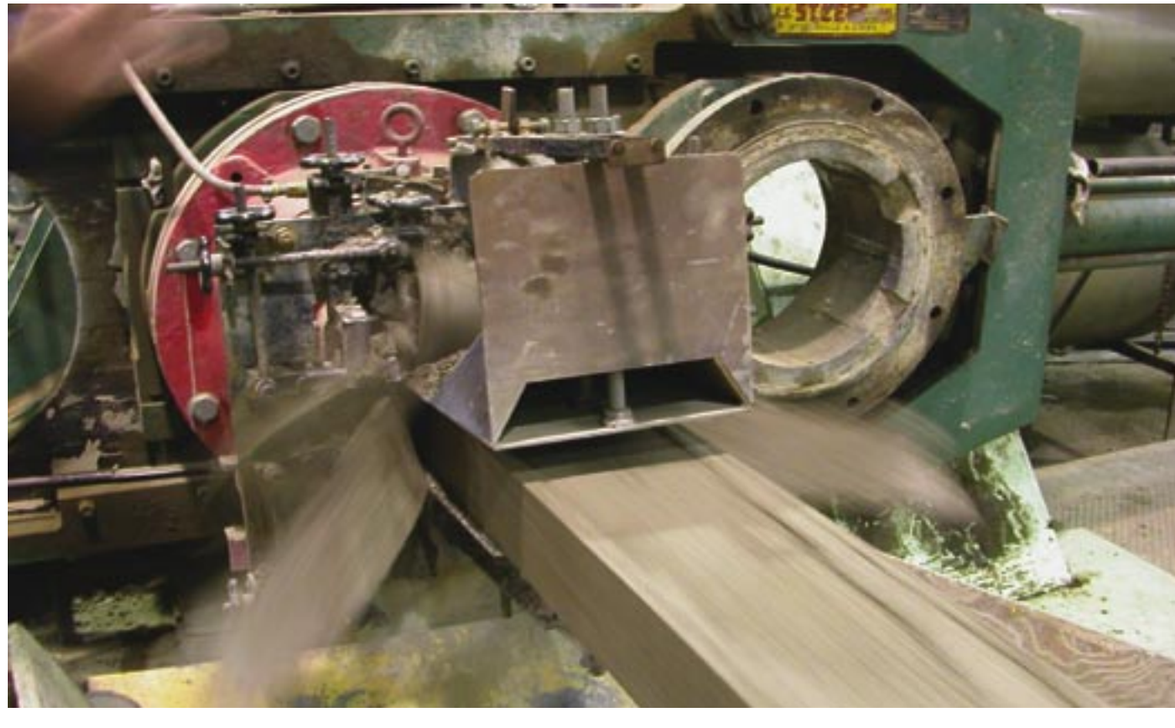
Sandy Attia

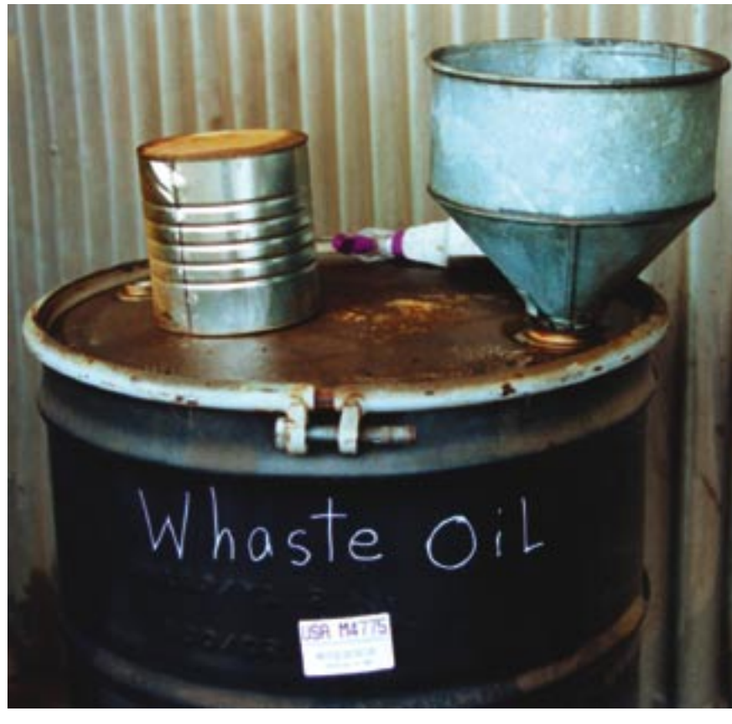











Whaste Oil

All photographs taken at Belden brick manufacturing plant near Canton, Ohio.

THRESHOLDS

Karen M'Closkey

The operation of threshold explicitly rejects the reduction of passage to an abrupt crossing of a thin edge, or the gratuitous continuity between two entities. Rather, threshold is understood as a place of becoming, from which identity as well as relationships can emerge ... It enables a conscious privileging of the spatial and material condition of "between." It is less about the actual physical permeability of this in-between realm, and more about its role in the formation of identity.[1]

—Anita Berritzbeitia and Linda Pollack

The territory between building and landscape encompasses thresholds that are both spatial and experiential. These zones of occupation can be either strongly delimited or intentionally ambiguous according to how they enclose, frame, elevate or extend the inhabitant. Devices such as doors, windows, and loggias construct the passage between interior and exterior, inscribing the occupant's visual and physical experience into the work in various ways. This essay foregrounds thresholds in order to focus on the intrinsic relationship between architecture and landscape: "Separation and communication are connected things; it is the former that creates the condition of the latter."[2] Yet, in the textual and graphic treatment of architecture and landscape, they are often presented as autonomous and independent spheres, thereby excluding the communicative potential of this experiential "in-between." This study seeks to transgress this disciplinary division through the graphic analysis of six precedents.[3] These case studies demonstrate similarities that transcend the projects' chronology, yet their material qualities and symbolism situate them within their respective eras.[4] Thus the project encompasses two tactics. The first disregards an historical lineage and instead privileges the operation of threshold as a spatial/experiential condition that provides tools for extending these affects into contemporary practice. This allows us to consider similarities among the projects in the means by which various devices construct the relationship between architecture and landscape, interior and exterior. The opposite tactic, evident in the comparison of the Schindler/Chace House (1922) and Villa Wilbrink (1994), emphasizes the differences in conceptions of the relationship between architecture and landscape and how those difference have manifested themselves in a shift from classicism's figure/ground, through modernism's cubist figure/figure to postmodernism's digital ground.[5]

Drawing, like any organizational framework, categorizes our existence. The drawings shown here rely conceptually on contemporary ideas of mapping, which can be traced, in part, to Leo Steinberg's notion of the flatbed picture plane.[6] Unlike the Renaissance vertical picture plane, understood as a "view" into the world, the flatbed is a horizontal receptor without fixed orientation upon which objects, data, or information may be imprinted, projected or pressed. Referring to mid-20th century painting, Steinberg states that:

... the pictures of the last fifteen to twenty years insist on a radically new orientation, in which the painted surface is no longer the analogue of a visual experience of nature but of operational processes ... I tend to regard the tilt of the picture plane from vertical to horizontal as expressive of the most radical shift in the subject matter of art, the shift from nature to culture. ... [T]his internal change is no more than a symptom of changes which go far beyond questions of picture planes, or of painting as such. It is part of a shakeup which contaminates all purified categories.[7]

Utilizing the "flatbed" method of drawing enables us to combine various images, techniques and information that have the potential to move beyond purely pictorial or compositional methods of production to develop more complex mappings and diagrams which operate between historically bounded categories.

AMERICAN DREAM, PARADISE LOST

Perhaps the modern inhabitant was not so much to become exteriorized as to find the home no longer either simply an interior or an exterior. Living was somehow to now occupy the space between the two, inhabiting the threshold.[8]

—Georges Teyssot

In modernism the window/wall underwent a significant transformation in which increased degrees of visual transparency reflected the changing relationships of inside to outside, public to private. Curtain walls, strip glazing, corner windows and entirely removable or absent walls extended the domain of the buildings outward. The need to define and defend the inside from the outside was no longer deemed necessary and architects began to consider the exterior realm as integral to the creation of the interior: "To say that 'the exterior is always an interior' means that the interior is not simply the bounded territory defined by its opposition to the exterior. The exterior is 'inscribed' in the dwelling."[9] In contemporary architecture, this integration of interior/exterior no longer simply corresponds to building/landscape or culture/nature designations.[10] A figure/ground relation is no longer assumed and, as the ideas elucidated by Steinberg have made their way into contemporary architectural practice, the roof/ground has undergone a scrutiny similar to that which the window/wall underwent in modernism.

Both R. M. Schindler's Schindler/Chace House in West Hollywood, California (1922) and UN Studio's Villa Wilbrink in Amersfoort, Netherlands (1994) inhabit the threshold between building and landscape; moreover, they are obvious examples that illustrate the shift in orientation and categorization to which Steinberg refers. This analysis focuses on their differing treatment of grading, vegetation and windows, and how this affects the reading of their boundaries. Both projects equalize building and site. In the Schindler/Chace house, inert and vegetal materials share equal status in the construction of inhabitable space. At Villa Wilbrink, Ben van Berkel and Caroline Bos play on our oscillating perceptions of building and landscape by collapsing the space each occupies and treating them in a materially consistent way. The architects of both projects use landscape to conceal: in the former by surrounding the architecture vertically, in the latter by encasing it obliquely. Neither project has façades or entries that are identifiable from the public right-of-way. From this vantage point, the Schindler/Chace house and landscape are primarily interior, while Villa Wilbrink is primarily exterior.

Schindler conceived of the entire site as a series of interior and exterior rooms that are conceptually intertwined, yet materially distinct. Designed for two couples and a guest, the house lacks conventional rooms; instead there is a studio for each occupant and a shared kitchen. The "L" shaped plan configuration of three wings, rotated about a centralized, shared fireplace, results in exterior walls that bound distinct outdoor rooms. These lawn terraces are level with the floor, whereas the grading at their edges falls sharply away, thereby associating them directly with their respective interiors. The steeply sloped grades are reinforced with planting, further dividing the garden spaces into private rooms. Schindler used a 6'3" high datum to emphasize the horizontal continuity of the house. Interior beams, door headers and roof extensions fall on this datum, which is positioned below the horizontal clerestory windows and above the vertical slot windows, combining all doors and windows into one system. The privet and juniper hedges are pruned to the same height, thereby applying the datum to both inside and outside, and inert and vegetal material. Corner windows placed diagonally opposite the entries project one's view outside. Regardless of one's position on the site, there is a continual play of alternating light and dark, inert and vegetal materials, collapsing building and landscape into an equal figure/figure relation. It is not possible to distinguish the entire house as an object from any single vantage point.

The absence of separate rooms for each function and gender hierarchy is in contrast to the social mores of the nuclear family and the standard layout of a single-family house. The house configuration, communal spaces and openness to the exterior embody the Schindler's progressive social ideas. In a letter of 1949 addressed to his ex-wife, Pauline, Schindler wrote that "Kings Road was built as a protest against the American habit of covering their life and their buildings with coats of finish material to fool the onlooker about the commonplace base."[11] Yet the nature of domestic space allows one to extend the interior only so far before the prospect of looking out is overwhelmed by the prospect of others looking in. While Schindler may have been an "incorrigible bohemian" (according to Frank Lloyd Wright), he was not an exhibitionist, judging by his property. He in effect enclosed the entire site by planting tall stands of bamboo along lot lines, concealing the living spaces from potential onlookers. Because vegetation has always been an acceptable barrier between properties, not held to the same codes as fences and walls, it does not appear to be an affront. This use of landscape is accepted as a benign register of privacy.

In a brilliant inversion UN Studio uses the gravel-covered ground rather than vegetation to conceal Villa Wilbrink from view. Whereas Schindler maximized the "interior" by building up to the lot lines with vertical vegetation, UN Studio maximizes the exterior by building up to the lot lines with oblique ground. From the sidewalk edge, the ground splits into ascending and descending planes. The upward sloping "ground" plane gradually becomes the roof of the villa, concealing the living spaces below it. The downward sloping plane provides access to the partially submerged garage as well as to the front door, which is hidden behind the garage. Thus, the architects positioned the house half-above and half-below sidewalk grade, utilizing the roof/ground as its street facing elevation, blurring the distinction between lot and building. The view from this position strikes us first and foremost as a void or negation—something not simply hidden, but missing. There is no object where there "should" be one as the architecture is absorbed into topographical embankments. In this collapse of figure/ground, Villa Wilbrink exemplifies the field condition of thickened surfaces which unify form, structure and site into a single system, thereby liberating the distinction between building and landscape from its material associations.[12]

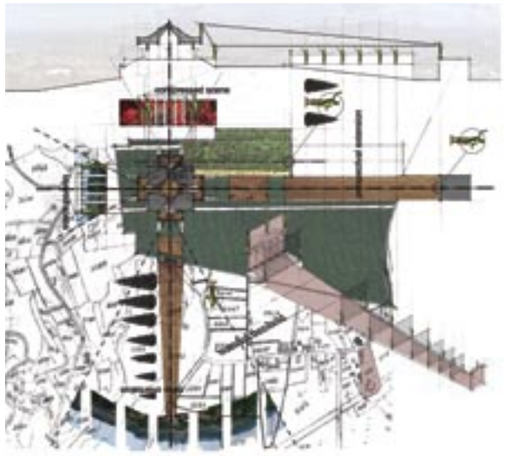
UN Studio inverts or distorts many of the elements used in modern architecture to relate building and landscape, all of which can be interpreted as the architects' desire to subvert, rather than emphasize, prospect. Here, the idealized ground plane that Le Corbusier postulated in his "five points of a new architecture" no longer flows freely under the elevated inhabitants but instead flows over them. Rather than being liberated from the ground, the house is subsumed by it. The ramp does not continue the circulation of the inhabitants upward and outward but instead directs them into the ground, thwarting any prospect. Expansive glass living room walls "face" the street yet, due to their position, these large windows "frame" the garage. This prevents any onlookers from violating the privacy of the domestic interior. A corner window placed diagonally opposite the glass doors lies at floor level. Rather than directing the eye to a distant scene, this position refers the viewer to the immediate landscape, the all-consuming rocky ground. The horizontal strip window in the kitchen is canted, referring to the landscape overhead rather than to an idealized panoramic view. In all cases, the effect is not to project the view outside but to suggest retreat into the confines of this small suburban site. An interesting shift occurs in the rear of the site. In contrast to Schindler, who combined inert and vegetal material to create a landscape in which to live, UN Studio maintains these landscape "types" as separate systems, self-consciously held apart. They differentiate the criteria by which the living landscape operates by placing a geometric grid of trees opposite the living room, independent of the dominant lines of the embankments. These living elements stand first and foremost as symbols, remnants of the pastoral model, when situated in counterpoint to the ruptured ground of the house.

Whereas Schindler based his house on a camper's shelter, UN Studio based Villa Wilbrink on a military bunker.[13] Both models offer protection against external forces. In camping, the retreat from culture is assumed to provide rejuvenation due to a belief in the

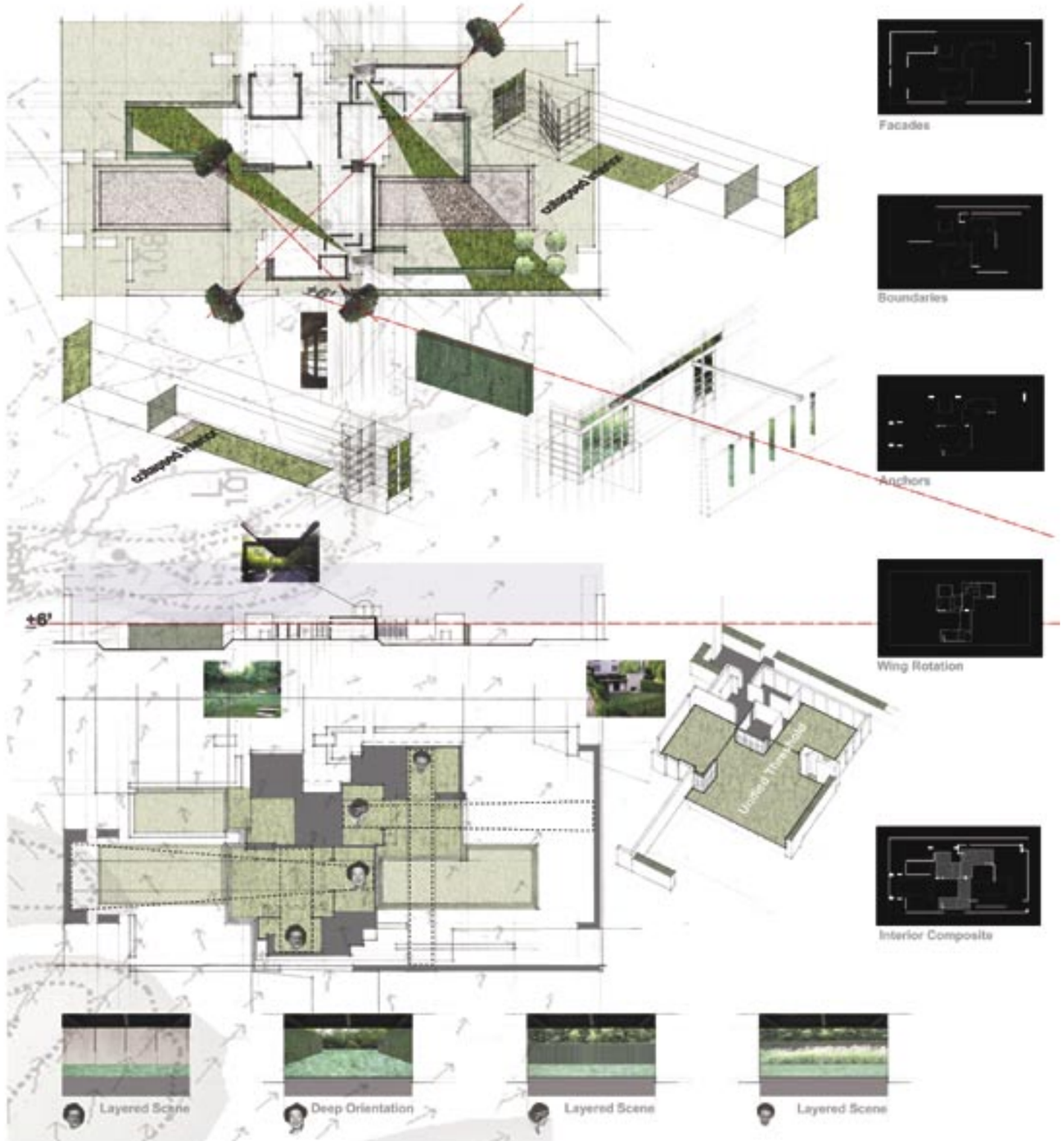
regenerative capacities of nature. Schindler created an oasis in what was, at the time, still a sparsely populated area. In its present context, it seems prescient that he chose to do so. At Wilbrink, in a context of suburban single-family houses, there seems to be no comfort taken in the possibility of extending the inside out or of an ameliorative landscape. Steinberg's shift from nature to culture is complete. Confined in a bunker, the only alternative is to wait until it is safe to come out.

Notes

1. Anita Berritzbeitia and Linda Pollack. *Inside/Outside: Between Architecture and Landscape* (Gloucester, MA: Rockport Publishers, Inc., 1999), p.12.
2. Georges Teyssot. "Threshold and Folds: Issues of Interiority", *Casabella*, 681, (2000): 96.
3. The six case study drawings were done in collaboration with Keith VanDerSys, four of which are shown here.
4. For example, both Eero Saarinen and Dan Kiley in the Miller House and Garden (1955, Columbus, Indiana) and Andrea Palladio in the Villa Rotonda (c. 1550, Vicenza, Italy) use a rectilinear, centrally organized structure situated on a plinth to frame four different landscape constructions. In Villa Rotonda the loggia frames the views, whereas in the Miller House, the framing function is transferred to the vegetation. While the house's relationship to the garden is similar to Villa Rotonda, the large windows, axial shifts and sectional extension of the flat roof/ground places Miller squarely within modernist domestic space. The reference to Palladio is quite different in the picturesque gardens of Castle Howard (1699-1744, John Vanbrugh and Charles Howard, Yorkshire, England). Here The Temple of the Four Winds, a miniaturized reconstruction of Villa Rotonda, is one of many iconographic structures scattered in the landscape with no direct path between them. The line of sight between monuments can never be directly approached, thereby severing the alignment of eye and body.
5. "If classical composition sought to maintain clear relations of figure and ground, which modern composition perturbed by the introduction of a complicated play of figure against figure, with digital technologies we now have to come to terms with the implications of field-to-field relation." Stan Allen. *Points + Lines: Diagrams and Projects for the City* (New York, NY: Princeton Architectural Press, 1999), p. 92.
6. The flatbed refers to the printing press. Both Jim Corner and Mark Linder refer to Steinberg's flatbed picture plane. See Jim Corner. "Representation and Landscape: Drawing and Making in the Landscape Medium," *Word & Image: A Journal of Verbal/Visual Enquiry*, 8 (1985): p.255; Mark Linder. "Sitely Windows: Robert Smithson's Architectural Criticism," *Assemblage*, 39 (1999): 13, 15.
7. Leo Steinberg. "Other Criteria", *Other Criteria* (London: Oxford University Press, 1972), pp. 84, 91.
8. Teyssot, (2000), p. 96.
9. Beatriz Colomina. *Privacy and Publicity: Modern Architecture and Mass Media* (Cambridge, MA: MIT Press, 1994), p..334. Colomina is referring specifically to Le Corbusier's comment in Vers Une Architecture (1924).
10. Krauss defined architecture and landscape as the simple opposition of the built/not-built and the cultural/natural. Rosalind Krauss. "Sculpture in the Expanded Field", *The Originality of the Avant-garde and Other Modernist Myths* (Cambridge, MA: MIT Press, 1985), p. 183.
11. Kathryn Smith. *Schindler House* (New York: Harry N. Abrams, Inc., 2001), note 20, p. 42.
12. Allen, (1999).
13. "Each room in the house represents a variation on one structural and architectural theme. This theme fulfills the basic requirements for a camper's shelter: a protected back, and open front, a fireplace, and roof. Each room has a concrete wall for back and a garden front with a large opening fitted with sliding doors." R.M. Schindler, "A Cooperative Dwelling," *T-Square* (February 1932): 20-21, reprinted in Smith (2001), p. 81.



Villa Rotunda



softscape
softscape
threshold
threshold
hardscape
interior
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interior
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Deep Orientation

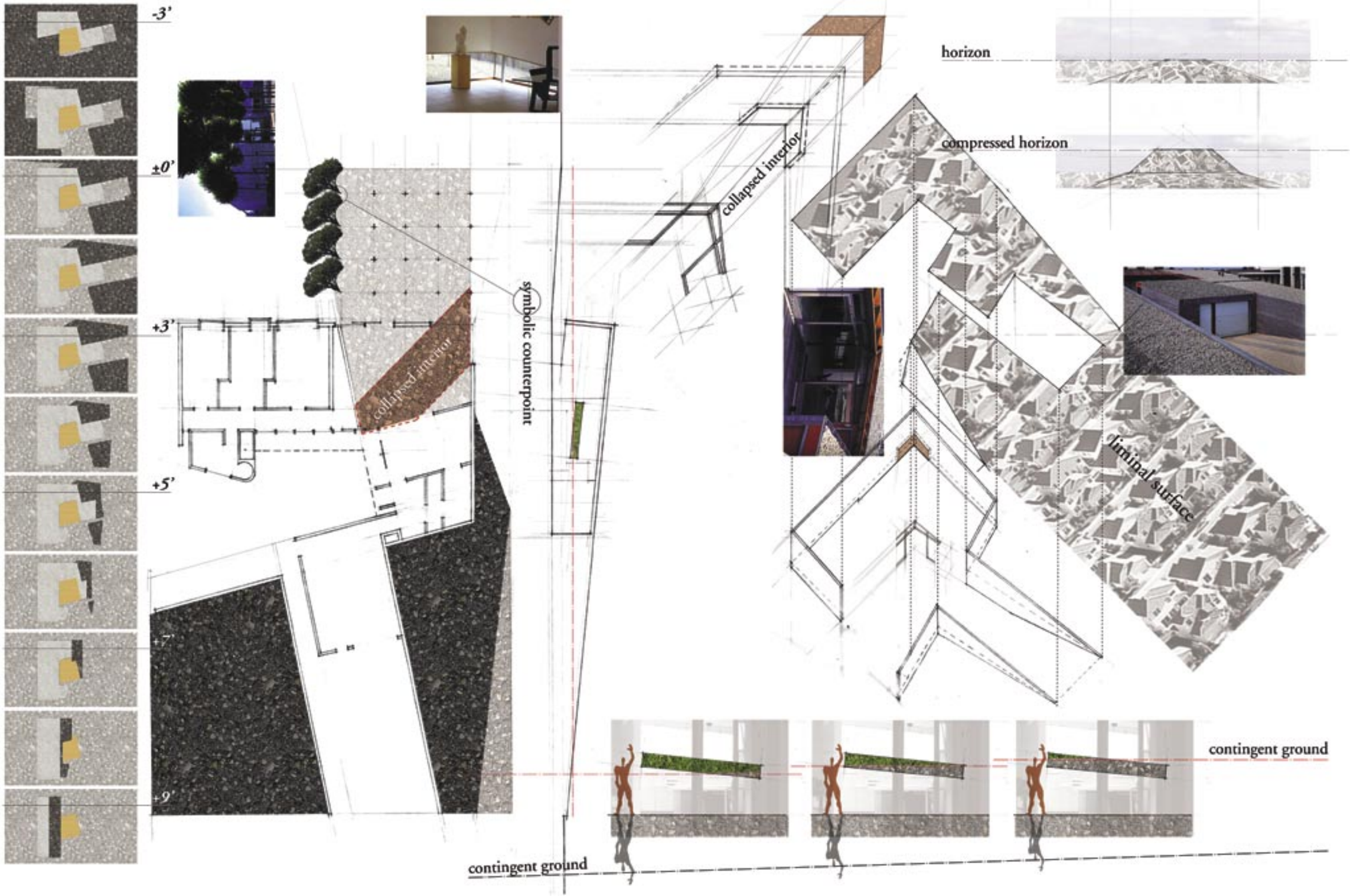
Perspectival Extension

layered Scene

Facades

Rooms

Rooms


-3'
±0'
+3'
+5'
+7'
+9'
collapsed interior
symbolic counterpoint
collapsed interior
horizon
compressed horizon
liminal surface
contingent ground
contingent ground

HABITATION VIS-À-VIS TECHNOLOGY

Oliver Neumann

The centrality of technological thought to architectural imagination and production has been the focus of many investigations into the relationship of technology and the experience of the built environment. The increasing integration of mass-customization processes in recent architectural discourse and production serves as a reminder of the relevance of technology's influence on the conception and production of architecture and space. Inherent to these mass-customization processes is the auspicious potential to produce affordable building components in seemingly endless variety. The apparent possibility to in turn assemble the prefabricated elements to produce complex spatial environments, however, has in part obliterated architecture's material dimension and its dependency on specific conditions of production and assembly. The concurrent interest in complex systems, the questioning of ordering hierarchies and the focus on emergent properties—consistent with a general understanding of the world as a complex environment—have furthermore sidestepped architecture's potential to condition social interaction and to comment on and direct communal activities and exchange. While the potential of material aspects and of issues of organization that reference the non-hierarchical organization of network models are explored, projects sensitive to the intricacies of existing complex conditions are not, simply by nature of their conceptual approach, guarantors for the appreciation of the social dimensions of the created environments.

As much as the merging of design and production using mass customization technologies can promote an immediate assessment of one's own design process and practice, the creation of advanced formal and material solutions through the integration of sophisticated technology is not by itself conducive to a clear understanding of the performance qualities of the generated forms and applied materials. To move beyond the mere exploration of technological possibilities the design process needs to include attempts to define a social intention related to the generated space.

A focus on the reevaluation of notions of public space and community in an environment influenced by technology reveals architecture's potential to condition social interaction and insists on the integration of the constructed subject into the conception and generation of space. This attempt to integrate a tangible social dimension into the discussion on technology is not intended to downplay the importance of recent technological developments and the many related possibilities for the theorizing and production of architecture.

Rather than aestheticizing notions of mass customization, however, the focus here is to reconcile advanced technologies of mass production with an architectural approach that addresses social relationships, engagement and spatial appropriation both conceptually and in the use of contemporary building technologies and ways of making. Implicit to this approach is an analysis of the potential of CNC-milling, vacuum forming and equally sophisticated production methods in the specific context of their application from conceptual design to practical application in built projects.

A relevant categorization of architectural elements within a technological environment that relates formal and spatial features to a social context is Albert Borgmann's definition of "focal things." His "device paradigm" as a formative principle of a technological society based on efficiency differentiates between commodities and things. While focal things are designated as objects inseparably tied to a social environment, commodities or goods are separated off from contexts and means of delivery by modern technology and have no social implications beyond their immediate function.[1]

The significance of "the thing" in this understanding can not be separated from its context, from its world, and from our engagement with it. Referring to a stove or fireplace in a traditional house, Borgmann illustrates the relationship between the thing and its environment. The stove that was often placed in a central position in the house for heating purposes was also central to the social life. Beyond its function as a meeting place, heating the stove also required a number of activities that structured the social life in the house both on a daily basis and over the course of the year. In addition the inherent characteristics of the stove or fireplace as a heating source had spatial implications that led to a seasonally adjusted use of the house.

While Borgmann's clear distinction between "things" and commodities illustrates his essentialist view of technology, his analysis of the environment influenced by technology points in a more general reading to a relationship between specific functions, form and shape with the potential to constitute a social environment through spatial interventions.

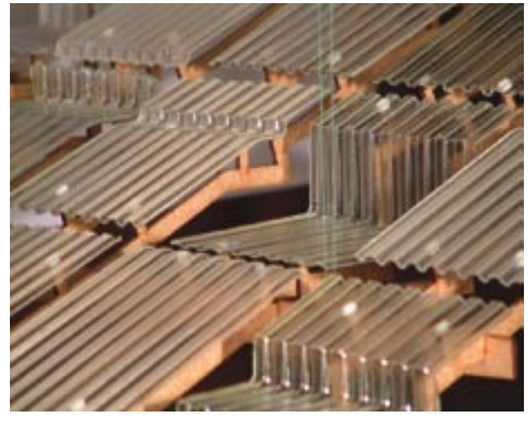
Likewise, the assumption that spatial concepts in architecture are inextricably linked to the working methods of fabrication does not only assume a knowledge of the generalized potential of the available means of fabrication but also requires an understanding of the specific context of the technology's application.

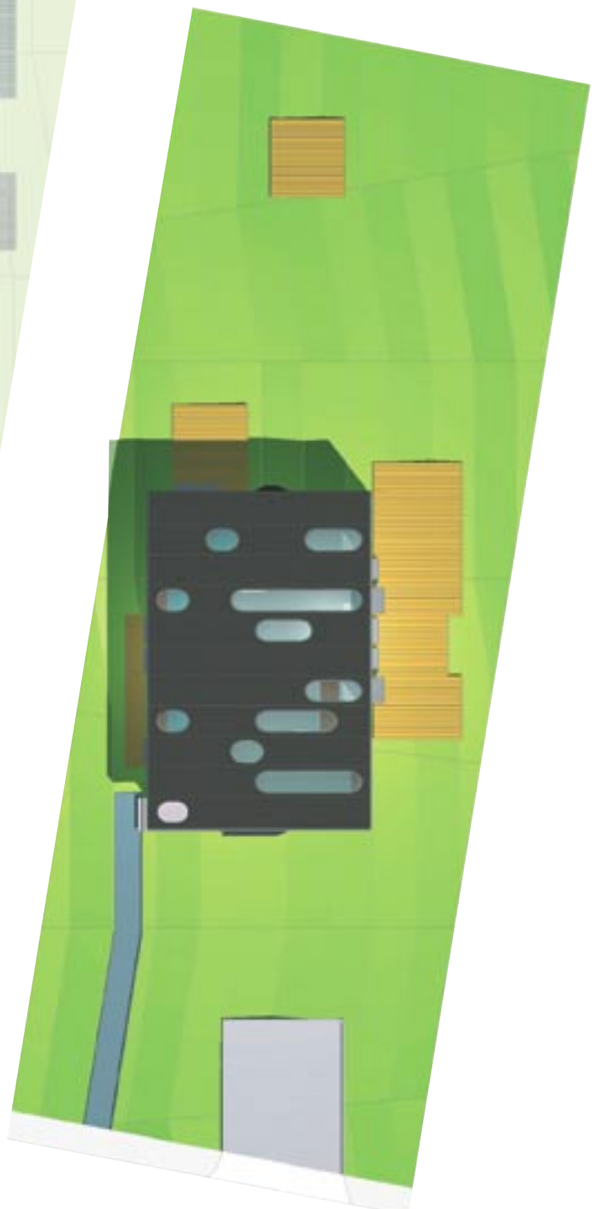
The following projects explore possibilities for the integration of spatial and social interventions as an approach to architecture and space that takes advantage of contemporary design concepts and techniques of making in their specific context of production and installation. With this, the conceptual, organizational, formal and aesthetic potential of ideas of complexity and mass fabrication in architecture is related to a tangible social dimension.

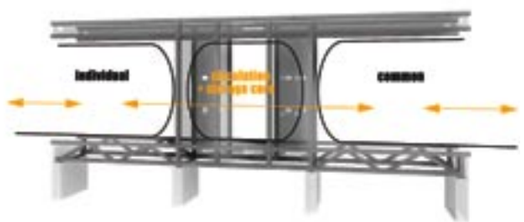
CORRUGATED FIELDS

This project investigates fabrication technologies for design of a modular surface study. CNC-milling, laser cutting and vacuum forming are used to produce a modular surface and its substructure with a focus on exploring the potential and limitations of the available technologies in the specific context of their application. The coordination of the fabrication technologies in the design and production process as well as the material characteristics of the produced modular panels are representative of the specific conditions at the university.

Corrugated field originates from the scale of the body and body-related shapes. The initial body imprints are abstracted to create simple spaces that promote programmatic engagement. These interrelated folds, depressions and grooves as part of the generated modular system that allows for a large variety of configurations form paths, steps and sitting areas then suggest numerous ways of appropriation.







LOW-INCOME HOUSE

Ideas of modularity and mass-fabrication are explored in this competition design for a low-income house type that utilizes affordable standard building materials. Prefabricated house components can be assembled to create a variety of configurations for single-family homes at any given site.

The project attempts to reconcile notions of the flexible and fluctuating nature of human networking and interaction in the context of a house design with the application of a prefabricated building system. The design reevaluates notions of privacy, common activities and social interaction with a particular focus on architecture's potential to condition social settings and to activate and mediate the body in a domestic context. A prefabricated building frame, façade and wall-storage elements are used to create and condition settings of bodily and social engagement at various scales of the house. Affordable, easy to install and environmentally friendly building materials are integrated into a design that addresses social engagement and spatial appropriation in the context of a one-family house and its immediate surroundings. Following this approach, the design explores the possibility to incorporate prefabricated building elements into a design that allows for changing relationship to its context and promotes flexible user configurations and social settings on the interior.

The flexible assembly of prefabricated building components allows the design to meet specific needs of the future occupants and to adapt to varying site conditions. A prefabricated structural wood truss system with integrated prefabricated façade elements and storage components defines the spatial and social framework for the building's interior configuration and establishes its relationship to its immediate context.

The structural, easy to assemble wood and plywood trusses placed on strip foundations at forty-eight inches on center define the basic house section. Together with forty-eight inches wide insulated floor and ceiling panels the truss system forms the spatial envelope of the house. In addition, the structural frame carries the house's infrastructure. Installed in the central floor section of the truss system, ductwork, conduit and pipes can be accessed from the hallway area. The number of trusses and length of the strip foundations is adjusted according to the 3- or 4-bedroom layout of the house. Depending on availability of materials and local craftsmanship the house can be clad in different materials.

Four types of prefabricated façade panels form the building enclosure and serve as programmatic focus points in individual spaces, common zones and on the exterior of the house. The placement of the façade panels with openings, integrated work surfaces on the interior and exterior, shelve units and steps that function as seats is specific to the programmatic needs of the spaces in the house. By activating the physical boundaries of the house, the façade panels extend the activities beyond the enclosed area of the house onto wooden decks on the exterior and serve as points of origin for the expansion of the family life into the site.

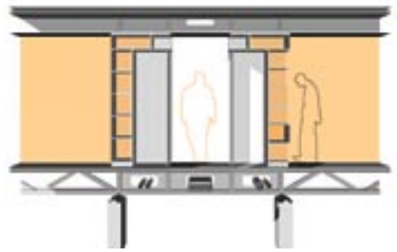
Within the adaptable building system of the house, the shown plan layout gives preference to open flexible spaces of the common areas

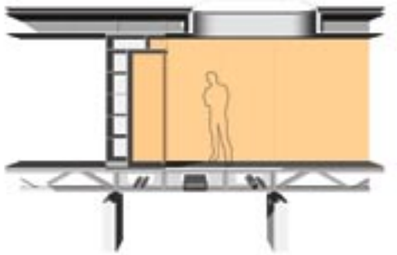
while the bedroom and study configuration provides defined areas of privacy and seclusion. Skylights integrated into the insulated ceiling and roof panels provide additional lighting and accentuate the blurring of social and functional zones of the house across the central storage and circulation area. Depending on the changing need for storage and open shelving, common areas and bedrooms are extended into the core and circulation zone of the house. The prefabricated storage units are equipped with doors according to their specific function in individual rooms, the hallway and common areas.

Using a limited number of storage door and storage compartment sizes, the prefabricated core storage units create a variety of configurations to accommodate the changing storage and display requirements throughout the house.

Notes

1. Albert Borgmann, 'The Device Paradigm' in Technology and the Character of Contemporary Life, (University of Chicago Press, 1984), p.40-47.





FALL 2002

Visiting Faculty:
Tod Williams, New York
Billie Tsien, New York
Mark Wamble, Rice University
Dawn Finley, Rice University
John Habraken, Apeldoorn, Netherlands
Kent Kleinman, SUNY Buffalo

Visiting Critics:
Joe Mepplelink
Mike McKay
Elizabeth Swanson
Kenneth Hayes
Robert Adams
Russell Thomsen
Charles Waldheim

Lectures:
Manuel Castells, UC Berkeley
John Habraken, Apeldoorn, Netherlands
Douglas Kelbaugh, Taubman College
Deborah Berke, New York City
James van Sweden, Washington, D.C.
Tod Williams & Billie Tsien, New York City
Helmut Jahn, Chicago
Eyal Weizman, Tel Aviv
Dawn Finley & Mark Wamble, Rice University

Contested Urbanism Lectures:
Roger Sherman, SCI-Arc
Michael Speaks, SCI-Arc
Dave Hickey, Las Vegas

WINTER 2003

Visiting Faculty:
Glenn Murcutt, Sydney
Brian MacKay-Lyons, Nova Scotia
J. Max Bond, New York
Alexander Kitchin, University of Virginia
Evelyn Tickle, University of Virginia

Visiting Critics:
Michael Cadwell
Julia Czerniak
Kathryn Dean
Erik Hemingway
Jerry Herron
Julie Kim
Gordon Kipping
Alexander Kitchin
Keith Krumweide
Hector Lasala
Michael McInturf
Robert Mangurian
Daniel Pitera
Mitchell Squire
Evelyn Tickle

Lectures:
Dell Upton, University of Virginia
Anthony Vidler, Cooper Union
Brian MacKay-Lyons, Nova Scotia
Aaron Betsky, Rotterdam
Max Bond, New York City
Lindy Roy, New York City
Foreign Office Architects, Farshid Moussavi,
Alejandro Zaera Polo, London
Glenn Murcutt, Sydney
Eric Owen Moss, SCI-Arc
Tyree Guyton, Detroit

Instructions for Construction Lectures:
Marco Steinberg, Harvard
Joep van Lieshout, Rotterdam
Jim Glymph, Frank O. Gehry & Associates

CONTRIBUTORS

SANDY ATTIA is a Lecturer of Architecture at the University of Michigan and was the 2002 Muschenheim Fellow. She is a graduate of the University of Virginia and Harvard University. A founding member of MODUS in Northern Italy, she has worked on a number of projects in the U.S., Egypt, and Italy with her partner Matteo Scagnol.

CAROLINE CONSTANT is Professor of Architecture at the University of Michigan. A graduate of Princeton University, she is a fellow of the American Academy in Rome, a registered architect and author of The *Palladio Guide* (1985), *The Woodland Cemetery: Toward a Spiritual Landscape* (1994), and *Eileen Gray* (2000).

KARL DAUBMANN is an Assistant Professor of Practice at the University of Michigan. A graduate of Roger Williams University and the Massachusetts Institute of Technology, he was the 1999 Oberdick Fellow and is a principal of PLY Architecture in Ann Arbor, Michigan.

JIM GLYMPH is widely recognized as a leader in the use of digital technology in architecture and partner in the architecture firm of Frank O. Gehry and Associates in Los Angeles. He has guided the integration of computer-aided design technology into the firm's design process, working extensively on the technical development of complex architecture projects including the Guggenheim Museum in Bilbao, Spain, the Samsung Museum of Modern Art in Seoul, Korea, the Experience Music project in Seattle, Washington, and the Condé Nast cafeteria in New York City.

MICK KENNEDY divides his time between the Taubman College of Architecture and Urban Planning and a fledgling practice in Texas. His initial studies were in small engine repair, for which he still holds a passion. Following work as an animated toymaker in New York, he received his architectural training at the University of Texas at Austin. In addition to his own practice, he has worked in the offices of Chris MacDonald, Larry Speck, and Juan Cotera. He continues to value good footwear.

CHRIS KNAPP teaches undergraduate and graduate level design, construction, and drawing at the Taubman College of Architecture and Urban Planning, is a licensed residential builder, and serves as a Planning Commissioner for the City of Ypsilanti. Knapp received a Bachelor of Science in architecture from the University of Michigan and his Master of Architecture degree at Princeton University. Knapp's studio teaching and design/build practice explore issues related to the formation of conventions, habits, and meaning produced by architectural space, building materials, appliances, and furnishings. Knapp has also utilized his residential work to research a variety construction technologies, including structural insulated panels and timber, steel, and platform framing.

JOEP VAN LIESHOUT is the founder of Atelier Van Lieshout (AVL) is a multidisciplinary company that operates internationally in the field of contemporary art, design, and architecture. The name Atelier Van Lieshout emphasises the fact that the works of art do not stem solely from the creative brain of Joep van Lieshout but are produced by a creative team. The works of art are practical, uncomplicated, and substantial. The work varies from sculptures and furniture, bathrooms and mobile home units to complete architectural refurbishments. One of the many applications and techniques used by AVL are the large polyester constructions in striking, bright colours. These polyester constructions, of which the large mobile home units are the best known, form the AVL trademark. For a number of years now the focus has no longer been on standardised, made-to-order furniture but has shifted to works of art that can be used for a self-sufficient and independent lifestyle. In addition to this development and the production of applied art, the Atelier also realises many autonomous art projects. In the year 2001 Atelier Van Lieshout realised AVL-Ville, a "free state" in the port of Rotterdam. This large-scale project forms a high point in the work of AVL; it is a culmination of all the works produced by AVL up to that time. After a successful and tumultuous year, the AVL-Ville project was completed. AVL has recently located its first AVL-Ville export product in Park Middelheim in Antwerp:
the AVL Franchise Unit.

KAREN M'CLOSKEY received her Bachelor of Architecture with distinction from the Southern California Institute of Architecture in 1994 and her Master in Landscape Architecture with distinction from Harvard University in 1999. She was the 2002 Sanders Fellow and is currently an Assistant Professor of Architecture at Taubman College of Architecture and Urban Planning.

OLIVER NEUMANN received a diploma from the Technical University Berlin in 1995 and a MS in Advanced Architectural Design from Columbia University in 1996. From 1996-2001 he worked in several architecture offices in New York and Berlin. As a partner in F.N: Fujita.Neumann, he has placed or received honorable mentions in several international design competitions. Before receiving the 2002 Sanders Fellowship at the Taubman College of Architecture and Urban Planning he taught design and theory at the Technical University Berlin, at the HTWK in Leipzig, Germany, and at the University of British Columbia in Vancouver. He is currently an Assistant Professor at the University of British Columbia in Vancouver.

MICHAEL SPEAKS completed a Ph.D. in Literature at Duke University in 1993. He is the founding editor of *Polygraph*, and has been the Senior Editor at *ANY magazine* in New York, where he was also the Series Editor for "Writing Architecture," published by the MIT Press. He has published and lectured internationally on art, architecture, urban design, and scenario planning. Speaks is a Contributing Editor for *Architectural Record* and serves on the editorial advisory board of *A+U* (Japan) and *Archis* (The Netherlands) as well as the advisory board for the Storefront for Art and Architecture in New York. Former Director of the Graduate Program and currently Director of the Metropolitan Research and Design Post-Graduate Degree at the Southern California Institute of Architecture in Los Angeles, Speaks has also taught in the graphic design department at the Yale School of Art, and in the architecture departments at Harvard University, Columbia University, Parsons School of Design, and The Berlage Institute in Rotterdam. He has also been a research fellow on the architecture faculty at the TU-Delft in the Netherlands and currently heads the Los Angeles-based urban research group, BIG SOFT ORANGE.

MARCO STEINBERG is an Associate Professor of Architecture at the Harvard Design School. Steinberg's research focuses on materials and fabrication technologies within the industrial design/architecture disciplinary boundaries. He has received numerous grants to fund his research and currently heads the Product Design in Architecture concentration within the school's Master of Design Studies program. Featured in *40 under 40 Finland* his publications include *Prototype for a Plywood Wheelchair*, *Material Legacies: Bamboo* and *Immaterial/Ultramaterial* (ed T. Mori) and is co-author of a forthcoming book tentatively titled *Digital Design and Manufacturing in Architecture* (with Schodek, Bechthold, Griggs and Kao: John Wiley, 2004). He is principal—along with his wife Riikka, an interior architect—of Helsinki based NB architecture, a design practice providing architecture and product-oriented research and design services.

CHRISTIAN UNVERZAGT holds an undergraduate degree in Architecture from the University of Michigan, a Master of Architecture with distinction from the Southern California Institute of Architecture (SCI-Arc) in Los Angeles and studied in Diploma Unit 12 at the Bartlett in London. Founding designer of the *Michigan Architecture Papers*, he has received several awards for his design work. He is currently a Lecturer in Architecture at the Taubman College and a principal in the Detroit-based M1—a multi-disciplinary practice engaged in the material production of objects, artifacts, identities and spaces.

GREG VENDENA was born in Denver, has lived in Phoenix and San Francisco, and now lives in Detroit. He was educated at Arizona State University (B.S. Design), California College of Arts and Crafts (B.F.A. sculpture/photo), and Cranbrook Academy of Art (M. Arch). He has held teaching appointments at University of Detroit, Mercy, Lawrence Technological University, and University of Michigan in addition to practicing in Detroit. He is co-founder of co-lab*, an interdisciplinary creative collaborative practice dedicated to works that respect humanity and the environment. Current projects include a community art center for the Heidelberg Project and an emergency shelter for teenage mothers, both in Detroit. co-lab* was recently selected for the "National Design Triennial" which is currently exhibited at the Cooper-Hewitt National Design Musuem and for the "Design 100" issue of *Metropolitan Home Magazine* (May/June 2003).

EYAL WEIZMAN is an architect based in Tel Aviv and London. After graduating from the Architectural Association in London, he worked with Zvi Hecker in Berlin. Weizman is now in private practice in partnership with Rafi Segal. Amongst their projects is the rebuilding of the Ashdod Museum of Art, a stage set for Itim Theatre Company, "A Civilian Occupation," shown at the Storefront Gallery in New York, and the exhibition *Territories* at the Kunst-Werke (KW) in Berlin, forthcoming as a book with Babel and Verso Press. Weizman and Segal were amongst the finalist for the Tel Aviv Museum competition. Weizman has taught architecture at the Bartlett School of Architecture in London, the University of Applied Arts in Vienna, and the Technion in Haifa. He has conducted research and a map-making project for the human rights organization B'tselem on violations of human rights by architecture and planning in the West Bank. He is developing *The Politics of Verticality* project into a Ph.D. thesis, a book, and a film. His previous books are *Yellow Rhythms* (010Publishers Rotterdam) and *Random Walk* (AASF London).

GRETCHEN WILKINS is an Assistant Professor of Architecture at the University of Michigan. She holds a Master of Architecture from the University of Michigan and is a partner of SOMA Design in Ann Arbor, Michigan.

JASON YOUNG is Associate Professor of Architecture at the University of Michigan and is founding principal of WETSU, a construction studio in Ann Arbor, Michigan. Young is a contributing co-editor of *Stalking Detroit* (Barcelona: ACTAR, 2001) and a co-author (with Jerry Herron) of *Fieldtrips*, a forthcoming collection of essays exploring the cultural conditions within the realm of big-box, generic space.

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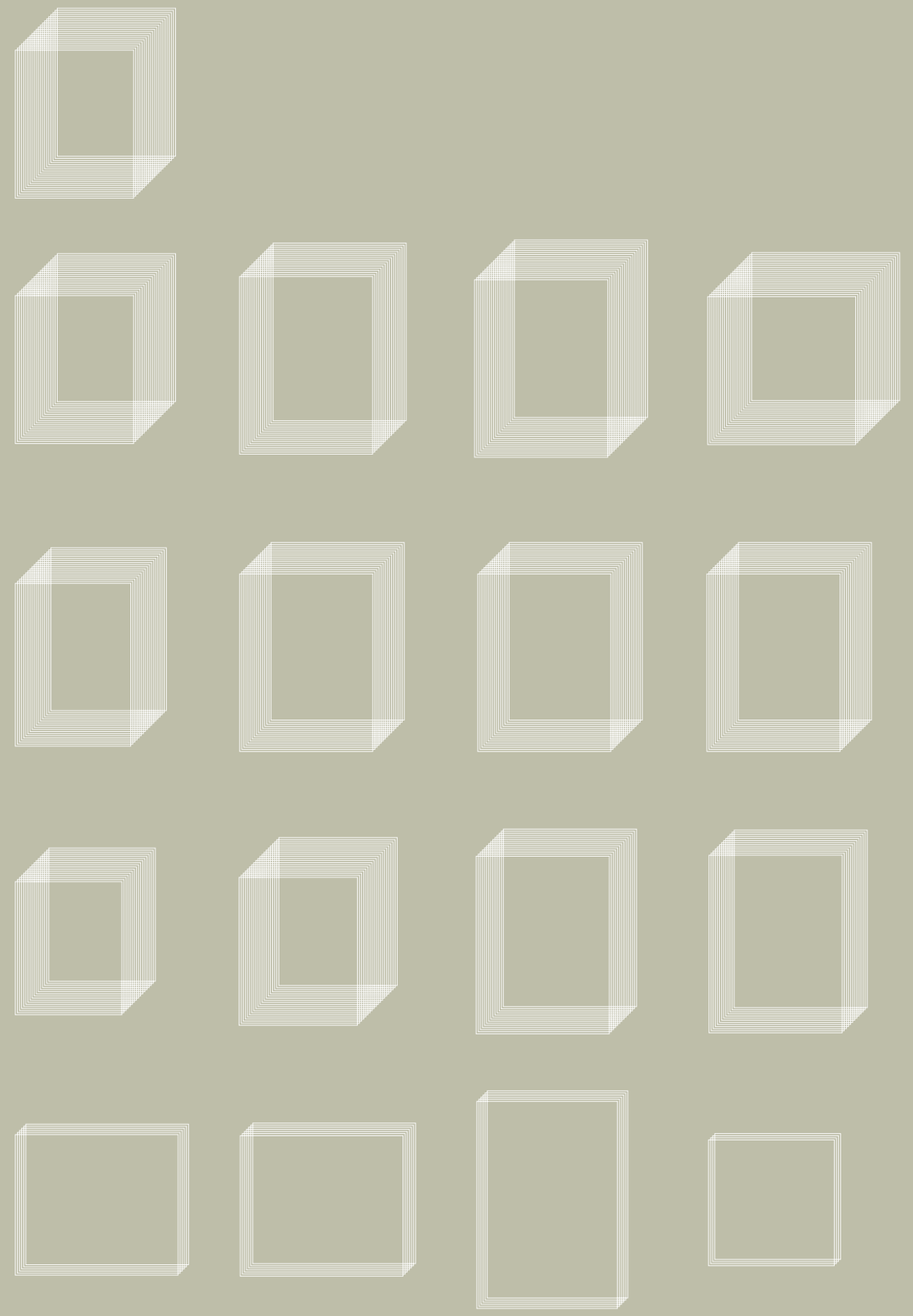

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