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Over the last few decades, a rich and increasingly diverse practice has emerged in the art world that invites the public to touch, enter, and experience the work, whether in a gallery, on city streets, or in the landscape. Influenced by early site-specific sculptures, happenings, and conceptual and performance art, these temporary works have come to be known as installations—art that aspires to being architecture. For many architects the installation is not the end product in itself or mere exercises in the absence of “real” building, but a preliminary step in an ongoing process to develop the discipline of architecture and a way to engage issues critical to architecture.

Installations by Architects: Experiments in Building and Design, the first survey of installations created by architects, looks worldwide at fifty of the most significant installations from the 1980s to today and demonstrates their importance as professional and pedagogical tools of architecture. It asks why this mode of expression has developed, explores what it is about, and what it means for architecture as a discipline. The discussions are supplemented with over two hundred beautiful illustrations and by the project architect’s own words, including quotes from interviews with the distinguished architects whose works are presented. As ephemeral constructions, installations offer precious freedom to experiment and expand the practice of architecture. This book, likewise, shows how installations allow architects to experiment, criticize, explore, and dream about changes in the built environment.

Architects include: Anderson Anderson with Cameron Schoepp | Arqhé Collective and Blair Taylor | Atelier in situ | Chris Bardt | Craig Barton, Nathaniel Quincy Belcher, Lisa Henry Benham, David Brown, Yolande Daniels, Mario Gooden, Walter Hood, Scott Ruff, William Daryl Williams, and Mabel Wilson | Philip Beesley | Frances Bronet | Marco Casagrande and Sami Rintala | James Cathcart, Frank Fantauzzi, and Terence Van Elslander | Detroit Collaborative Design Center | Diller + Scofidio | Evan Douglis | Shin Egashira | Ronit Eisenbach | Thom Faulders | fieldoffice | Filum Ltd. | Mark Goulthorpe | Haque Design + Research | John Hejduk and the Architectural Association community | Hodgetts + Fung | Dan Hoffman | Kennedy & Violich Architects with Linda Pollack and Matthew Vanderberg | Richard Kroeker | Kuth/Ranieri Architects | LAb[au] | Marianne Lund | Kourosh Mahvash | Leonardo Mosso | muf architecture/art | Taeg Nishimoto | Périphériques Architectes | Pierre Thibault Architecte | Mette Ramsgard Thomsen | Mark Robbins | Tanja Jordan Architects and TK Architecture | Arturo Torres and Jorge Christie | Anna von Gwinner | Lois Weintal | Mark West | Alan Wexler

Installations by Architects

Experiments in Building and Design

**Sarah Bonnemaison and
Ronit Eisenbach**

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Introduction

Over the last few decades a rich and increasingly diverse practice has emerged in the art world that invites the public to touch, enter, and experience the work, whether it is in a gallery, on city streets, or in the landscape. Influenced by early site-specific sculptures, happenings, and conceptual and performance art, these temporary works have become known as *installations*.

An installation is a three-dimensional work of art that is site-specific. In this sense it is very much art that aspires to be architecture. So what happens if an architect creates an installation? How is the work different from one made by an artist? The answer lies not in the work itself, perhaps, but in what it offers to the field of architecture.

For architects, installations are a way to explore architectural ideas without the limitations imposed by clients. An installation differs from a conventional architectural design in several ways: it is temporary, that is, its demise is planned from the outset; its function turns away from utility in favor of criticism and reflection; and it foregrounds the content. Architect and critic Mark Robbins puts it succinctly: "In some way, an installation is a distillation of the experiences of architecture."¹

Like paper projects and competitions, installations allow architects to comment on and critique the status quo, and to imagine new forms, methods, and ideas in architecture. And as ephemeral constructions, they also offer precious freedom to experiment. Allan Wexler, an architect and an artist, says that installations allowed him to be experimental: "Things could happen quite quickly, and I could physically build them myself, they were inexpensive, they were small, I could then take a risk because it wasn't a huge endeavor, it wasn't a high cost. These could be self-motivated, I didn't need the client in order to get me started on a project. They were

very nice, convenient devices to explore architecture in a reduced fashion."²

Constructed in a wide range of locations, installations reach diverse audiences and often generate conversations about the built environment. In the words of art historian Julie Reiss, "There is always a reciprocal relationship of some kind between the viewer and the work, the work and the space, and the space and the viewer."³ The viewer's presence is an integral part of the installation, and Reiss believes it may be the most important aspect of this kind of work.

Installations have become a popular vehicle for teaching and research in university architecture programs. Early architectural research laboratories, such as Frei Otto's Institute for Lightweight Structures in Stuttgart and György Kepes's Center for Advanced Visual Studies at MIT, brought technological innovation into design research. Pioneers like Otto Piene, Friedrich St. Florian, and Eda Schaur produced very creative work in these environments. This type of research continues in such diverse institutes as the MIT Media Lab, the Center for Information Technology and Architecture at the Royal Danish Academy in Copenhagen, and Bartlett Faculty of the Built Environment in London.

Design faculty use installations as a mode of exploration in studios, seminars, and classes on construction and theory.⁴ The pioneer in this respect was the Bauhaus, with its strong integration of craft, performing arts, and architecture; and, more recently, Cranbrook Academy of Art under the direction of Dan Hoffman, where architecture was taught through building objects and site-specific works.⁵ Other programs, like those at Dalhousie University, offer courses and special summer programs dedicated to architectural installations.⁶ Such courses ask students to connect ideas to objects, and to use their design and construction skills

top

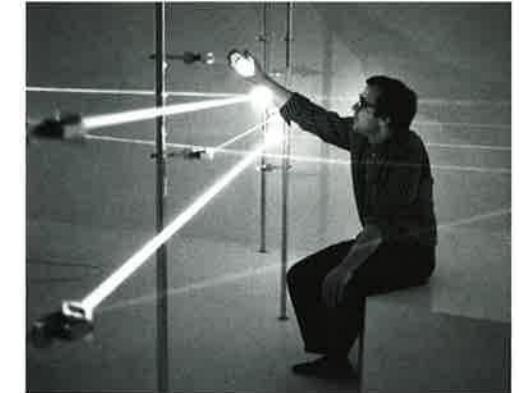
Invited by György Kepes to be a fellow at MIT's Center for Advanced Visual Studies, Friedrich St. Florian experimented with laser beams and mirrors as a way to sketch out volumes with light. Friedrich St. Florian, *Imaginary Space*, Moderna Museet, Stockholm, Sweden, 1969

middle

Students in a graduate seminar were asked to design an installation with critical content. This group took on the custom of locking up Halifax's Public Gardens at night and in winter. In response, they decided to take the park to the citizens. Asher DeGroot, Dave Gallaugher, Kevin James, Jacob JeBailey, *Walking the Park*, Halifax, Nova Scotia, Canada, 2006

bottom

Ninety-nine garments collected from students were hung around the piers of a bridge under which homeless people lived. Sacrificing privacy for individual warmth, the residents took the clothes piece by piece, gradually altering the character of the installation. Sara McDuffee and Jessica Schulte, *99 Pieces of Clothes*, Detroit, Michigan, USA, 2002



top left

Dunescape was a rolling landscape of cabanas, locker rooms, and wading pools much appreciated by museum visitors in the heat of summer. This installation became an important reference for subsequent designs by the office, SHoP, *Dunescape*, P.S.1 Contemporary Art Center, Queens, New York, USA, 2000



bottom left

The 12,000-square-foot (1,200 square meters) environment, was built of cut cedar ribs positioned at shifting angles to create a continuously undulating surface.

SHoP, *Dunescape*, interior view

bottom right

Working with wood and plaster, Kurt Schwitters gradually transformed his apartment to create an environment that shared affinities with the Dada and Constructivist movements. Today, many historians consider *Merzbau* to be the first installation. Kurt Schwitters, *Merzbau*, Hanover, Germany, 1923–43



to actively and cleverly engage the public in a dialogue about issues they believe are important. Students must also take responsibility for the construction process and learn how to manage their time and materials. Once the piece is built, they experience firsthand the loose fit between intentions and interpretation. Ultimately, they acquire skills in social action and critical thinking, which they carry with them into their professional lives.

Installation design is integral to the practices of an increasing number of architectural firms. Like competition design, it presents an opportunity to explore ideas that can later be incorporated into built work. Christopher Sharples of SHoP, for example, suggests that the research ideas that have carried his office from one set of projects to the next originate in *Dunescape* (2000), an installation created for P.S.1 Contemporary Art Center in New York. The repetitive use of a standardized lumber module—a response to the fast construction process—and detailing strategies inspired by industrial design have both evolved into SHoP's subsequent design projects. For other firms, creating installations is a way to shift the focus from the built work to the design process. The London-based firm muf architecture/art has integrated installations and the events associated with them into its practice as a form of research and as a way to engage the community and provoke conversation with future users—in the designers' words, to "establish ambition."⁷

Historical touchstones

The term *installation* appeared in the fine-arts lexicon relatively recently. In the 1950s, artists such as Allan Kaprow described their room-size multimedia works as *environments*. Phrases such as *project art* and *temporary art* joined the term *environment* in the 1970s.⁸ When this type of work became a major movement in the 1990s, there was a shift in terminology to the word *installation*.⁹

As we look at the history of installation practice, a number of projects stand out because of the powerful and imaginative ways in which they commented on the built environment. Early on, *Merzbau* by artist Kurt Schwitters carries a great artistic force. The project began in 1923, when Schwitters started to transform his apartment in Hanover, Germany, using a combination of collage, interior design, and sculpture built with rectilinear wood and plaster forms. This process went on for twenty years and eventually took over most of his home, filling rooms with grottos, caves, and pillars, and even spilling out onto the balcony. *Merzbau* was a walk-through environment that shared affinities with the playfulness of Dada and with the formal explorations of the Constructivists. Art historian Mark Rosenthal argues that the architectural elements of *Merzbau* illustrated an important aspect of installation art as it would subsequently develop: "[In this] overall environment with little or no escape route, the enchantment draws heavily on theatrical roots, the suspension of disbelief being chief among these. One witnesses an extreme vision of reality or may have the sense of being inside the artist's mind; indeed, a simulacrum of a consciousness is created."¹⁰

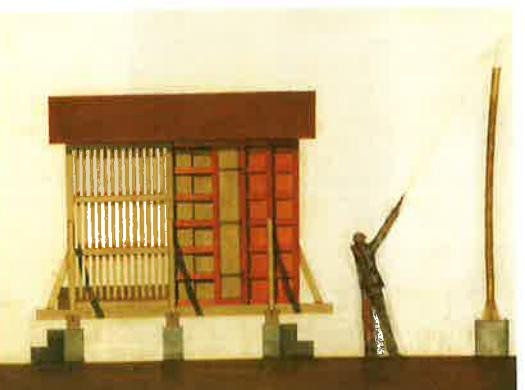
In Austria, architect and artist Walter Pichler created "wearables" that were three-dimensional expressions of individual perception in the age of communication technology. For example, in 1967, he presented the *Tragbares Wohnzimmer* (Wearable Living Room), a symbolically charged apparatus that extended the body by means of a television set. Together with Hans Hollein, he argued that architecture should be freed from the constraints of construction, and sculpture from the limits of abstraction. Pichler, often referred as a "practitioner of personal obsessions" created a commentary that is far from private in its search for archetypes. He built shelters to evoke the eternal, then organized art events to take place in and around them.

top left

Searching for archetypal forms, Walter Pichler drew and built chapel-like structures to shelter his figurative sculptures and create theatrical environments for performance art. Walter Pichler, *Houses for the Steles*, 1987, drawing

top right

An architectural protuberance on a classical facade, *Oasis* was an "emergency exit leading people to another realm." Haus-Rucker-Co, *Oasis No. 7*, Documenta 5, Kassel, Germany, 1972



bottom left

Resurrection City was not a sit-in but a "live-in" that took place by the reflecting pool on the Mall in Washington, D.C. Tunney Lee, John Wiebenson, James Goodell, and Kenneth Jadin, *Resurrection City*, Washington, D.C., USA, 1968

bottom right

A-frame structures built of plywood and cardboard housed the 5,000 people from across the country who came to advocate for policies helping the poor. Lee, Wiebenson, Goodell, and Jadin, *Resurrection City*, detail



The architect Philip Beesley suggests that Pichler's "Saint Martin cluster had a great influence on the development of postmodern architecture, especially in Aldo Rossi's reworking of monumentality into a series of discrete formal elements."¹¹

Also in Austria, the group Haus-Rucker-Co created a number of installations that took a critical look at urban life. The inflatable *Oasis No. 7* was built for the contemporary art show Documenta 5 (1972) in Kassel, Germany. The architects imagined the project as an emergency exit that leads from the museum's interior and becomes a pneumatic sphere emerging from its facade. The interior is a space for relaxing, with two artificial palm trees and a hammock strung between them. Like *Merzbau*, this project engaged intensely with an existing environment, offering a dream world nestled within it.

The use of inflatables was a popular approach for building installations in the 1960s. They were quick to erect, and the curvature of air-supported structures defied the rectilinearity of buttoned-down mainstream Modernism. In his book *The Inflatable Moment*, architectural historian Marc Dessauce traces a direct link between the accessibility of pneumatic structures and the grassroots protests of 1968: "Pneumatics and revolution agree well...they animate and transport us on the promise of an imminent passage into a perfected future."¹²

At the height of that year's student revolts, civil rights rallies, and antiwar protests in Europe and North America, the installation *Resurrection City* raised public awareness of the living conditions of the poor in the United States. Built as part of Martin Luther King's Poor People's Campaign, which was focused on economic justice, the project brought together four architects who provided the framework for a temporary city on the National Mall in Washington, D.C.¹³ They also designed a set of simple components for A-frame buildings to house 2,800 protesters for two months—a large event

that highlighted the political dimension of installations.¹⁴

In the 1970s many artists moved out of art galleries to create a public art movement. "We began thinking," says artist Mary Miss, "about the deconstruction of defined territories and disciplines and trying to put things back together in a different way."¹⁵ She credits feminism with inspiring a shift in values and art practice—such as encouraging collaboration, expanding the art audience to include a wider public, and engaging viewers as active participants. She describes her work as grounded in the context of a place: she constructs situations where the visitor becomes aware of the site's history, its ecology, or aspects of the environment that have previously gone unnoticed.¹⁶ In addition to Miss, artists such as Gordon Matta-Clark, Alice Aycock, and Christo and Jeanne-Claude introduced ways of working that would significantly impact subsequent installations.

The depressed economy of the 1970s forced many young architects to return to other modes of practice, such as paper projects, architectural criticism, and installations. The architectural firm Diller Scofidio + Renfro first achieved renown at this time with installations that explored their interest in technologies of vision, mechanical devices, and norms and aberrations. Only later did they seek larger, more permanent commissions. Ironically, as artists were beginning to leave the gallery, architects began to make their way into museums with drawings, models, and specially commissioned works designed for these institutional contexts. Mainstream art museums established architectural content as part of their programs, and the proliferation of architectural installations began in earnest. This allowed young architects to get their ideas into the public realm and participate in discussions about architecture.

Gradually, museum curators began to commission architectural firms to create installations for themed exhibitions.

top row

Rough wood panels with descending circular cutouts aligned if one stood in front of them (left); detail (right). Mary Miss, *Battery Park City Landfill*, New York, New York, USA, 1973



middle

In *Splitting*, Gordon Matta-Clark cut into a two-story house slated for demolition. As he and his partner painstakingly lowered one side of the house into the basement, a crevasse appeared at the center of the dwelling, letting a sliver of sunlight into the rooms. Gordon Matta-Clark, *Splitting*, New Jersey, USA, 1974



bottom left, right

The scale of the installation required years of planning and a lot of resources, but once installed, *The Gates* attracted thousands of people who saw the park in a different way. Christo and Jeanne-Claude, *The Gates*, New York, New York, USA, 2005, detail



The Wexner Center for the Arts, SF

MOMA, P.S.1, and the Storefront for Art and Architecture in the United States; the Canadian Centre for Architecture and Jardins de Métis in Canada; Centre Pompidou and Archilab Orléans in France—to name but a few—are noteworthy for curating installations by architects.

Our approach to the topic/selecting projects

Since installations explore ideas through the design and construction of temporary environments, it is important to discuss the work presented in this book within a larger intellectual and theoretical context, a multidisciplinary context that includes psychology, philosophy, and geography.

Through an examination of the projects, we identified critical areas of discussion that could be grouped under the themes of tectonics, body, nature, memory, and public space. The decision to focus on these themes was not meant to be exclusionary but to reveal relationships between projects in terms of ideas, research topics, and communication techniques. Most of the projects shown here were developed with little knowledge of the others, but presented together in the book, they reveal shared concerns that are highlighted in our interpretation and commentary on the work.

Each theme is illustrated with eight to ten projects that were chosen based on their

artistic merit and their varied connections with the theories and ideas that inform them. We interviewed the architects to find out more about their projects and the contexts surrounding their work. The resulting book brings together three sets of voices: the discussions of critics and theorists, our own interpretations of the installations, and the viewpoints of the architects who created the work.

The first chapter, "Tectonics," examines a wide range of experiments with new modes of assembly and materials. The second chapter, "Body," explores architects' ongoing engagement with the physical presence of people in the built environment, touching on topics as diverse as phenomenology and the gendering of space. The third chapter, "Nature," addresses the creative tensions between nature and culture. The fourth chapter, "Memory," includes installations that investigate the relationship between place and memory as society evolves. The fifth chapter, "Public Space," covers installations that are built on the street and explores architects' representations of, and public participation in, the public realm.

The fifty projects included in this book show a wide range of creative investigations. There is no doubt that installations have become a major mode of expression for the practice of architecture. We hope this book contributes to the role of installations in sharpening our critical understanding of the built environment.

1.3 TECTONICS AND THE IMMATERIAL

It may seem a contradiction to link tectonics—which is about making—to the notion of immateriality. Yet architects have long explored the art of construction in order to reveal and celebrate immaterial forces: such as with the extreme dematerialization of masonry of Sainte-Chapelle in Paris that celebrates light. Architecture, as Le Corbusier reminds us, is “the masterly, correct, and magnificent play of masses brought together in light. Our eyes are made to see forms in light; light and shade reveal these forms.”²⁴ The next three installations are about architecture’s intersection with the sublime.

Chris Bardt, Sun Box, Providence, Rhode Island, USA, 1995 (see pp. 46–47)

A garden sundial reminds us of the connection between time and the rotation of the earth. In the most familiar design, the sun’s trajectory over the course of a day casts a moving shadow on a flat tablet inscribed with the hours. *Sun Box* was the product of Chris Bardt’s commission to build a sundial for the Convergence Arts Festival in Providence, Rhode Island, in 1995. Long intrigued by the movement of light across a room, Bardt created a box in which the light of the sun, not the shadow of a gnomon, would mark the passage of time. He designed the locations and sizes of the apertures into the thirteen-foot-high (four meters) box so that the path of the sun would cast sunspots at specific locations on the ground corresponding to set times of day. The dim environment inside the box created sufficient contrast for onlookers to see sunspots generated by the openings. “This is comparable,” he says, “to the difference between looking at a clock and hearing it ring.”²⁵

Constructing a sundial brings two worlds together: celestial geometries intersect terrestrial, material conditions. The primary

goal of *Sun Box* was to translate celestial data into a tectonic strategy, to make a construction of sunlight from a “drawing” of the sun’s motion.

Bardt’s tectonic concern was to determine the necessary depth of each opening in the wall and to calculate the location and quantity of light allowed to fall on the ground. Fins projecting into each opening altered the size of the aperture, much like a shutter of a camera. The fins prevented light from spilling onto a neighboring opening, and their angle and depth created a meticulous record of the changing path of the sun over the course of the year. Some of the openings allowed the sunlight to penetrate five minutes a day, while others provided hourly or monthly markings.

The tracing of time through apertures in a building is one of the oldest purposes of architecture—from the burial chambers of ancient Egypt to the Sun Dagger of Chaco Canyon or Hadrian’s Pantheon in Rome. Who has not watched a skewed rectangle of sunlight slowly moving across a floor and been aware of the slow passage of time as these light paths inch their way over the seasons?

But it was not its practical dimension that attracted the many onlookers who gathered during the installation of *Sun Box* in Roger Williams Park. Rather, says Bardt, these people came “to witness light falling through onto its markers—making an event of something that has become inconsequential—[suggesting] that forgotten relations between earth and sky, light and time, may still have a place in architectural work.”²⁶

James Cathcart, Frank Fantauzzi, and Terence Van Elslander, Resistance, Grand Rapids, Michigan, USA, 1990 (see pp. 48–49)

Resistance did not call on the powers of the sun but on the power of electricity: the modern energy source to generate light. The goal was to make visible the amount of electrical power that can be harvested in a building

by running all the electrical current through resistance wires, which became bright red when current flowed through them.

The three architects were invited to a weeklong residency in the gallery of the Urban Institute for Contemporary Arts in Grand Rapids, Michigan. It was a typical white-wall gallery, with maple floors and an immense electrical grid on the ceiling. Next door, there happened to be an electrical substation, where electricity was being parceled out to the houses of the neighborhood. Influenced by the Situationist International, Cathcart, Fantauzzi, and Van Elslander applied the idea of the situation to architectural installations. The group decided to follow a set of rules: to come to the site of the future installation without any preconceived solution in mind, to limit the introduction of new materials, and to minimize repetition.

The designers began by hanging wires from the electrical grid with the intention of redirecting all of the building’s electricity into the gallery. As each circuit reached its maximum load, they rerouted additional circuits from the building into the gallery until all available power was harnessed. “It was like a parasite that took all the energy from the building,” Fantauzzi writes. “In the end, we were able to activate most of the outlets and calculate the resistance of the building to the electricity coming into it as 13.739 ohms.”²⁷

The resulting installation was made of thirteen-foot-long (4.3 meters) Nichrome resistance wires hanging throughout the space. Nichrome wire—found in toasters and hair dryers—is made of nickel-chromium and offers a great deal of resistance to the electricity passing through it. As a result, it generates heat and glows with a deep red color. When the current was turned on, the harvested electricity transformed the vertical wires into thin, red columns dispersed throughout the space.

Unfortunately, the heat expanded and contracted the wires hanging in the gallery. In order to maintain their tension, they

needed to be weighed down. The group attached plastic bags filled with water, which then moved up and down with the contraction and expansion of the wires. “There was something powerful and strange about water that is close to electricity. If [the bags] had burst, it would have activated the entire floor,” Fantauzzi comments. He continues:

The wires generated an enormous amount of heat. You felt like you were in a toaster. It was an incredibly intense experience. You turned it on and then within minutes you would heat up slowly. You had the feeling like you were compressed by heat. Your body would feel strange, almost atmospheric. There was no need for lighting. There was a sensuality and beauty that goes way beyond the scary part. What does it mean to coexist in a space like that under those conditions?²⁸

Kourosh Mahvash, Albedo, Halifax, Nova Scotia, Canada, 2002 (see pp. 50–51)

In the early part of his career, the German architect Karl Friedrich Schinkel suspected a link between construction and spirituality: “Architecture could not represent directly the infinite and the eternal. It can only refer to it by a profound spiritual and organic unity achieved in the design.”²⁹ For millennia, architects have expressed spiritual immateriality in architecture by filtering or controlling sunlight. In his postgraduate thesis in architectural research at Dalhousie University, Kourosh Mahvash proposed the new idea that electric light could be as spiritually moving as natural celestial light. With simple materials including fluorescent tubes and fishing wires, Mahvash created seven distinct and interconnected environments that illustrated the spiritual path of Sufism.

Mahvash constructed and revealed his installation over a seven-day period, based on the astrological configuration of the moon on these particular days. The title of his work, *Albedo*, refers to the faint but highly

directional reflectivity of the sun's radiation on an astral body. The shimmering emanations retain a mere hint of the sun's original power. In the hands of Mahvash, Albedo became a metaphor for the spiritual awareness in the Sufi belief system: all the world's manifestations are but weaker reflections of the prime creative force of God. The seven-day period corresponded to a Sufi conception of the seven stages of spiritual enlightenment. Each stage had a specific color associated with it: the first is dark gray, the second blue, then red, white, yellow, and luminous black. The last and highest stage—when one reaches the Truth of one's being—was represented by the color green.

These seven stages relate to seven major Prophets of Semitic monotheism. When one reaches the truth of one's being, one has become the universal prototype. In other words, one has been transformed into the Muhammad of one's being. These seven Prophets and seven stages correspond to seven colors, described differently by various orders.³⁰

The installation took place in a long corridorlike space painted entirely black, a blank slate for the gradual introduction of colored light—one color dominating each day of the installation, with a small residue of the previous day's color to indicate what one had already experienced. The sources of light, gel-wrapped fluorescent tubes, were concealed, but the light was captured by the shimmering surfaces of the nylon fishing lines that formed the undulating walls.

The walls created by fishing lines were set according to a pattern that inscribed the movement of the moon on that day and in that place—making the work site-specific. The location of the moonrise and moonset in Nova Scotia, and the points of transit between the two, provided the geometrical information that determined the configuration of the luminous wall. As the trajectory of the moon changed each day, the resulting shapes of

the luminous walls in the room were altered accordingly. This meant that the installation was entirely transformed each of the seven days the space was opened to visitors.

For Sufi mystics, says Muslim author and translator Laleh Bakhtiar:

Light is a manifestation of Divine knowledge; and so, when these cosmological symbols are transferred to the microcosmic plane, the soul of the mystic is symbolized by the moon, which reflects the light of the sun. The ray of light that passes between them is the symbol of the intellect, and that light which is reflected by the moon symbolizes the spiritual institutions of the mystic.³¹

Each day, visitors to the installation experienced a gradual progression from darkness to light, and from lowliness to elevation. The stages of that progression were formally characterized by the construction system. The result was a unified experience of spiritual and structural unity conveyed by a single set of tectonic principles.

The magic of this installation was its ability to manifest light solely through reflection. While *Sun Box* and *Resistance* displayed the actual paths of sunlight and electricity, *Albedo* addressed the philosophical dimension of light through a layering of reflections: the path of the moon was traced onto the earth, and these tracings were then represented by colored electric light, again reflected off hundreds of filaments stretched in the room. This was an attempt to depict the mysterious albedo through the simple means of electrical light and wires—a phenomenon dear to Sufism as one sees the refraction of light and not its source.

There are many ways to explore contemporary issues of tectonics—from building materials to ornament and the immaterial. Tectonics is core to the practice of architecture, and theories of tectonics are always revisited as construction technologies and aesthetics evolve. If Semper and Bötticher

were key actors in working through these issues during the industrial revolution, contemporary thinkers and practitioners are now confronted with digital design, waste, and global warming. The next chapter turns away from materials and modes of assembly as the primary focus of the installation and moves toward the relation between built materials and the human body.

Chris Bardt

Sun Box

"The longer we were there, the more we were accepted. The tough kids got used to it; they began to own it. There was one place to squeeze in, and people found it right away."

"To put a door would be a whole different thing. When you get inside, you change to viewing the landscape instead of the light. The sunlight fell through the east, south, and west walls onto markers located on the ground at the center of the Sun Box."



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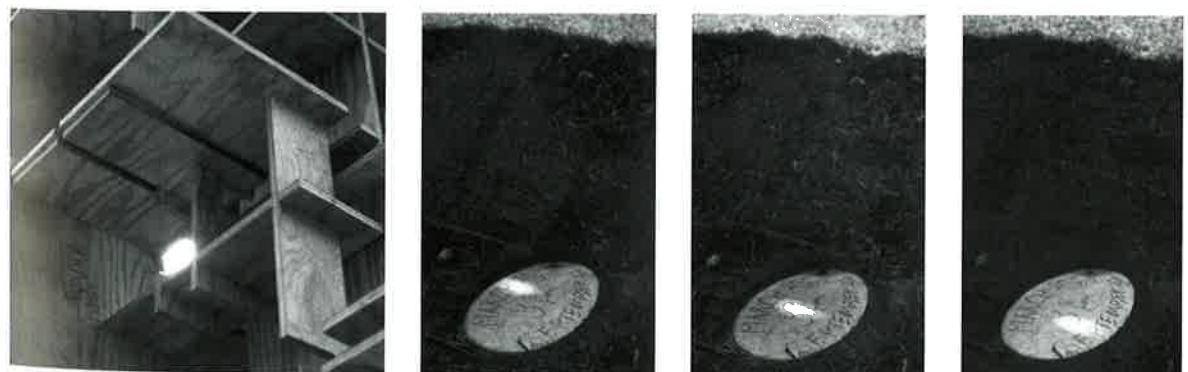
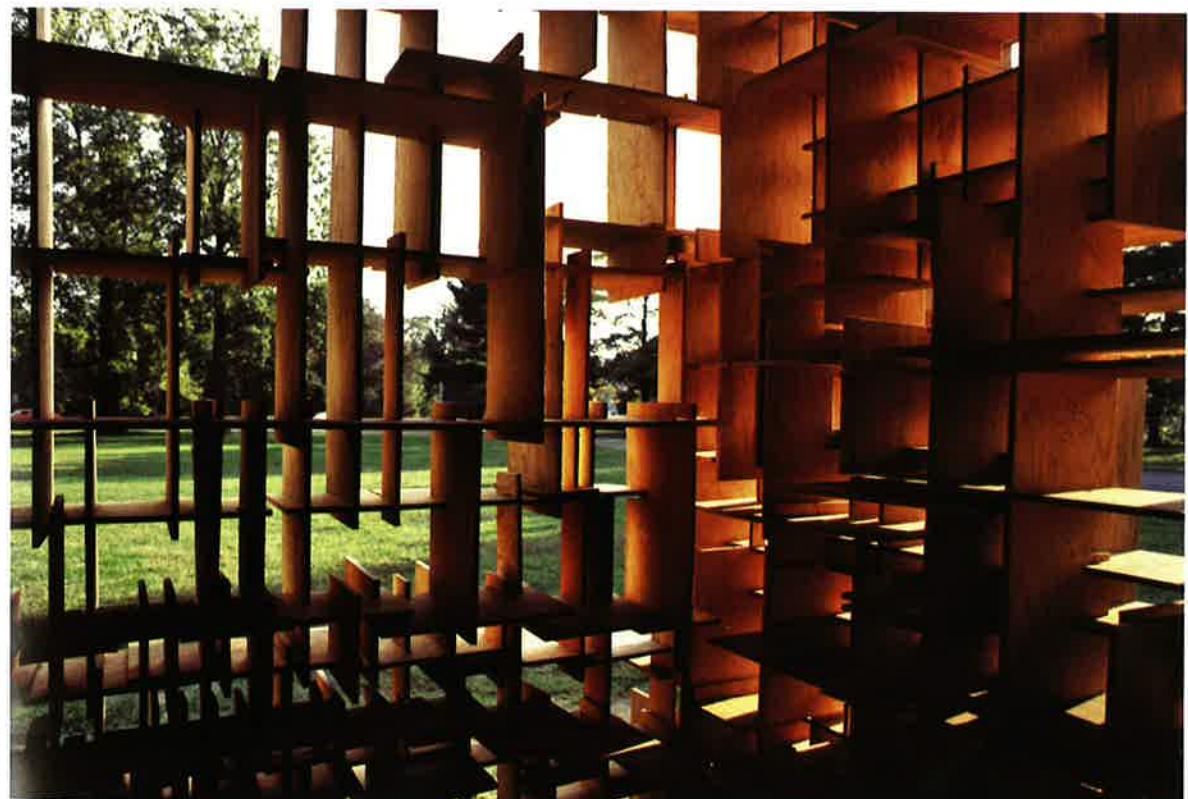
opposite

Bird's-eye view with ceramic discs on the ground locating where light falls on the twenty-first day of each month

top
Interior view

bottom left
Each opening was designed to allow sunlight to pass through it each hour for five minutes, on the twenty-first day of each month (plus a few days on either side). Detail of the north wall

bottom right
The sequence of a light spot moving across a ceramic disc was about five minutes from the initial appearance of light to its disappearance. The sunspot fell on the disk twice yearly, on the spring and fall equinoxes at 3 o'clock in the afternoon. Sunspot at 2:58 pm / sunspot at 3:00 pm / sunspot at 3:02 pm



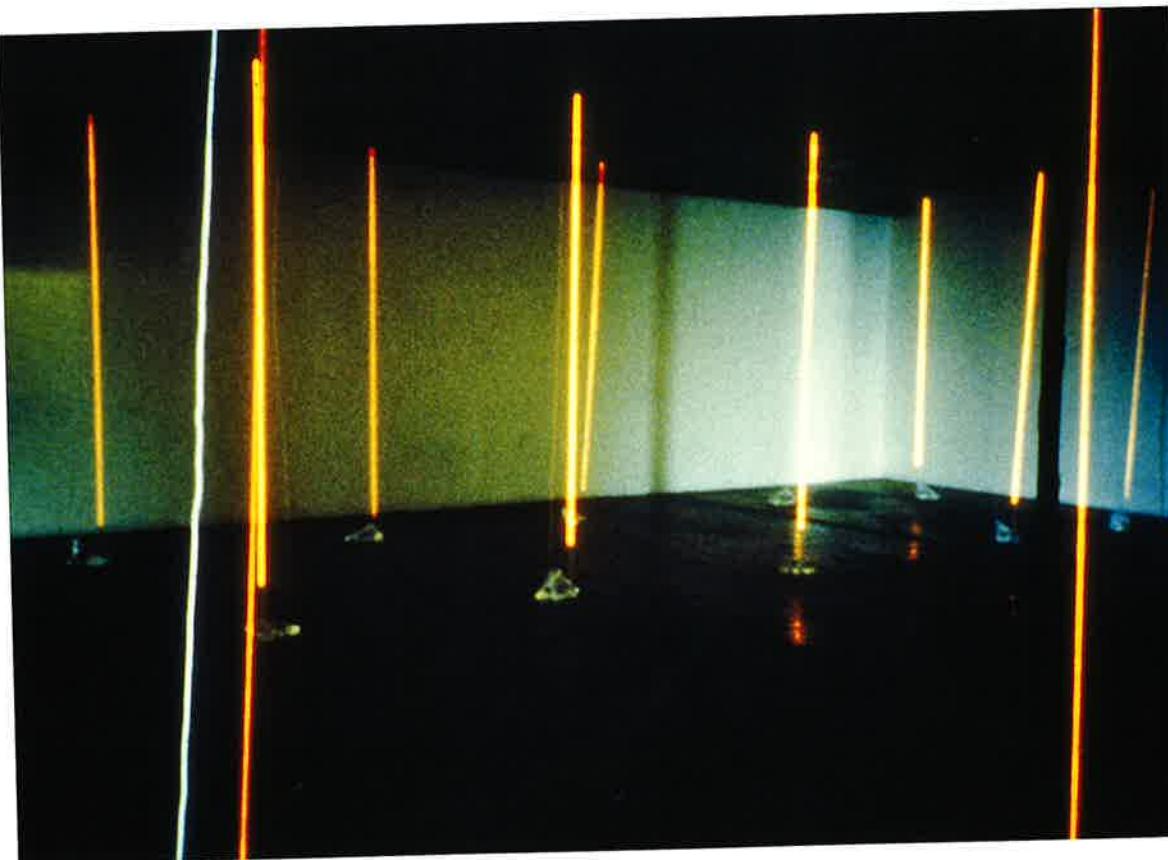
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James Cathcart, Frank Fantauzzi, and Terence Van Elslander

Resistance

The Nichrome wires hanging from the electrical grid turned red when electricity was running through them, because they provided a great deal of resistance.

"There was an incredible sense of danger in the space. If you touched a wire, you would get burned. We spaced the wires so that people could move between them." —Frank Fantauzzi

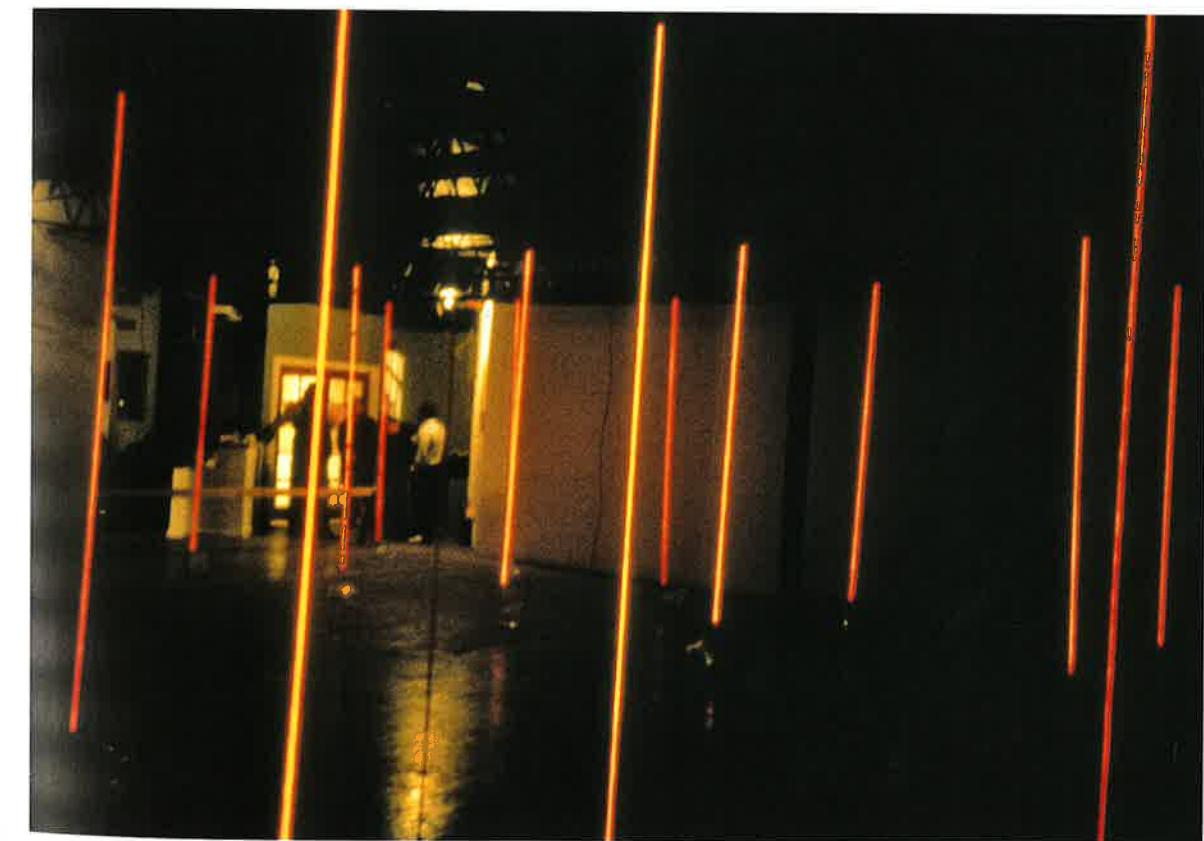


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top
A plastic bag filled with water was attached at the end of each wire.

bottom
View toward the front of the gallery

"Each loop of wire was weighted down with a plastic bag filled with water. This allowed for the wire to expand and contract by maintaining the tension. Water made so much sense because it was something you wouldn't associate with electricity." —Frank Fantauzzi



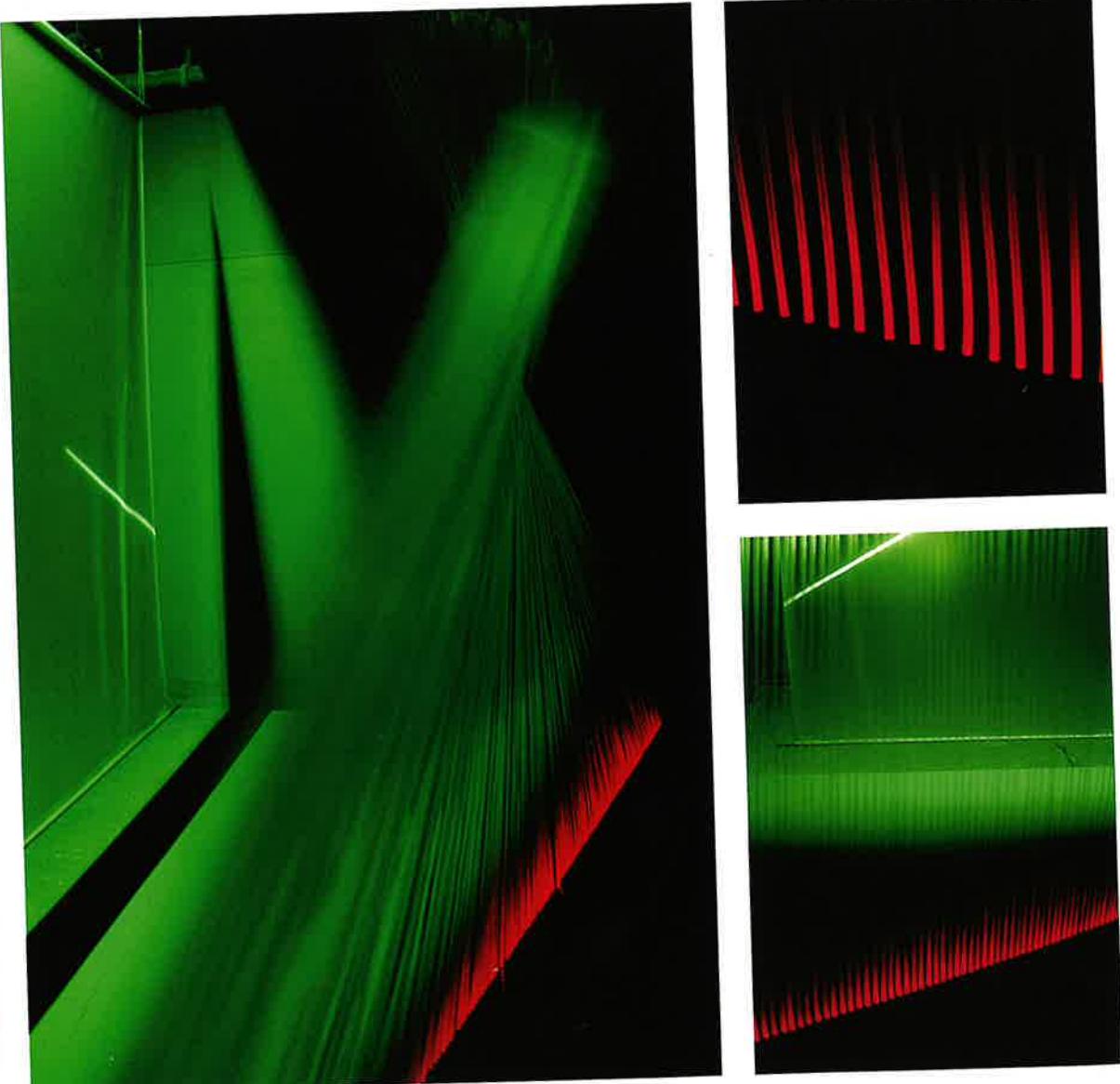
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Kourosh Mahvash

Albedo

"The third subtle organ is the spiritual heart, which exists in an embryonic form in the potential mystic as the pearl within a shell. It is none other than true I, the personal individuality. The spiritual relates to the Abraham of one's being as Abraham was the intimate friend of God. This stage is red..."

—al Simnani, fourteenth-century Sufi poet

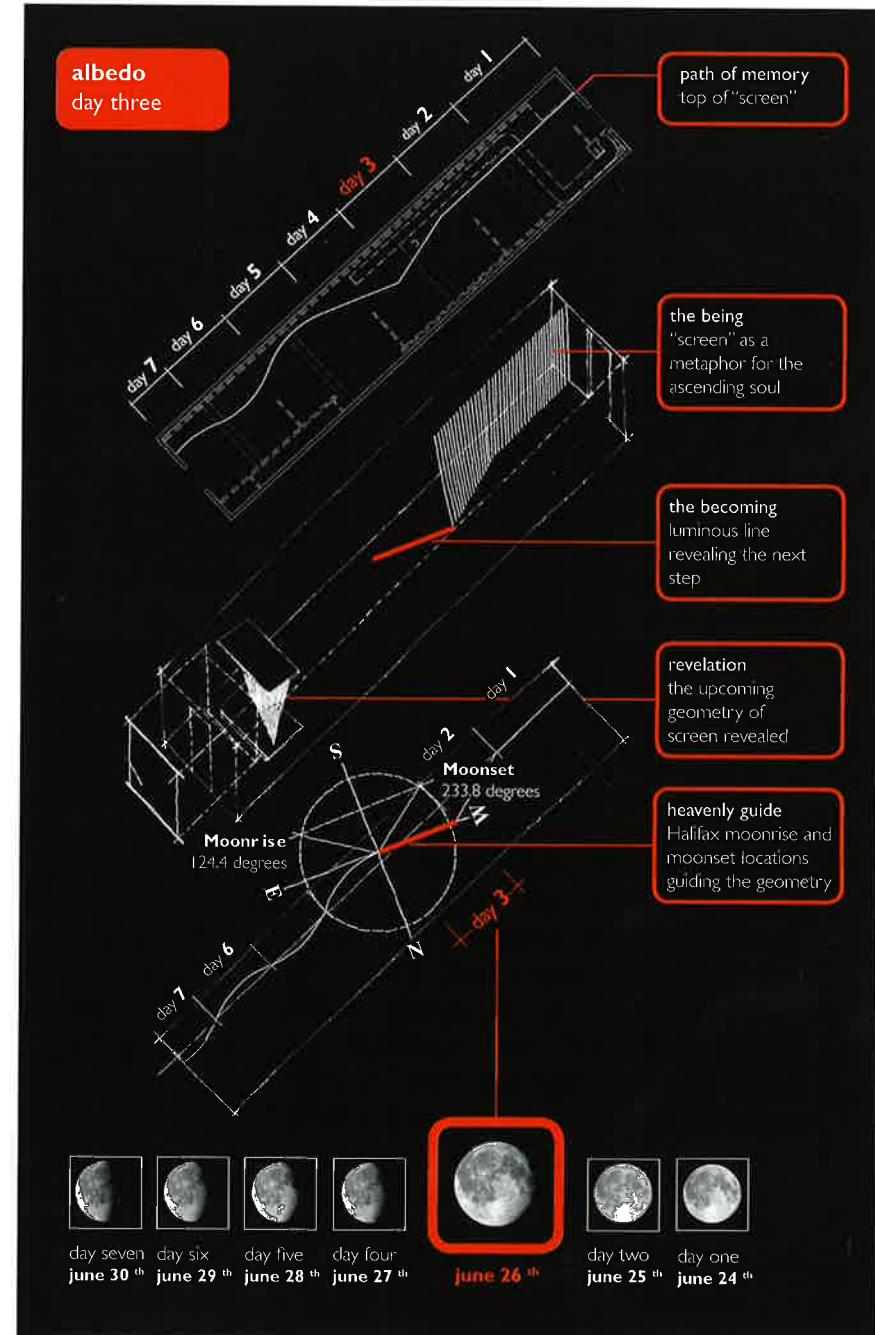


50

opposite left
The colored light was caught by the fishing lines stretched to create screens.

opposite right
Each day had a residue of the dominating color of the previous day,

below
Diagram showing the path of the moon from moonrise to moonset on June 26 and its transcription into a curved veil of light



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2. Body

The figure of the human body has been inscribed on building surfaces from the very beginnings of architecture. The Athenians supported the entablature of their Erechtheion on the sculpted bodies of women and modeled their architectural orders on men, matrons, and maidens. The plan of major religious Christian buildings often integrated the body of Christ—consider thirteenth-century French master builder Villard de Honnecourt's overlay of Christ's body on the plan of the Reims cathedral, or Leonardo da Vinci's inscription of a man with outstretched limbs in the center of the circled square in the Renaissance. Historian Joseph Rykwert's search for metaphors of the body led him to the very origins of Western architecture, finding evidence in the form of columns.¹ *Body and Building*, a collection of essays dedicated to Rykwert, revealed how the body metaphor has woven its way through architectural thought over the centuries.²

The body is no less present in the Modern era. Measured, mapped, traced, and ergonomically codified, the human body was pressed into the service of

Rationalism and Futurism as much as Functionalism and Taylorism. We can think of Le Corbusier's architectural promenade, Lilly Reich's efficient kitchens, Eileen Gray's choreographic architecture, and Moisei Ginzburg's user-path diagrams. Under the playful watch of the Surrealists, the body in architecture rediscovered its animal origins, evoking sexuality, perversion, excess, and uncontrollability through Hans Bellmer's drawings, Marcel Duchamp's sculptures, Alexander Calder's mobiles, and Frederick Kiesler's *Endless House* (1960). Bodies became like machines and vice versa—architectural examples of this include Pierre Chareau's elegant *Maison de Verre* (1927) in Paris in which, as Frampton memorably analyzed, valvular passages allow the husband in his study to communicate with his "bride" in her boudoir, reenacting, in a floor plan, human intercourse.³ Such a fascination with motion in architectural spaces continues to the present in Steven Holl's "hinged space" in his apartments in Fukuoka, Japan (1991), or public spaces in his student dorms at MIT (2002). Since the 1980s architects have been particularly drawn to the human body and its relationship to design. Michael Feher's three-volume collection of essays, *Fragments for a History of the Human Body* (1989), was followed by a number of books about spatial experience, phenomenology, and sexuality and space that expanded and deepened the conversation.⁴ The following eleven installations demonstrate the influence of Feher's writings and illustrate the current discourse about the relationship between the body and architecture.

The primary Modernist paradigm for relating the body to architecture was motion studies, a scientific analysis of human movement and behavior—it was widely employed in the early years of the twentieth century by industrialists who wished to increase the speed of production through rationalization. In exploring the legacy of motion studies in the present era, one encounters the seemingly inevitable downside of such methodologies: a trajectory toward human engineering and exploitation. Architects Dan Hoffman, Liz Diller and Ricardo Scofidio, Taeg Nishimoto, and Mark Goulthorpe share a fascination with the mapping, tracking, and measuring of the body but also retain a critical view on their human implications.

Reacting to the reductivity of such a science-based view of the human body, many architects have looked to human experience as a vehicle for understanding our relation to the spaces we inhabit—what could be called the “phenomenological turn” in body architecture theories. Inspired by the concepts of philosophers Gaston Bachelard, Martin Heidegger, and Maurice Merleau-Ponty, these architects have designed spaces for the future inhabitants: perceiving, experiencing, and sensual beings. They have focused on materials, light, texture, surface, heat, sensation, and all that which Juhani Pallasmaa has poetically described as “the eyes of the skin” in his book of the same name. The installations of Craig Hodgetts and Hsin-Ming Fung, Byron Kuth and Elizabeth Ranieri, and Thom Faulders are grouped because they all explore these ideas. Building on Merleau-Ponty's belief that we all have underlying physical tension, this methodology catapults the sensory body into a kinesthetic realm. The installations by Frances Bronet and Anna von Gwinner escalated and intensified human movement through dance, which allowed a forceful engagement with the architectural space in which they performed.

Additional projects by Yolande Daniels and the partnership of Arturo Torres and Jorge Christie address gender issues and the particular ways that women experience and understand space.

2.1 MOTION STUDIES: A SCIENTIFIC RECORD OF THE BODY IN SPACE

The history of construction techniques is intimately related to the body of the builder. Tools are shaped to be handled, as are construction materials: bricks are made to be placed with one hand, concrete blocks with two, and so on. Through the tools and machines that extend human capabilities, the body of the worker is present in the building at every stage of the construction process. In the early years of mechanized industrial production, the worker's body became a focus for scientific research. Using cameras and stopwatches, time-motion specialists recorded the repetitive movements of the laborers in factories and in kitchens, dissecting the movements of skilled craftsmen and housewives into intervals.

Early pioneers in this research, such as the husband-and-wife team Frank and Lillian Gilbreth, used time-lapse photography and electric lights fastened to the limbs of their subjects (an apparatus they called the "cyclograph") to create striking photographs that captured the traces of movement. With their cyclograph the Gilbreths traced the hand of a surgeon tying a knot, a mason laying bricks, and a factory worker folding a handkerchief. Such subtle or rapid movements, invisible to the naked eye, were recorded as a pattern of light on photographic plates.⁵ The Gilbreths' aim was to reduce inefficiencies and worker fatigue and increase production:

After analyzing the movements of a master bricklayer, [the Gilbreths] built an adjustable scaffold for piling up bricks to be used on the job. As a result, the bricklayer did not have to bend over and raise the weight of his body a thousand times a day, thus almost tripling a man's daily output from 1,000 bricks to 2,700 bricks.⁶

Dan Hoffman, *Recording Wall*, Bloomfield Hills, Michigan, USA, 1992 (see p. 58)

Dan Hoffman's *Recording Wall* (Cranbrook Art Museum) explored and deconstructed the scientific view of the human body at work. By systematically photographing each step in the construction of a masonry wall, Hoffman offered a reinterpretation of time-motion studies, mechanical-reproduction processes (such as photography), and repetitive labor.

An eight-by-sixteen-foot (2.4 by 4.8 meters) concrete wall was erected without mortar. As a mason set each block into place, a remote shutter release activated cameras positioned on either side of the wall: The wall was photographed each time a block was placed. Light-sensitive emulsion painted on each block allowed the photographs to be printed directly on each respective block's surface. As a result, each of the 105 blocks carried a photographic record of the progress of the wall being built. It also documented the physical effort required to build it as we see the man working away, block by block.⁷ Hoffman describes people's reaction to the project:

They smiled. People got it and that is what pleased me the most. They got that each block contained an image of the whole and that they were sequential. They got the idea that it started with the first one and ended with the last one.... [People realized that] architecture could talk about itself.⁸

The photographs showed the mason slightly changing his posture as he placed each block, adapting his range of movement to the increasing height of the structure. As he laid his first blocks on the ground, he bent over deeply; when the wall was nearly complete, he reached high to place the last blocks. Hidden in the apparent monotony of the construction technique was constant variation in the body movements. Because the wall was eight feet tall, the mason gradually

disappeared from sight behind the wall as he completed his work. The effect was both comical and tragic, contrasting the human qualities of the worker with the incessant monotony of the blocks and their small photographic figures.

The modularity and simplicity of the wall also reinforced the repetitive task of construction. The accumulation of images encouraged the viewer to reflect on the mason, his body, and its relationship to the wall, the fundamental architectural element. The result was an entirely self-referential installation that presented a perfect fit between content and form, underlining the association between body and material, between craftsman and concrete blocks. It was a construction about construction.

Diller + Scofidio, *Bad Press, Dissident Ironing*, traveling exhibition, 1993 (see p. 59)

Another project that directly addresses the Modernist involvement with time-motion studies is Elizabeth Diller and Ricardo Scofidio's *Bad Press, Dissident Ironing*, a traveling installation. *Bad Press* examined the act of ironing, a household task guided by motion-economy principles developed by efficiency engineers at the turn of the century.

Diller and Scofidio comment:
Good pressing of a shirt involves using a minimum of effort to reshape a shirt into a two dimensional, repetitive unit, which will fit economically into standardized orthogonal storage systems—be it a shipping carton, display case, dresser drawer, closet shelf, or suitcase. The standard ironing pattern always "disciplines" the shirt into this flat, rectangular shape.⁹

The installation was dominated by a video projection of a man wearing a white shirt slowly turning in place like a mannequin. The wrinkles on his shirt have been ironed out, leaving three distinct gridlines

(creases). This was the example of a perfect ironing job—representing conventions and expectations—and it provided a ready terrain to explore disruptions, distortions, and desires. Below the video screen, there was a series of white shirts displayed on horizontal surfaces. In contrast with the first shirt worn by the man in the video, these were "misironed" in all sorts of ways: One had the bust folded inside the sleeves; another had its sleeves crumpled into swirls. Others were folded into origami shapes. All the objects remained open for interpretation in their twisted, often grotesque forms.

The installation was also about the rituals of everyday life. "The art of Diller + Scofidio," says Aaron Betsky, "consists of making us aware of such rituals by perverting them, structuring them so they have a logic that is believable, productive, and yet profoundly disturbing."¹⁰ By intentionally mis-ironing shirts in multiple ways, the designers pursued the possibility that deliberate misinterpretation could redeem seemingly constraining social conventions.

Both *Recording Wall* and *Bad Press* revisit Modernist architects' attraction to time-motion studies and their love affair with efficiency, modularity, and standardized units. These projects stand as a criticism of the scientific analysis of the body at work and the illusory promise of a better world through human engineering.

Taeg Nishimoto, *Re-f(r)action*, Brooklyn, New York, USA, 1994, and Paris, France, 2000 (see pp. 60–61)

Two additional installations also work with time-motion studies, but for a very different purpose. Drawn to the unexpected beauty of time-lapse photography—as it was captured in the pioneering work of the Gilbreths and French photographer Étienne-Jules Marey—Taeg Nishimoto and Mark Goulthorpe created their installations around traces of movement. Taeg Nishimoto's projects, gathered under the

umbrella name *Re-f(r)action*, were installed in galleries in the United States and France between 1994 and 2000. They explored the idea of absence by translating simple movements into form. The results were long, curved wooden arcs built out of white poplar suspended within the white world of the gallery.

Nishimoto began his projects by sketching a plan of his movement through the space of the gallery: "Like a downhill skier, who prepares for a competition by mentally acting out all the moves beforehand, I imagine moving in the space before actually being there. At the beginning the lines are entirely spontaneous, and at some point they become more precise."¹¹ Wood strips were first placed in the room according to his drawing; their forms and positions gradually evolved as they were constructed and tensioned. In addition, Nishimoto built temporary partial-height walls in the gallery, setting them in dialogue with his arcs. He explains that the "presence of the wood bows, which meander through the articulated spaces, as well as the shadows the bows cast on the vertical surfaces, amplified the sense of spatial dynamism, tectonically, tangibly, and conceptually."¹² Weaving in and out of the rooms and around the suspended arcs, the viewer could feel the movements as Nishimoto imagined when he drew his first sketch.¹³

Lastly, he added horizontal dashed lines, squares, and sweeping shadows on the gallery walls. Nishimoto used drawing—both in his architectural drawings and the drawing on the walls of the gallery—as a way to further interpret the space created by the installation. For the drawings, he deconstructed each curve into lines and dots until they created a field, and added hatch marks to the curves in plan. He then transcribed these marks into three dimensions by attaching short sticks to the sweeping arcs. One of the sticks was always painted black and pointed to a black square—the registration of the vector of the black stick as it encountered the wall.

Through such obsessive recording and registration of vectors, one could measure the settlement of each bow from the time they were first set in place to days later when the whole installation had settled.

This way of working pushes the traditional architectural activities of measuring, dimensioning, and recording to their extremes, tipping them into the realm of the absurd. Like Daniel Libeskind's fantastic architectural drawings from the 1980s or Peter Eisenman's recombinatory *Houses One through Ten* of the same period, Nishimoto's installations are fields of black squares, dashed lines, and shadows that constantly play between the volumes implied by the arcs and their intersections with the orthogonal world of the gallery. By registering and projecting one line onto another and translating movement into form and form into line, Nishimoto enacted a rigorous process of measurement to create an all-encompassing visual field. Projecting geometry on, into, and through space, his installations offered a sense of poetry through the dynamic tension between an object and its trace, a form and its shadow.

Mark Goulthorpe, *Ether/1*, Geneva, Switzerland, 1995 (see p. 62)

Ether/1, built in a park, was commissioned in 1995 to commemorate the fiftieth anniversary of the United Nations. The project was a collaboration between Mark Goulthorpe, principal designer for the firm dECOi, and the well-known choreographer William Forsythe. Together, Goulthorpe and Forsythe revisited the work of Rudolf Laban, an early-twentieth-century pioneer in choreology (dance analysis) who invented a system of dance notation known as labanotation.

In a series of ballets through the 1980s and '90s, Forsythe examined the inherent limitations of Laban's movement system, which relied on pure geometries centered on the dancer's body.¹⁴ He updated Laban's Modernist choreographic principles with a

Postmodern worldview, effectively decentering the source of motion so that it no longer was necessarily located in the body of each dancer but could be anywhere in space. In this way the geometries of axes and alignments could be located, translated, exchanged, inverted, and mirrored—in short, they could constantly evolve in space. Thus, the established spatial grammar of movement would be subtly but profoundly reconfigured. Forsythe's choreography developed a generation of unexpected and destabilized movement patterns, coherent within themselves, but unthinkable within the classical canon.

To create *Ether/1* Goulthorpe videotaped dancers performing the same portion of Forsythe's *Quintet* multiple times and transferred the motion data to a computer to develop digital models. The ultimate goal, however, "was not to capture the positive trace of the dancer's movements through space, but the difference between several attempts at the same sequence."¹⁵

The installation was based on the poetics of human performance—the slight differences that inevitably occur when the same sequence is repeated again and again.

This process focused on the interpretive qualities of the dancer, including uncertainties, hesitations, and tempo changes. The final form of the project—built out of a double layer of tessellated aluminum strips that created a moiré effect—was an architectural expression of human dissonances in repetition. These vibrant extended forms seemed on the edge of losing control, although—like Forsythe's choreographies—they were perfectly balanced, effortlessly hovering above the ground.

All of the preceding installations address different aspects of movement, showing a desire to examine the Modernist tenets underlying motion studies. By recording the motion of the mason as in Hoffman's *Recording Wall*; by resisting the rules of proper ironing as in Diller + Scofidio's *Bad Press*; by needlessly complicating measuring and marking as in Nishimoto's *Re-f(r)actions*; by focusing on the unseen alterations in a dancer's interpretation as in Goulthorpe's *Ether/1*, all these projects reinvent movement through a critical, personal eye that disturbs the canon and brings desire and sensuality into the picture. In short, they invest poetry into the scientific process of motion studies.

Dan Hoffman

Recording Wall

top

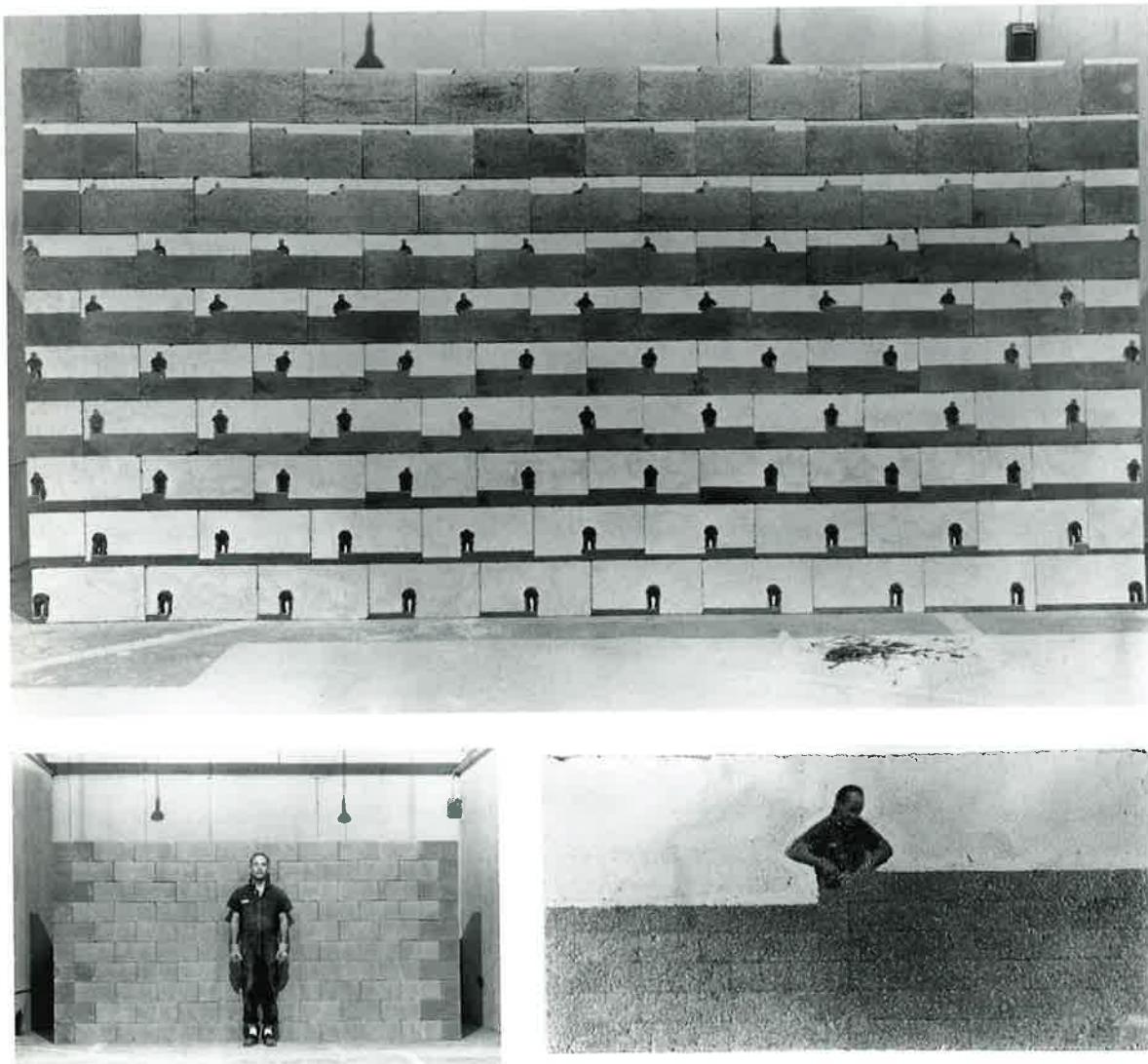
Like the motion studies done by the Gilbreths in the early twentieth century, the systematic photographic recording revealed how the placement of each block required the craftsman to perform a different motion.

bottom left

Stacked concrete blocks form the wall. Eight feet (2.6 meters) high and sixteen feet (5.3 meters) long, the wall's proportions corresponded to those of a single block.

bottom right

As each block was set in place, Hoffman photographed the wall. The image was then printed on the block using photosensitive emulsion, and the process repeated until the wall was complete. Detail of top image, fifth row down, fifth from the right



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Diller + Scofidio

Bad Press, Dissident Ironing

top

A model wears a white shirt that has been perfectly ironed according to the rules of the trade.

bottom left

Misironing highlights the rituals of ironing by perverting them. In their negative dialectic, the shirts spoke of social conventions and the work involved in maintaining them.

bottom middle

Connection to the human body disappeared as the shirt went through different transformations. Viewers redeemed the misironed shirts by creating their own associations.

bottom right

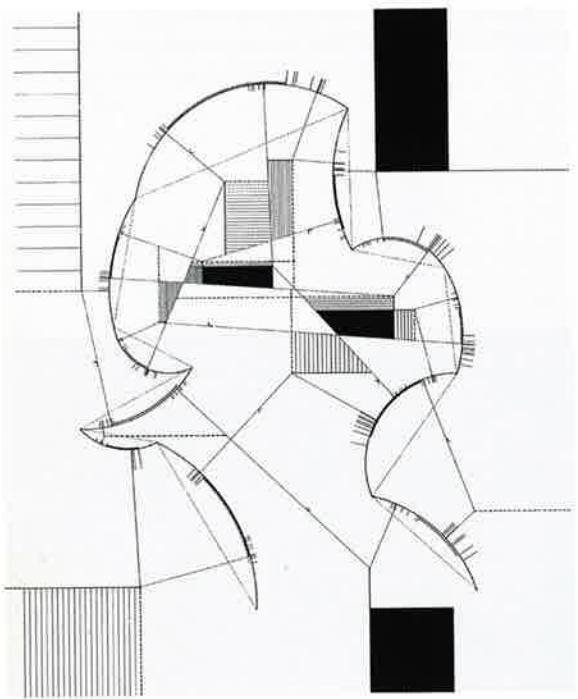
Bad Press created entirely new forms in a way that was believable, yet also disturbing. After the difficult task of unfolding it, the shirt would be full of creases.



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Taeg Nishimoto

Re-f(r)action

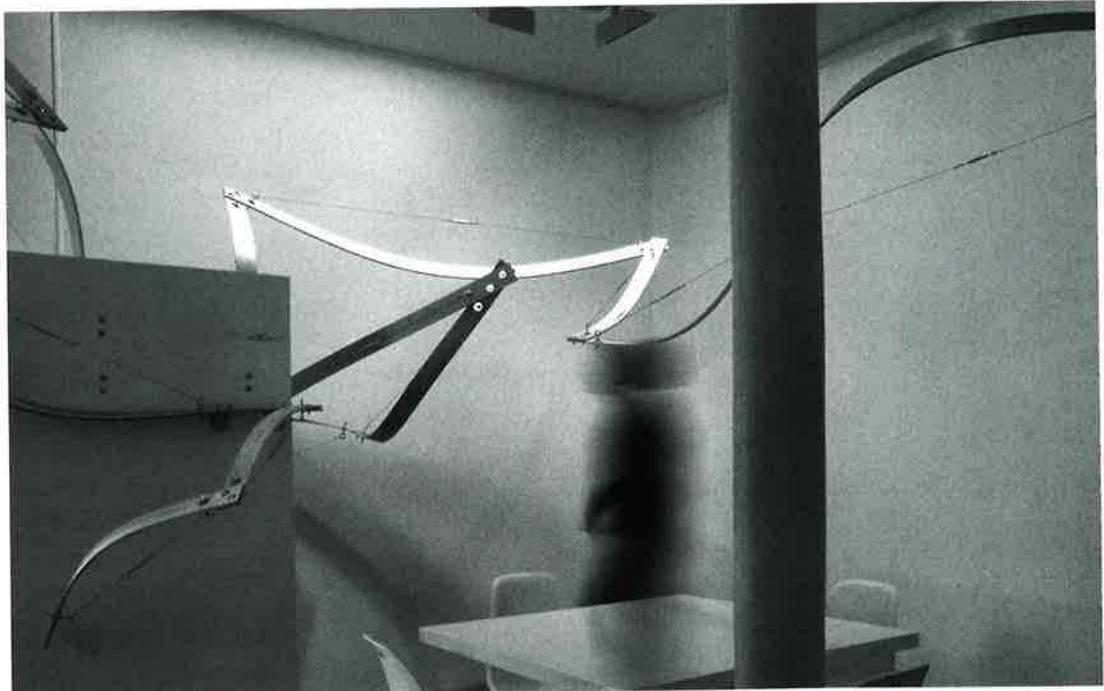


top

Taeg Nishimoto, *Re-f(r)action*,
Rotonda Gallery, Brooklyn, New York,
USA, 1994, plan

bottom

This gallery had a place for people to sit down, consult books, and have a coffee if they wished. *Re-f(r)action #4*, La Gallerie d'Architecture, Paris, France, 2000



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top

The white poplar pieces curved into bows were held in place by wire cables. Stainless-steel tensioning devices held the curved elements together and also created an anchor point for the cables. Nishimoto, *Re-f(r)action #2*, Higgins Hall, Pratt Institute, Brooklyn, USA, 1995, construction detail

bottom

Re-f(r)action #4

"I use the sketch drawing like a map, but the actual construction of the installation evolves gradually as the elements start to occupy the space in a continuous set of action and reaction."



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Mark Goulthorpe

Ether / 1

top

Video cameras captured a series of performances of the same dance duet. Mark Goulthorpe then translated the information into frozen traces. The slight variations reflected the way each performance happened a little differently.

bottom

The layers of aluminum strips created a moiré effect that revealed differences of traces generated by each performance. A double tessellated surface of aluminum was built using four thousand nonstandard components cut and welded.



2.2 PHENOMENOLOGY / PERCEPTION AND BODILY EXPERIENCE

We now turn away from the traces left by a body evolving through space and shift our attention to the way human bodies experience and perceive space. This discussion has been greatly influenced by the philosophy of phenomenology, which theorized the phenomenon of perception and experience.

Hodgetts + Fung and Kuth/Ranieri Architects, Projects for Body Building exhibition, San Francisco, California, USA, 1998

(see pp. 67–68)

The following two installations were a part of Fabrications, an exhibition about architectural installations coordinated by Mark Robbins, which was mounted in 1998 at the Museum of Modern Art in New York, the Wexner Center in Ohio, and the SF MOMA simultaneously.¹⁶ Exhibited at the SF MOMA exhibition and collectively called Body Building, two installations were intended to represent or engage the human body in four different states: in action, in repose, in equipoise, and “the somatic” body. Two of these installations allowed visitors to feel, in their own bodies, a simple yet profound relationship to the way buildings function. The first illustrates a body in action (breathing), and the second, in repose.

Body in Action, by Craig Hodgetts and Hsin-Ming Fung, was a large fabric bag attached to an air-conditioning grille inside a gallery of SF MOMA. The cream color of the fabric allowed the object to become part of the gallery setting, making it seem like an extension of the building’s breathing system. “The apparatus was like a lung, and the only exit for the air was through little tubes that were like flutes of a piccolo. They are wheezing away. So, when the pressure mounted sufficiently to lift the orb, the jaws opened and the air came out with a whistle,” explains Hodgetts.¹⁷

The apparatus essentially worked like a bagpipe, with a suspended ball acting as a counterweight causing the “mouth” to open and close. “The idea came from a Greek treatise called *Pneumatica* by Heron of Alexandria on the use of air to create temple miracles. When they sacrificed a lamb, the heat of the fire would create a vacuum underneath that activated bellows, which would then magically trigger a musical instrument.”¹⁸ *Body in Action* brought this theatrical device into the space of the gallery, and the soft complaint generated by the movement of the bellows gave visitors a feeling that the building had a spirit.

In the same gallery space, *Body in Repose*, by Byron Kuth and Elizabeth Ranieri, created an environment for a body to rest. Layers of soft, thick gray felt were sculpted to create a series of womblike cubicles for sitting or reclining. The felt absorbed ambient noises, and the enveloping forms created small, dark shelters. Kuth explains that reducing environmental stimuli allowed the visitor to rest: “The idea was to drop you in an environment that would affect your senses—tactile, aural, visual. The change of sound level was really profound, nearly ecclesiastical. The environment was entirely accessible, it was right there, sized to your body.”¹⁹ By embedding the row of soft cubicles into the cavity of the museum wall, Kuth and Ranieri created an opposition between the cool white gallery and the soft intimacy of the felt enclosure:

We had stripped everything off, and we were into the cavity of the wall. As you leaned against the felt, you could see the steel columns, the HVAC systems. Our intent was to explore what would it be like to inhabit your psychological self and your physical self at the same time. Those two worlds are always rubbing one against the other, so we tried to make that seem visible.²⁰

The installation was uncanny because of the overt physicality of its construction: the felt incessantly pinched with C-clamps and

the exaggerated ribs providing support for the cubicles. The ambiguity between skin and structure, inside and outside, disturbed multiple boundaries between body and building, allowing visitors to physically experience the area that was the thickness of the wall. From the gallery, visitors could see down the length of the cubicles and observe nineteen people sitting in their enclosures with their legs hanging out.

These two projects isolated a physical experience of the museum building and created a situation where the public could reflect on it. They revealed the enduring appeal of phenomenology to architects—especially as it was presented in Bachelard's *The Poetics of Space* (1958) or Merleau-Ponty's *The Phenomenology of Perception* (1945). In the late 1960s and '70s phenomenology provided a way out of the oppressive and reductive world of positivism and a way for architects to place value on people's actual experiences of buildings and places.²¹

The Body Building installations reinvested experience with meaning unrelated to facts or data. One could have wired visitors up with sensors to measure their degrees of relaxation in the felt cubicles, or calculated the velocity of air flowing from the breathing bag. But the point of these installations was to recognize the conscious, feeling person, aware of his or her surrounding environment. By helping us to make sense of perception, these works suspended easy answers and assumptions and revealed the world in all its concrete richness.

Thom Faulders, Mute Room, San Francisco, California, USA, 2000 (see p. 69)

The *Mute Room* was installed at the Wattis Institute for Contemporary Arts as a part of the Rooms for Listening exhibition. In this project, Thom Faulders of Faulders Studio designed an environment that reacted to the human touch. He calls these types of spatial experiments "meatspace," and they are like

laboratories.²² This installation illustrated phenomenology in its heightening of the viewers' senses to increase perception. *Mute Room* was a temporary performance space for electronic music. In order to create a specific acoustic, the floor surface of *Mute Room* was entirely covered with memory foam.²³ As Faulders recalls, "I was interested in the physicality of the music itself, the length of the waves and the way it is absorbed. The memory foam had the right dissipating qualities."²⁴

The installation bracketed the acoustic experience, marking it clearly through texture, color, and light, and inviting the visitor to investigate. Sixteen hundred square feet (150 square meters) of pink foam were laminated to a plywood substructure, transforming the floor into a continuous wave. The weight of the body would leave an imprint on the surface of the foam, which would disappear after a minute or so. In this playful way, the visitor had a direct and personal impact on the room. The pink color of the walls mimicked the appearance of the subcutaneous flesh of the eyelid—evoking a peaceful ambience as when the eyes are closed. "Memory foam, a self-healing material," Faulders suggests, "creates an environment that attracts people who need to do the same."²⁵

Since the room was a temporary space for an electronic music concert, the research focused primarily on the auditory experience of the audience that would lounge on the soft, curved surfaces. The combination of the sound baffle and the memory foam created an acoustic environment that had transitory qualities. Sounds lingered until fully erased by the slow action of the memory foam. The foam was laid on an elevated floor to create a wavy surface that supported the audience as they leaned back during the concert. "The hilly lump beneath the foam's surface was analogous to an overgrown larynx and operated as a fixed sound baffle. It enhanced acoustic clarity, similar to the way a musical note 'decays' in the air before dissipating."²⁶

As described by its designer: "the room's absorbent textures and warm, soothing colors gave the visitor the impression of being suspended in a boundless haze as floor becomes wall becomes colloidal space."²⁷ The room was the perfect place for reading and napping. Although CCA students wanted to keep the *Mute Room* as a "hang out" space, it stayed true to form as an installation and remained only as a memory. Its success lay in the power of "bracketing"—one of the key concepts of phenomenology. Here, the room bracketed auditory perception in order to allow people to listen "as if for the first time."²⁸ In other words, the design of the room was intended to isolate one of the senses—in this case hearing—and intensify that experience.

Frances Bronet, Space in the Making, Troy, New York, USA, 1997–2001 (see pp. 70–71)

The preceding projects in this chapter focused on a relatively passive interaction between the user and the environment. Yet people more commonly experience environments actively, by moving through and around spaces. Linking the idea of movement to that of the experience of the self, philosopher Merleau-Ponty stated, "every movement is, indissolubly, movement and consciousness of movement."²⁹ He criticized the mechanistic idea of action and reaction, in which the body is seen as a simple set of motor actions. Drawing from Gestalt psychology of the 1920s, Merleau-Ponty proposed that the potential for movement is constantly present in the body as "movement-tension." This potential for movement, he said, develops out of the repetitive physical activities performed every day. Installations by Frances Bronet and Anna von Gwinner explored this relationship between the built environment and the inner potential energy of the body in action.

Paul Klee, perhaps the artist most able to convey meaning, humor, and emotion with a simple line, held that "pictorial art springs from movement, is in itself interrupted

motion and is conceived as motion."³⁰ If architecture is substituted for pictorial art, these words could illustrate the views of Bronet. Working in collaboration with the choreographer Ellen Sinopoli and others, Bronet explored the interplay between the kinesthetic body and architecture in motion. Her desire was to challenge the overemphasis on the visual sense by widening the range of experiences possible in a space.³¹ "Just by moving through a space we change it," says Bronet.³² Likewise, Sinopoli is drawn to unpredictable movements that confront the physical limitations imposed by architecture. "The floor," she says, "what a hegemony! When you want to leave the room you go through the door because that is the way it was designed, but if you go through the window, you might find out something you didn't even know existed."³³

Working in an old warehouse in Troy, New York, from 1999 to 2001, Bronet and her students from Rensselaer Polytechnic Institute designed and built a number of experimental dance environments inside a building that could take some abuse. A large hole was cut into the floor, and a necklace of inner tubes hanging between floors through the hole gave dancers a chain of reactive supports on which to climb from one floor to the other. This was a truly responsive architecture, with the inner tubes reacting to any contact made by the dancers. In another project, a forest of vertical bungee cords anchored at both ends allowed the dancers to hang upside down and explore a wide range of movement. A floor made of tilting platforms was the most successful design. Each platform could tilt independently as the dancer's weight shifted—lending an unpredictability that responded to the body in motion. Audience members also participated, says Sinopoli: "a man was watching the performance, his hand was tightly clinging onto the handrail—that was his body participating."³⁴

Anna von Gwinner, *Trampolinist*, Karlsruhe and Berlin, Germany, 2001 and 2005
(see pp. 72–73)

Anna von Gwinner's *Trampolinist* was a video installation that brought the movement sequence of a trampolinist into a set of different architectural spaces. These associations generated entirely different meanings for both the video and the building where it was projected. The installations began with the videotaping of an athlete jumping on a trampoline. The video was then projected at two sites: a Catholic church in the center of Karlsruhe, Germany, in 2001 and a bunker at the site of the former Berlin Wall in 2005. The architect analyzed the spatial conditions and psychological associations of each particular place and altered the manner of projecting the video in order to heighten or counteract these conditions.

The Karlsruhe installation was in the nineteenth-century Church of St. Stephan, whose impressively high dome had been rebuilt in concrete after the Second World War. This dome—where the screen was set up—became the setting for the trampolinist's extraordinary exercises. By projecting the video into the vaulted space, von Gwinner wanted to evoke a sense of reaching for spiritual enlightenment. The athlete's leaps and bounds allowed the viewer to see the space in a new way—in simple, straight jumps he sprung toward the apex of the dome, toward the light descending through the oculus. The generous vault demanded that his movement be expansive.

Von Gwinner videotaped her trampolinist with two cameras. One recorded his upper body in the air and the other his legs landing on and springing from the trampoline. In this installation, only the upper part of the movement sequence was projected, giving a sense of flight as the body floated into ever-higher

realms of the dome. Since visitors never saw the athlete's moment of impact with the trampoline, he appeared to float effortlessly, like an angel.

Depending on the level of light, von Gwinner says,

The trampolinist becomes more or less important. During the day his appearance is faint, his outlines unfocused. He seems to submit himself to the space. As light falls, the emphasis shifts from the space to the trampolinist. At night, when the church is completely dark, he becomes the center of attention, the acrobat who defines the atmosphere in the church. It seems that only the screen can detect the trampolinist as we lose sight of him as he moves outside the frame. The virtual position of the trampoline is on the floor of the church below the screen. The time lag in between disappearing and reappearing the screen is calculated to register that position.³⁵

The second location for the project was a subterranean bunker under the "death strip" at the former site of the Berlin Wall. There, von Gwinner projected the other half of her video footage onto a screen at the end of a corridor. The concrete walls, floor, and ceiling of the bunker framed the trampolinist's body—this time the lower part of his jump—as he rhythmically descended onto the trampoline and bounced up to disappear into the ceiling. This time he was not an angel, but a man who could accomplish what the viewer's entire body wished most—to break through the oppressive mass of earth above the bunker.

Seen through a phenomenological lens, the two installations matched Bachelard's description of the axis in a house between the attic and cellar—one associated with air, light, sky, and daydreams, the other with earth, darkness, memories, and primal fears.³⁶

Hodgetts and Fung

Body in Action

The fabric bag was hooked up to an air-conditioning unit, which blew air into the "lung."



Kuth/Ranieri Architects

Body in Repose

left

Cubicles sculpted out of felt allowed visitors to rest in a quiet, womblike environment. The soft enclosures muffled sound and permitted visitors to withdraw into a state of light contemplation.

right

Construction detail



Thom Faulders

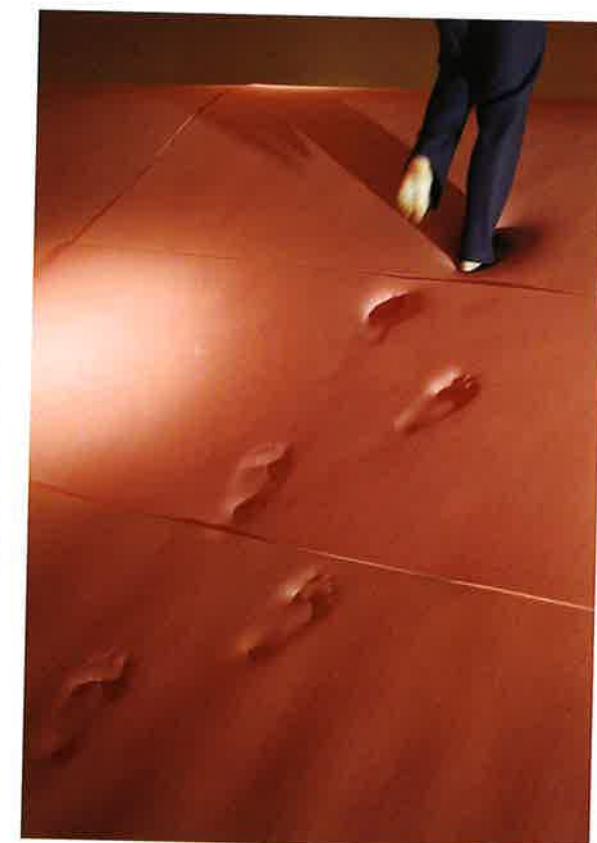
Mute Room

top row

The properties of the material—its form and texture—responded to the human touch. Like traces in the sand, footprints are remembered but also quickly forgotten.

bottom

Memory foam (familiar as earplugs) covered large surfaces of the floor on which the audience could sit. The foam absorbed sounds more slowly, altering the acoustics of the room.



Frances Bronet

Space in the Making

top

Like open pods, these translucent fabric structures invited dancers to enter. Frances Bronet (with Terry Creach Dance Company and Bennington College), *Dichotomy, RPI Dance Infusion, Design 1*, Rensselaer County Council for the Arts, Troy, New York, USA, 1997

bottom

Spill Out was created by hand weaving a thousand strips of spandex into a structural frame. Bronet (with Sid Fleisher and Ellen Sinopoli Dance Company), *Historic Gasholder Building, Troy, New York, USA, 1997*

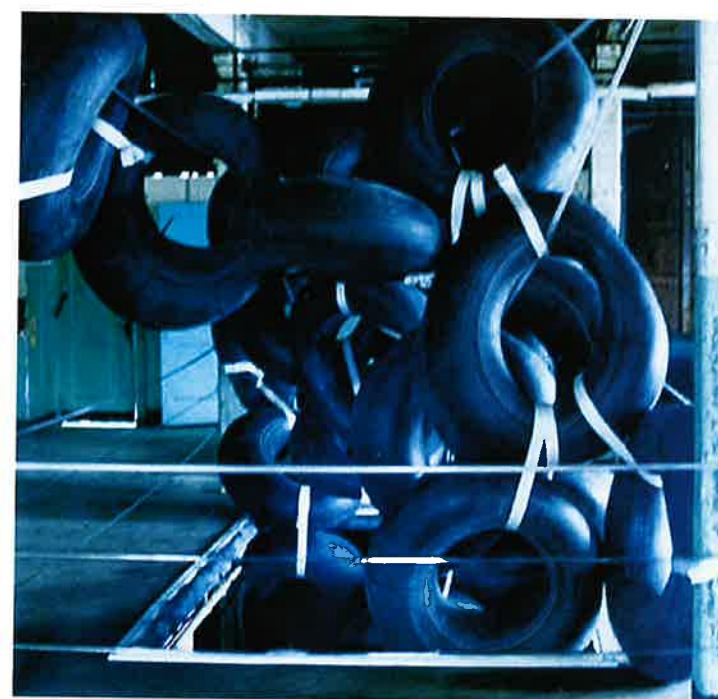


top

A necklace of inner tubes gave dancers reactive supports on which to climb between floors. Bronet (with choreographer Elizabeth Streb), *RPI Embodied, Design 1, Boardwalk Center, Troy, New York, USA, 2001*

bottom left

A series of glass platforms moved as dancers shifted their weight across the surface, giving the dance an unpredictable quality. Bronet (with Ellen Sinopoli Dance Company), *Beating a Path, Storefront, Troy, New York, USA, 1999*

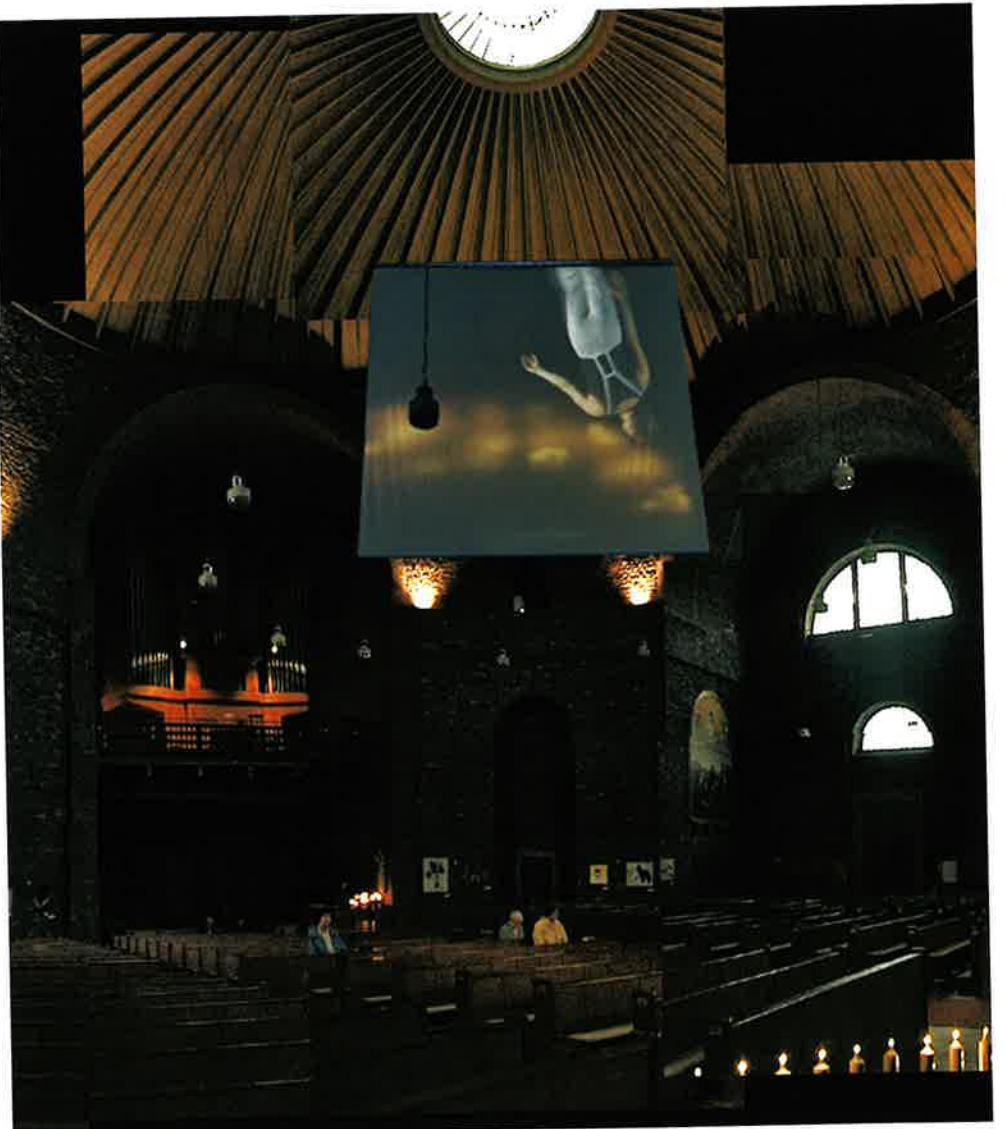


bottom right
Detail of *Dichotomy, RPI Dance Infusion, Design 1*

Anna von Gwinner

Trampolinist

Trampolinist 1, Church of St. Stephan,
Karlsruhe, Germany, 2001

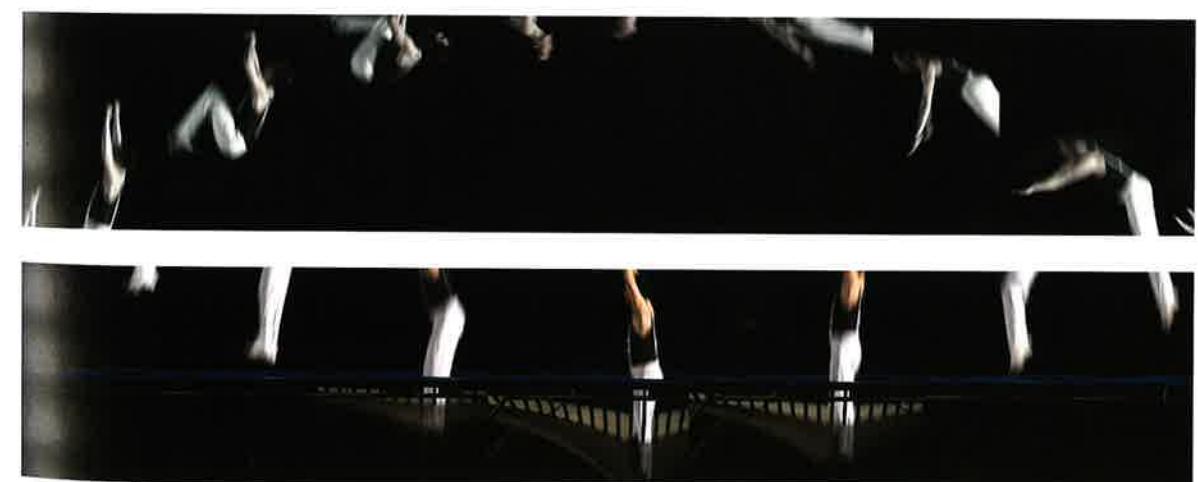
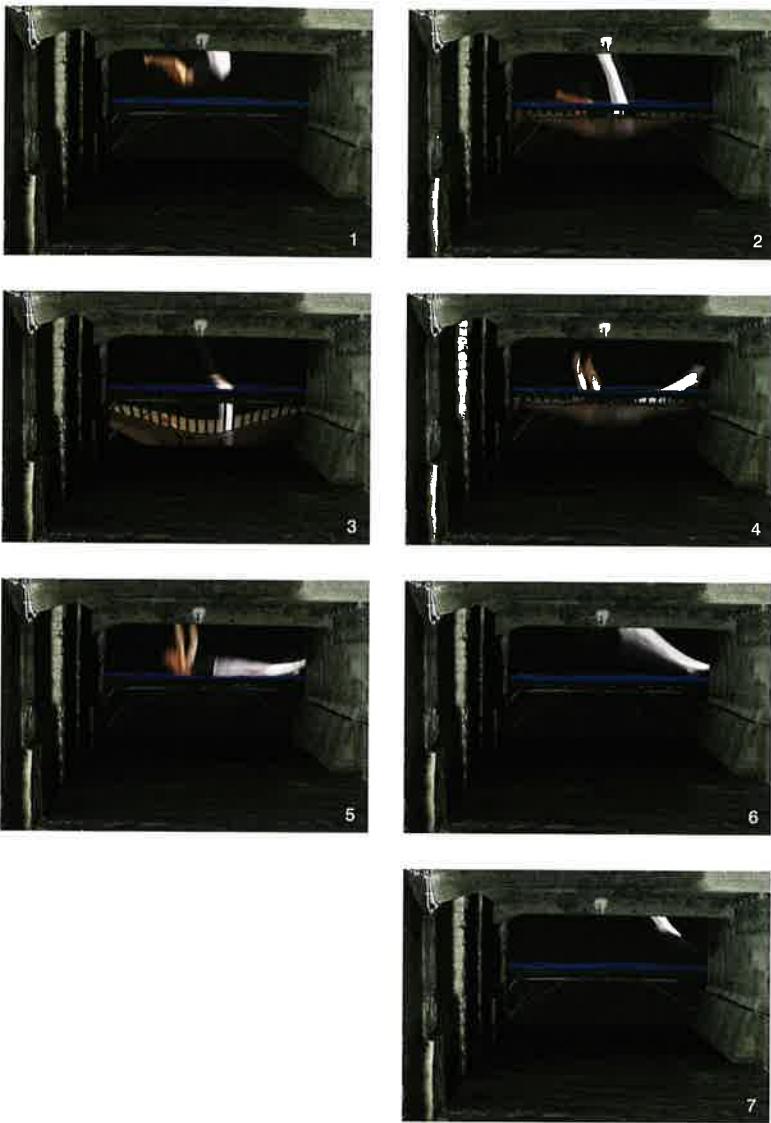


"The priest drew inspiration from the video installation and left it running during mass. Some of the heads of the worshippers were moving up and down, following the movement of the trampolinist as he appeared and disappeared on the screen. Oddly enough, their gaze followed the movement implied beyond the screen and onto the floor."

right (1–7)
This version of *Trampolinist* used only the bottom part of the video. The body of the trampolinist disappeared in the most liberating manner through the thick mass of the ceiling of the bunker: each time the body penetrated the concrete ceiling of the bunker, he appeared to achieve the impossible feat of defying the laws of physics. What remained was the slow reverberation of the net, trapped in the bunker...until the next jump.
Trampolinist 3, Berlin, Germany, 2005

bottom

The trampolinist was filmed with two video cameras. One framed the movement of the athlete above the net and the other focused on the net.



2.3 POSTMODERN BODIES: THE PERSONAL IS POLITICAL

A phenomenological approach to art can be a useful tool, especially when it is applied to the study of an installation about architecture and its relationship to the human body.³⁷ But phenomenological analysis requires an awareness of the criticisms that have been leveled at the philosophy, particularly its assumptions about the universality of human experience.³⁸ Philosophers Martin Heidegger and Jacques Derrida each challenged the attempt to ground phenomenology in the presence of an individual subject, arguing that the subject is partly constituted by elements that are external to it: history, tradition, a shared world, a relationship to other individuals, and language. Strictly speaking, the phenomenological method asks one to experience an object as if encountering it for the first time, with no presuppositions. According to Heidegger, an early critic of the philosophy, this is not possible because the very process of creating meaning through language inextricably preconditions individuals, securing them in relation to each other and to language itself. “We belong to a language,” he says, “that has been shaped and formed by others before we arrive on the existential scene.”³⁹

This criticism has worked its way through many fields of thought today, and architecture is no exception. A person’s experience of the world is greatly influenced not only by language but also by social conventions and traditions specific to gender issues and culture. The last two projects in this chapter explore the ways in which women experience and interpret space. These installations challenge architectural conventions and standard practices predicated on the universality of architectural experience, deconstructing and criticizing longstanding assumptions.

In 1996 a group of feminist architectural historians wrote *The Sex of Architecture*, a polemical book intended to challenge

assumptions “such as man builds and woman inhabits; man is outside and woman inside; man is public and woman is private; nature, in both its kindest and its cruellest aspects, is female and culture, the ultimate triumph over nature, is male.”⁴⁰ That same year, Yolande Daniels created *FEMMEpissoire*. And two years later, *The Nautilus Project* by Arturo Torres and Jorge Christie addressed gendered notions of privacy. Working through issues of gender, public space, and privacy, they provoke viewers to question what is seen as normal, and ask why this is so.

Yolande Daniels, *FEMMEpissoire*, New York, New York, USA, 1996 (see p. 78)

Yolande Daniels’s *FEMMEpissoire* was first installed in a guest room of the Gramercy Park Hotel. Daniels developed the project because of her frustration at encountering long lines for access to women’s public washrooms while men zipped in and out of their facilities. Her installation confronted the gender bias embedded in the building codes that mandate an equal number of stalls for men’s and women’s washrooms but allot additional fixtures for men in the form of wall-mounted urinals.

FEMMEpissoire addressed this issue head on, asking what a women’s urinal would look like if it existed. The project, installed in the bathroom of the hotel room, included a straddle-style urinal supported by pipes, a mirror, and a pair of rubberized black pants designed to be worn by the woman using the urinal while standing up. Daniels explains the “politics of standing”: “Why stand? My interest was generated, on the one hand, by long queues at public restrooms for women and, on the other, by a query as to whether the act of controlling the flow of urine constitutes an essential personal freedom for men.”⁴¹

The aesthetics of the object, constructed of stainless steel, suggest a medical instrument rather than a fixture. “The gynecological exam,” Daniels says, “has been inscribed as the proper place for knowledge of female

anatomy and functions.”⁴² The charge in this work came from the way it fetishized the medical apparatus—a feature that linked it to such notable architectural works as Pierre Chereau’s gynecologist’s office inside a house. Daniels’s personal interest was in empowering women by exploring the “essential personal freedom” implicit in the use of a urinal. Daniels proposes the fixture as a place of self-discovery, with a strategically placed mirror that allows the woman straddling the fixture to see her own face as she urinates. For Daniels, the experiment encourages a “new view of female subjectivity.”

The physical context of the project reveals a reworking of the traditional opposition between public and private realms. The installation transformed the bathroom of a room at the hotel into a public gallery dedicated to viewing. The simultaneously personal and public character of the *pissoire* (slang for “public urinal” in French) has long attracted the attention of moralists. In the 1880s, for example, public toilets in Holland were specially designed to prevent homosexual acts.⁴³ But it was not until the 1990s that the gender politics of these marginal spaces began to be analyzed in a critical manner. At the time Daniels was creating *FEMMEpissoire*, men’s public washrooms were being reclaimed as important cruising grounds for gay men.⁴⁴ In that context, the semiprivate status of the hotel bathroom, rendered public for the duration of the installation, highlighted not only gender but also sexuality.

Arturo Torres and Jorge Christie with Daniela Tobar, *The Nautilus Project*, Santiago, Chile, 2000 (see p. 79)

The Nautilus Project also addressed the intersection of gender and private space by turning the privacy of the home inside out. Its architects Arturo Torres and Jorge Christie (part of an architect’s co-operative) built a small one-room house made entirely of glass on a vacant lot in downtown Santiago. The transparent

skin left its inhabitant, a woman who went about her everyday tasks in the house, fully exposed to passersby. A provocative project, it challenged assumptions about privacy and publicity, specifically in relation to women’s position in Chilean society.

The building of the installation followed the standard protocol for the construction of a normal, everyday house. The architects, who won a government competition that paid for the materials, obtained a regular building permit for its erection. It was strategically situated across from a church, near major banks, and down the street from the presidential palace—symbols of religion, capitalism, and the state.

The inspiration, Torres recalls, “came from reading surrealists texts from around 1945, especially poetry, which we find extremely strong. We were interested to take up these ideas again in the context of today.”⁴⁵ Like Meret Oppenheim’s fur teacup, which upset the china cart, Torres and Christie provoked the viewer into reassessing his categories of public and private. The glass house was as transparent as Ludwig Mies van der Rohe’s Farnsworth House (1951) or Philip Johnson’s Glass House (1949), both built in richly landscaped private estates. By placing the transparent dwelling in the centre of urban Santiago, Torres and Christie juxtaposed transparency and urbanity, modernity and history, privacy and publicity. “In Chile, Modernity is equated with tech-nology,” Torres says, “but where does the idea of Modernity come from? It comes from Baudelaire; it is essentially a cultural transformation. Being Modern for Baudelaire is to be immersed in city life.”⁴⁶ Thus, for *The Nautilus Project* to really address Modernism, it had to be in the center of the city, not in the middle of nature.

To find a resident, Torres and Christie pinned up posters around the city. Five women answered the call. They chose actress Daniela Tobar, the woman who looked the most ordinary to them. Torres explains,

We wanted the person and the house to be as ordinary as possible. There was no script. Each day, she went out to work, she invited her friends over for dinner, and so on. It started on a Saturday evening. But after three days, photographs of the house were published in the newspapers, and the television cameras descended on *The Nautilus Project*. When Daniela would come out of the house, there were a lot of people and the street was blocked.⁴⁷

Tobar was asked to lead her routine, daily life in the house. But her use of the bathroom drew voyeuristic crowds and howling criticism that the architects never imagined.⁴⁸ Fervent Catholics threw stones at the house, which was fortunately built out of shatterproof glass. Others sued the architects for practicing in this manner.⁴⁹ Torres and Christie, like the Dadaists, wanted to place something in the street to see what would happen and to confront Chilean conservatism head-on. But the reaction was much greater than they had anticipated: “Tobar had to move out before the scheduled two months were up, after someone attacked a woman who had been mistaken for her, and death threats sent the architects into hiding.”⁵⁰

The issues of transparency and over-exposure are at the heart of the project. The term *nautilus* refers to a strip club in Santiago where nude women swim in large aquariums. Clients sit and drink in the dark, while the aquariums are brightly lit. Torres had been involved in a plan for renovating the city’s red-light district and had seen the working conditions for sex workers in Santiago firsthand. By bringing the “aquarium” into the daylight and exposing the ordinary, everyday lives of women, they hoped to emphasize their fundamental humanity—in contrast to the display of female bodies as consumable objects in the *Nautilus* club.

Leftist critics complained that the architects could have selected a less attractive or older woman. But, as Torres responds,

“this would have been neo-Marxist” in that it would have been too obvious a choice.⁵¹ Their aim was “to challenge Chilean society’s ‘troubled relationship with sex and nudity,’ which Torres attributes to an oppressive, hypocritical society and Catholicism’s institutional hold on the country’s moral structure.”⁵² Yet, for many viewers, the project’s charge laid in its occasional exposure of nudity. Though the architects intended to reveal the fundamental humanity of women, they could not avoid the societal transformation of Tobar into an object of curiosity and desire. In an effort to maintain control over the proliferating interpretations of their installation, Torres and Christie refused to give TV interviews, which they felt would inevitably corner them in a defensive position, and instead they created a web page.

But Tobar held a very different position on the project. While Edith Farnsworth memorably described her experience in the glass house designed by Mies as making her feel “like a caged animal,” Tobar, a professional actress, relished her time in the spotlight.⁵³ “I think Daniela did not understand the project,” Torres says. “She did an interview with a major television channel without telling us. She knew we would not agree, and this brought on the break up. She thought she had become Marilyn Monroe.”⁵⁴ Torres and Christie had difficulty accepting Tobar’s exploitation of the project’s potential to bolster her career.

We close by reflecting on how the installations chosen for this chapter illustrate the primary argument of the book—that installations are a way of thinking about architecture in a critical manner. Freed of the normal requirements of a building (to enclose and support activities) and focused entirely on ideas, installations allow architects to reflect on their discipline and to critically analyze it. The installations exploring the body in architecture examined the science of motion studies that was so central to early Modernist architects. Rather than accepting such studies

as accurate depictions of human activity, the architects used the installations to probe into the artistic and poetic qualities of motion studies research, to identify its intrinsic biases and fragmentary nature, and to explore the psychological and political implications inherent in any attempt to quantify human activity. Similarly, the installations that build on phenomenology reveal the centrality of

human experience in architecture and explore the nature of that experience—the point at which people encounter buildings—by amplifying the sensory potentials of architecture (with memory foam, a felt wall, or a breathing “lung”). Finally, installations can help their audiences question the notion of the universal human experience, and to confront assumptions regarding gender and space.

Yolande Daniels

FEMMEpissoire

A room of the Gramercy Park Hotel was temporarily outfitted with a female urinal and special pants.



"The politics of exposure: the mirror, lipstick, pants.

Outside the female water closet, we risk immodesty and lose privacy. Perhaps we will be liberated as well."

Arturo Torres and Jorge Christie with Daniela Tobar

The Nautilus Project

top left

Pushing the Modernist idea of transparency, the little house brought issues of gender to downtown Santiago.

top right

Daniela Tobar performed scenes from everyday life. Here, she was applying her makeup.

bottom

The glass house quickly attracted crowds of onlookers.

"We wanted both the house and its occupant to be typical." —Arturo Torres

