

Domestic Arrangements: A Lab Report. Tod Williams and Billie Tsien

Author(s): Tod Williams and Billie Tsien

Source: *Design Quarterly*, No. 152, Architecture Tomorrow (1991), pp. 21-28

Published by: [Walker Art Center](#)

Stable URL: <http://www.jstor.org/stable/4091253>

Accessed: 27-02-2016 01:47 UTC

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Walker Art Center is collaborating with JSTOR to digitize, preserve and extend access to *Design Quarterly*.

<http://www.jstor.org>

**DOMESTIC
ARRANGE-
MENTS:
A LAB REPORT**

Tod Williams
and
Billie Tsien

Tod Williams was educated at Princeton and at Cambridge University in England. He has been an adjunct professor at The Cooper Union, New York, since 1974. Billie Tsien is a graduate of Yale and UCLA. She, too, has taught at The Cooper Union, as well as at the Parsons School of Design, New York, the Harvard Graduate School of Design, and the Southern California Institute of Architecture, Santa Monica.

Recent works by Williams/Tsien include the Whitney Museum of American Art, Downtown at Federal Reserve Plaza, New York, 1988; Tapin Concert Hall, Princeton, New Jersey, 1989; Howard Residence, New York City, 1990; Phoenix Art Museum and the Little Theatre, Phoenix, Arizona, ongoing; Yale Graduate School of Nursing and Underground Parking Garage, New Haven, Connecticut, ongoing; University of Virginia, Residential College Dining Hall, Charlottesville, Virginia, ongoing.

Williams/Tsien Project Team:

Marwan Al-Sayed	David van Handel
Annie Chu	Stef Kolman
Reenie Elliott	Steven Lino
Brett Ettinger	Cathrin Trebeljar
Rick Gooding	

Domestic Arrangements was shown at Walker Art Center from 3 December 1989 to 11 February 1990. The exhibition then traveled to the Whitney Museum of American Art, Downtown at Federal Reserve Plaza, New York, the Cleveland Center for Contemporary Art, the Powerplant, Toronto, and the Wexner Center for the Arts, Ohio State University, Columbus.





overleaf:

Detail of table/bed and Homasote walls.

Homasote walls surround a space where the visitor sees one of three models in which the ideas set forth in the exhibition are applied to rural, suburban, and urban sites.

This exhibition began with a number of questions: What is meant by the phrase architecture tomorrow? What does such a broad term mean to our work, which is so deliberately specific to each project? What does it mean for us (or any architect) to show work in a museum? And how can we seize this opportunity to move closer to an architecture for tomorrow?

These questions led us to consider Architecture Tomorrow as a research project. If we could present this as a report of ongoing research, then we could also consider a question with which we have been struggling for some time. How can our evolving personal philosophy, the way we choose to live, become a more integral part of our work for others?

The house has always been a testing ground for architects. The elements of this exhibition are full-scale pieces of a house. They are not mock-ups. They are real pieces. Initially we had hoped to build a complete low-cost "research" house, but because of budget constraints, spatial requirements of various venues for the exhibition, and obvious functional restrictions in the galleries, we had to forego that possibility. Therefore, we decided to investigate the permutations of specific materials and elements that might have rich implications for house and home in suburban and urban settings.

While low-cost building has not been the primary focus of our past research, it has been an important concern. In this regard, we have been thinking about the re-use of materials: wood pulp, wood chips, and paper products, recognizing that the raw materials for these products may someday be in even shorter supply than they are today. As materials in and of themselves are benign and it's their use that determines their value —another question emerged. How can we make this work significant in its form, even as it is unassuming in its materials?

This research has produced important results. The results produced new questions. These (domestic) arrangements are not fixed. They are proposals to see, to reflect upon, and to use. By sharing our research with the public we hope we can subvert the condition in which we all, to some extent, play a part: the elitist marketing of architecture and architects as commodities. Even as we are part of that world, we hope that Architecture Tomorrow provides an opportunity to alter it. The object of this research is not to create objects to be consumed. The object of this research is use.

1,2 Roof/Wall

We began by studying two ideas: a series of segmented pieces and a solid lightweight mass that could act as a structural whole. After many attempts to develop a hollow segmented system, we chose the concept of the solid segmented mass. The structural shape is derived from concerns of structure, construction, and use. It can be sliced like a loaf of bread to accommodate different sizes and situations. Connected and stiffened with a hollow horizontal laminated paper tube, it is a structurally integrated form. Tipped vertically, the same form can

provide a wall system that also has its own integral structure.

Using conventional carpentry to produce a form, we made a series of expanded foam segments. These are lightweight, thermally efficient, waterproof, and self-supporting. While we lost the quality of translucency, which was possible in earlier experiments with plastic panels, we gained the properties inherent in the sculpting of a solid mass—carved openings and niches. When used as an exterior wall or roof, the outer surface must be sprayed with an elastomeric coating to protect it from the sun. The interior may remain in its natural state. We have interspersed this material with translucent panels made by sandwiching a thin sheet of packing foam between fiberglass panels.

3 Columns/Beams

While researching the roof structure, we uncovered possibilities for the application of laminated and foam paper. Used to provide protective packing for furniture and as display booths for exhibitions, this material is lightweight, strong, and inexpensive. A wooden mandrel is produced by the factory and then paper is spun and laminated around the form to yield a hollow tube. Although it is possible to produce an original mandrel, in the interest of cost we chose to use an existing shape. By slicing this shape into sections we obtained the pieces we needed to produce the columns and the connecting elements that support the roof.

4 Floor

On a visit to the Smithsonian Institution in Washington, D.C., we saw an exhibition of manufactured objects that represented the technologies of various decades. One of the objects from the 1970s was a pallet on which materials are loaded to be picked up by forklift. The pallet was made of wood chips mixed with resin and compressed in a mold. It produced a strong shape that was both homely and elegant. We thought at the time that there must be a way to use this technology, which is so obviously an outgrowth of the particle board commonly used in construction of all kinds today. When we inquired, we found that forty-two-inch-square pallets, capable of carrying 1500 pounds, could be purchased for \$5.25 each. To cast and machine a new form would cost about \$30,000. Therefore, again, cost considerations led us to use the pallet in its existing configuration. We bought four of them and began to experiment with surfaces and finishes. It seemed to us that the pallet provided an easy, inexpensive, visually interesting, and transportable way to make a raised floor. We tried a number of filling and surfacing techniques. We experimented with Masonite and paperboard as surfaces, and sand, gravel, sawdust, and resin as fillers.

For the floor surface a perforated hardboard was selected. It is similar to Peg-board but lighter in color, made of fine wood particles bound with an adhesive matrix and baked. This gave us a standard floor surface that was easy to apply with mechanical fasteners, and inexpensive. It also allowed a view of the hollow space of the pallet below, and the underside of the pallet could be seen as a subfloor or a ceiling for a space below. In an actual



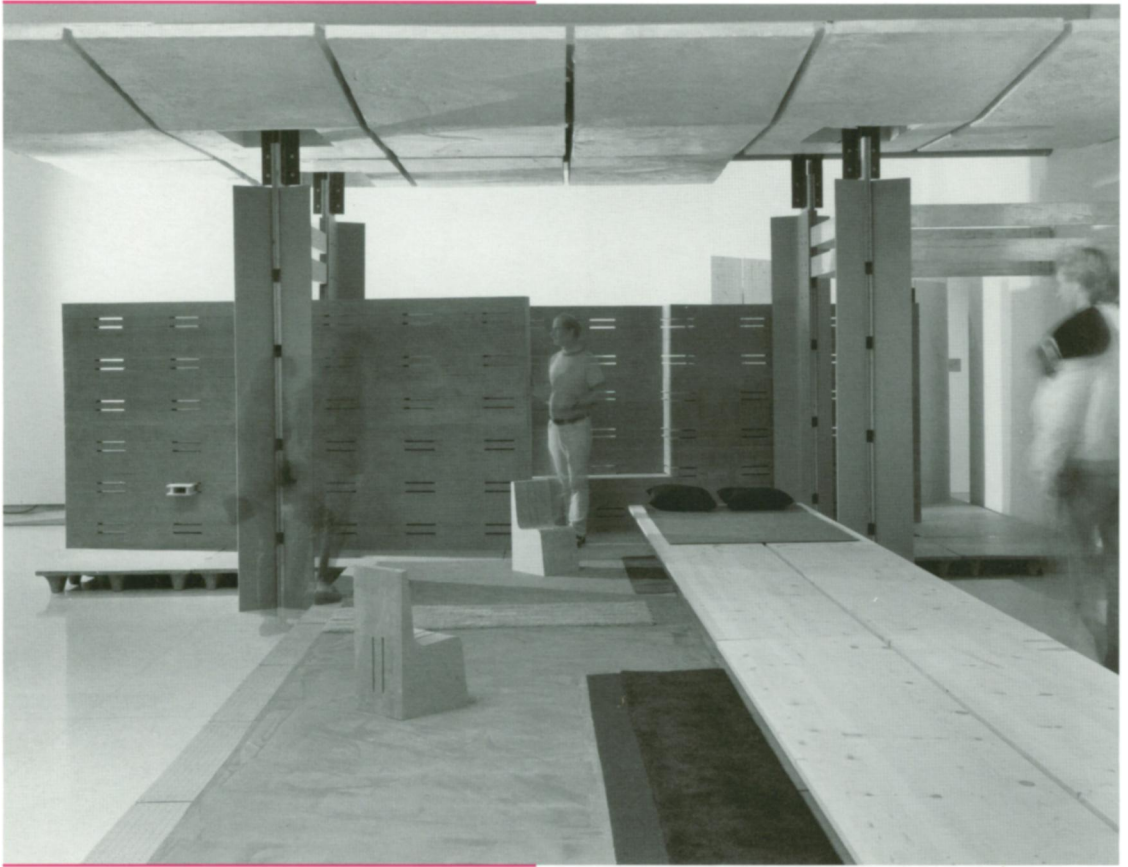
house, the area beneath would provide space for ventilation and locations for utilities.

The filler we liked is a combination of gravel and resin. Although this is a rather “precious” finish — both more labor intensive and more expensive than some of the other options — it is very compelling. It gives the impression of walking on ice, the stones frozen beneath the surface.

5,6 Interior Walls/Seating

We live in a space that was formerly our studio. The bathroom, which is in the center of the space, is the only room enclosed completely by walls. We can walk a complete circle around it, passing through a living/bedroom, dining/workroom, kitchen, and our son’s room. The ability to move continuously without being stopped by dead-end rooms provides a sense of living in a larger space. A certain amount of privacy has been traded for an enlarged sense of space and an arrangement that allows us to feel separate when needed.

The walls in the exhibition are arranged so that they shield but do not fully enclose. They are made from layers of Homasote (another fiberboard), laid flat (in a stack 4 feet wide, 12 feet long, and 6 feet high), glued together, and cut to yield various functional shapes. For reasons of weight, economy, and order, certain layers are systematically skipped. Vertical



cuts reveal these voids as penetrations through the walls. The Homasote produces a velvet striated texture that, while unassuming, is at the same time sensual. The thickness and weight of the walls allows them to be self-supporting. A series of vertical cuts produced the furniture. We searched for an economy of means and material. One cut produced two chairs. There is no waste. The chairs are small and close to the floor. They allow the feet to be planted firmly. Their height corresponds to the height of the table. Seemingly unlimited unexplored possibilities exist within this material. We have used and layered Homasote in a number of ways, but we have just begun to "mine" this solid stack.

7,8,9 Table/ Bed/Screen

At home, our bed is also our couch. We believe that furniture does not necessarily need to be specialized into single-use objects. The Dutch have "bed stedes." They serve as storage for the bed as well as for bedding. They also may function as bedrooms. In earlier times, the Chinese had bed-heaters: bedding was placed over thick earthen ovens for warmth.

It is a luxury to have a long empty table. If such a table were low enough, one could sleep on it. In envisioning a new studio for ourselves, ideally we would make a very long, low bed-table. The largest piece of standard inexpensive lumber we could locate was 16 feet long, 2 feet wide, and 3/4 of an inch thick glued up pine, often used for shelving in closets.



Two boards, joined together by clear pine ribs and a perforated hardboard diaphragm, are supported by Homasote bases to provide a table long enough to eat at, draw on, talk over, and sleep on. These same structures turned on edge and hinged may be used to make screens, doors, and partitions.

10 Rug

We have worked for a number of years with the V'Soske company on the design of hand-tufted rugs. Incredibly refined, they are also very expensive. We always have been fascinated with the backs of these and with the surface of old rugs where layers have been worn away to reveal the backing. The layers of latex adhered to an open gridded scrim over canvas, both sturdy and beautiful, suggest other applications.

For this project we have worked with V'Soske to develop a rug that is really the back of a conventional rug. Certain areas are still hand-tufted to provide markings that allude to specific uses, and notations that suggest boundaries: a place to sit (blue); a place to step out of bed (red); the beginning of a path (the rocks); and the entry to the quiet area (the green garden). The areas of tufting are few. They are there to provide a map. The field remains the empty open space of the untufted canvas. We hope that V'Soske may one day make inexpensive rugs in this way.



The suburban model is seen at the end of an expanded foam wall.

These are the interim results of our research. By no means have we come to definitive conclusions. The search has been frustrating and inspiring. We believe that we have found ways to use materials that uncover aesthetic and functional possibilities. In using inexpensive materials, great care must be taken in putting them together. Consequently, economy of materials was not quite balanced by economy of construction methods. We have not produced low-cost housing, but we have approached the design of a house that reflects the life and values with which we choose to live. We have used this opportunity to probe our architectural future.

Tod Williams and Billie Tsien