Homespun: A Full Scale Sketch

WILL WITTIG
University of Detroit Mercy

Architecture's Medium

The product of an architect's activity is often limited to illustrations that attempt to simulate a phenomenological condition, and graphic instructions that are meant to lead to the realization of the imagined condition. Too often these modes of representation rather than the actual materiality of the constructed environment are thought of as the architect's medium. However, our medium is not lines of graphite or data, nor is it intellectual constructs. Our medium is the actual physical stuff of building: the thirst of stones along the path; the smooth cheek of a wood doorframe; and the weight of the ridge beam. If we expect our work to convey a sense of the poetic, then this must somehow be present in the actual thing itself in order to be felt by the inhabitants of our work. However, it seems unlikely that we will reach this goal if our process fails to engage the phenomenological experience during design. We expect our work to be brought to life by inhabitation; by the engagement with and the interpretation of the built environment by inhabitants. Ultimately, this is how our work is understood, so perhaps it is necessary for the design process to simulate this form of interaction. If the designer were able to make "sketches" at full-scale, prior to conceiving of the overall design, perhaps she could assume the role of the inhabitant. This would not only allow for testing of material and assembly possibilities, but would also allow the actual physical presence of the work to speak for itself as part of the process of conception. Rather than beginning the design process with 'plans' the project illustrated here began with a series of speculative full-scale constructions. Although these sketches were realized at full scale, they are not meant to be representational of a final product; they are not construction mock-ups, nor are they simply the unedited results of a material testing process. Instead they are meant to serve the same function as a sketch: a moment in a progressive speculative process leading towards a more developed resolution. In this case, because of their one-to-one relationship to the viewer, they were also thought of as finished products that could be engaged without any frame of reference. It is hoped that this interaction may be analogous to the experience of an actual building in a way that one's interaction with a model or other form of representation could never be. Certain forms of understanding that are only revealed by a real physical manifestation might then inform the design process, connecting design to artifact. At its core, the work illustrated here is intended to question the nature of the process of speculation. The hypothesis is that the actual stuff of building, when used as a means of exploring an idea, can be treated as a sketching medium that may serve to better anticipate the inhabited environment.

Homespun

The vehicle for this exploration is a speculative project that seeks to develop a series of sustainable house prototypes. The design of each prototype begins with a specific material concept that combines the recycling of everyday materials with various natural ("passive") design techniques. The houses will eventually be designed based on the insight gained from these initial full scale sketches. The ambition of this first step was to develop a conceptual foundation for each house. These material explorations were meant to serve as a means of uncovering what each house wants to become based on a full-scale manifestation. The hope is that each installation is legible as a complete artifact

that may be engaged without the necessity of a frame of reference or any consideration of a life outside the gallery. Each is also, at least from the author's perspective, an incomplete sketch that suggests a series of additional iterations leading to the design of a complete house.

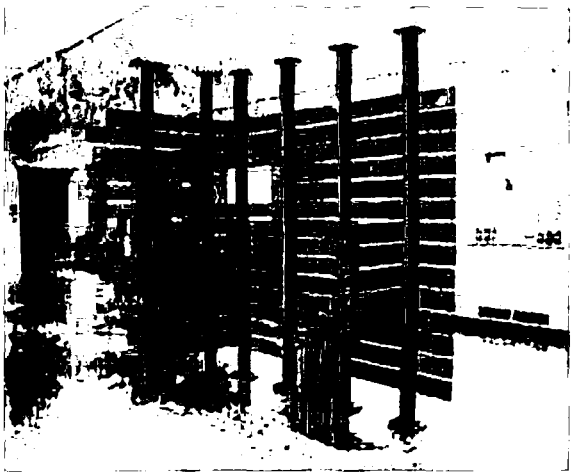

Figure 1. Plankhouse Interior

Plankhouse

This piece was done in collaboration with a non-profit building deconstruction company, The Architectural Salvage Warehouse of Detroit, which donated the material as well as the harvesting labor. The term 'de-construction' is not used here accidentally, as the buildings are literally de-constructed in a manner that is essentially the reverse of the sequential process used to construct a building. Using this method, up to ninety percent of all the materials in a building can be recycled for re-use. The design of the piece was inspired by the wall sheathing of homes built in the early part of the 20th Century. When a home from this era begins to loose its cladding, a layer of 1 x 6 plank sheathing is often revealed. If one were to recycle this lumber, it could become the exterior finish material if the wall was detailed as a rain screen. (In this case the floor structure and sub-flooring were used in a similar manner.) The openings in the wall are meant to suggest opportunities that are presented by the plank detail such as integral shelving and window seats. In considering the future development of the house, the design hopes to allude to the concept of a quilt or a patchwork. The idea is that the use of recycled materials would be celebrated in the design of the house so that its previous life could be revealed. In this case, for example, although the fragment was made from a very limited palette of materials, care was taken to ensure that the diagonal marks left on the planks by the floor joist were preserved in the finishing process.

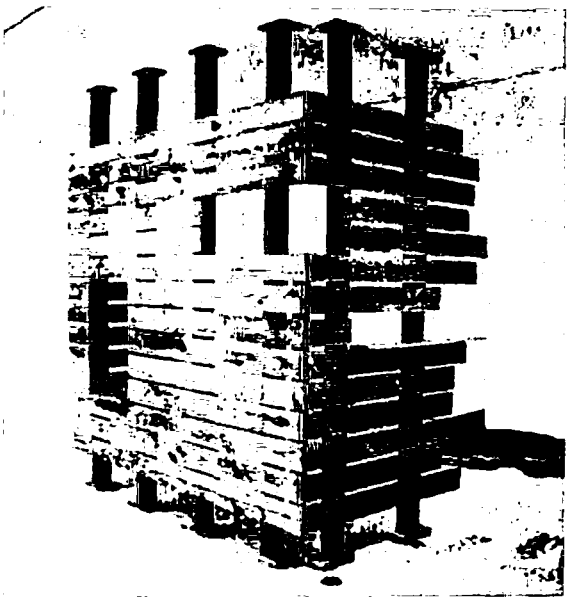

Figure 2. Plankhouse Exterior

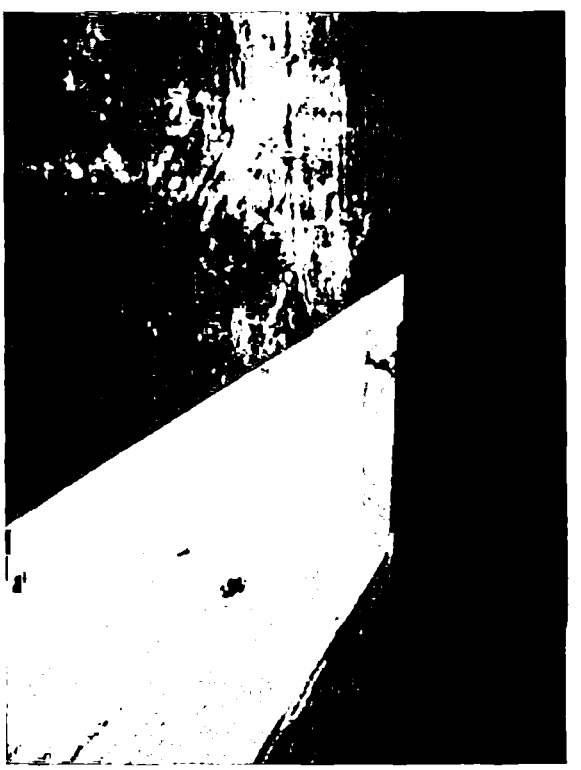

Figure 3. Plankhouse Detail

Paperhouse

This piece is intended to suggest that a house could be constructed out of products that are made from paper, paper derivatives, and elements that are accessory to the paper industry. The piece was also influenced by the vernacular tradition of placing newspapers in the walls and floors to distract evil spirits who presumably will never finish reading all the text as they attempt to enter the house. From many ideas that were considered initially, the installation focuses on one very simple idea; aluminum plates that are used to print the daily newspaper could be directly reused as a cladding material for the house. The plates are installed using the existing holes and crimped edges that hold the plates in the printing press. Newspapers sealed with polyurethane serve as a kind of "peasant's glass," and continue the uninterrupted skin of text. Recycled newspaper in the form of Homasoate is used for the structure of the wall fragment, although it has not been developed as a legitimate structure for the house. The prototype uses thirty plates which represents less than one day's worth of printing for a typical city newspaper. The average single family house, which has approximately 1,950 square feet of skin, would require 1,181 plates or roughly three weeks worth of plates.

Figure 4. Paperhouse Exterior

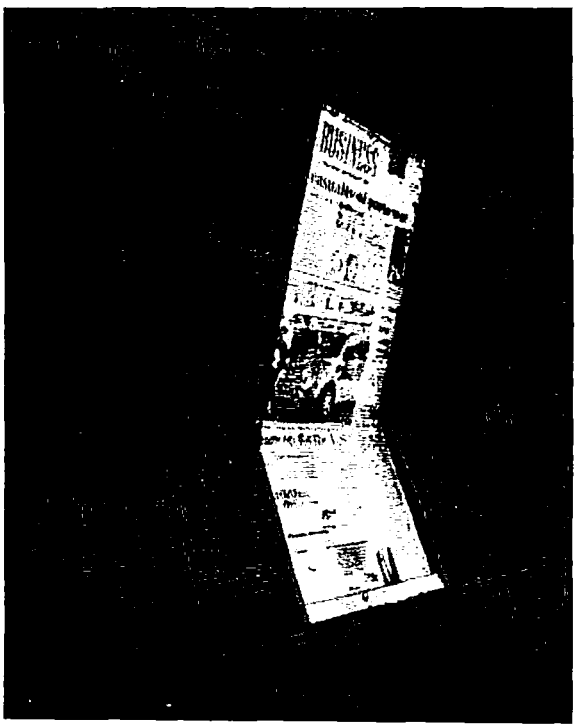

Figure 5. Paperhouse Detail

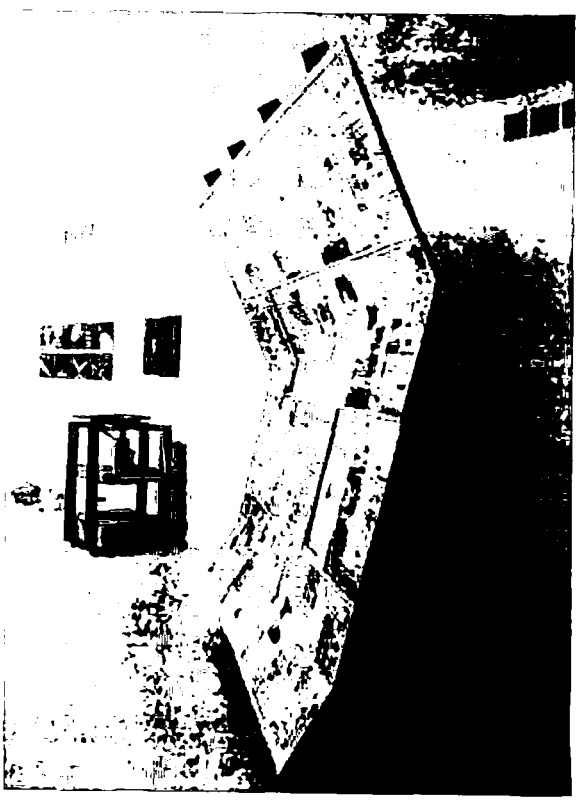

Figure 6: Paperhouse Side View

Waterhouse

This installation was inspired by the vernacular tradition of including bottles in masonry walls to allow for some measure of translucency. If the bottles were filled with water, this practice could be combined with the phenomena of thermal mass to create a wall that could store the heat of the sun and create a fantastic quality of light. Wine bottles were selected for the container system because they are not typically recycled. In testing the stacking of the bottles, it was discovered that some bottles that appear to be straight actually taper slightly from the shoulder to the base. This fact suggested that the stack of bottles could be curved in plan. Not all bottles have this ideal shape, but testing determined that with a random stacking a gentle radius was created, and mock-ups were used to determine the precise curvature of the wall. The steel frame configuration was also derived from the natural sixty degree stacking pattern of the bottles. The gauge of the steel armature could be increased so that it could also serve as the structure for the house, which was implied by the joist elements in the installation. The prototype has a capacity of 832 bottles. In a properly designed house, this would provide enough thermal capacity to stabilize the temperature for approximately 210 square feet of living space.

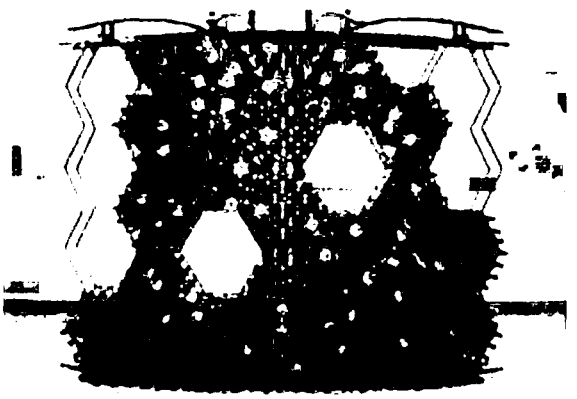

Figure 7: Waterhouse: Exterior

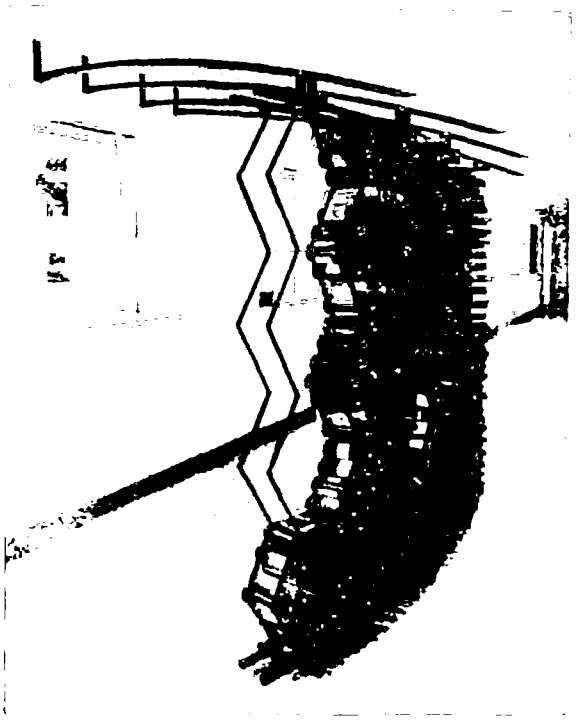

Figure 8: Waterhouse: Side View

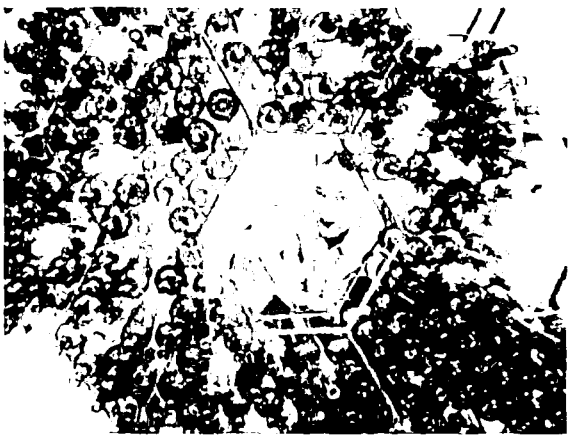

Figure 9: Waterhouse Detail

Acknowledgements

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