Darren Peterson

Architectural Design Thesis
Fall/Spring Semester 1991
Department of Architecture
College of Architecture and Planning
Ball State University

Recycling Architecture
A study of an everchanging society and its architecture

Thesis committee

Professor Art Schaller
Design studio professor

Professor Rod Underwood
Architecture professor

Professor Kenton Hall
Thesis committee member
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Abstract

An ever-changing society creates the need for new facilities. Instead of burying present buildings and wasting precious and disappearing natural resources, we, as environmentally conscious people, should find ways to recycle and reuse already produced building materials, even if the building itself is lost.

I propose to take an abandoned site and theoretically make it a useful area once again with limited new resources. The first facility on the site would be a research facility for the examination of the site and detailed accounting of its current resources. The facility would, like its research, take materials as much as possible from the site for its construction. Slowly, the building would be transformed into a design facility, then a construction workshop and finally a useful and permanent piece to the site; a community workshop. The facility would transform with the site and be a direct reflection of the research and construction being performed with the site's resources.

The intention of this thesis is not to invent technology for recycling building resources but to explore the character, quality and approach to design of recycled architecture and the physical product generated by this thesis, a community workshop, is not nearly as important as the process being explored. This process of architecture directed toward a sustainable future is, in fact, the product being explored by this exercise.
Introduction

Today's society is changing faster than architects or architecture is able to predict. Many buildings are simply destroyed because of the inflexibility of the building. Even if the building itself is lost, there is no excuse for the loss of its material resources. The long term cost of saving the environment cannot be outweighed by the short term benefits of development. With the current thrust of environmental concerns, any retarding of the natural resource depletion has to be a positive step for a sustainable future. Instead of preparing ourselves for the dangerous environment we are creating, we should stop making it dangerous with our mismanagement of resources. The more adaptable a building's components are, the less likely the building and its materials, in any form, are to become obsolete.

A site in Muncie, Indiana has been chosen as a result of the amount of site data gathering involved and the necessity to be easily accessible. The site will be the Meadows Shopping area, which is not completely abandoned but is slowly becoming obsolete with the Mall development, a fate facing many Indiana cities. I will assume all climate conditions inherent to this portion of the country.

The first persons on the site will be a research team to examine the site and compile a detailed list of the resources. The team, like its research, will take materials primarily from the site for its facility. At this point in the process, the individuals will draw directly and literally from the site using limited equipment and large portions of existing facilities. As the pallet of resources is understood and a point to begin construction is determined, the team will be expanded to include a material extraction/construction crew and designers. Simultaneously, as the site begins to evolve, so does the facility. With the addition of better equipment by the extraction/construction crew and a better sense of space by the designers, the larger team will develop their space of work and living. The site, team and facility will continue to grow
and evolve reflecting the work being carried out. Ultimately, as groups or individuals are not needed, their space of work and living will be disassembled, recycled or altered and added to the site. Finally, upon completion of the site work, the facility will be completely used in the work that has been executed.

The program for this facility will be constantly changing. For example, the initial research team and its facility requirements will be disassembled or transformed after their work is done. However, a few items will remain constant throughout the process and these will be the core of the program.

Entry/Studio
This will be the first building encountered by the facility user. It is important that this building make the connection between the what the user knows and is coming from to what is proposed by this thesis.

Design area
Open to everyone to freely and openly discuss ideas about projects. The openness will encourage constant and overlapping exchange of ideas between different disciplines. This area will be the heart of the creative process and the facility.

Storage
This space will house all extracted materials before transformation. This space will become important as source of raw potential. This will also be a space of quiet contemplation about materials and their possible uses.

Workshop
Although housing different trades at different times, the character of the shop will not change. The shop will encourage material experimentation and will include both interior and exterior applications.
Summary

Today's society is changing faster than architects are able to predict. Many buildings are destroyed simply because of inflexibility, but even if the building itself is lost there is no excuse for the loss of its natural resources. The long term cost of saving the environment can not be out-weighed by the short term benefits of development. With the current thrust of environmental concerns, any retarding of the natural resource depletion will be a positive step for a sustainable future. Financial mobility is turning permanency in architecture into a thing of the past. The ever-changing needs and whims of an affluent materialistic society has created a short life span for our built environment. An architect must recognize this constant change and prepare for it in the design of architecture. The more adaptable a building's components are the less likely the building and its materials, in any form, would become obsolete.

The environmental benefits proposed by this project would be the slowing of natural resource depletion. I do not wish to stop progress but simply to present one idea to prevent building practices from destroying humankind. Instead of preparing ourselves for the dangerous environment we are creating, we should stop making it dangerous with our mismanagement of resources.

When examining the development and character of the buildings proposed, the observer must remember that this very "hands on" approach to architecture was explored in the classroom. The final results, when executing this method of construction would create a very different solution than the one presented in this book. The character would be more in line with that of the users of the workshop rather than that of this designer.
Bibliography


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To begin the organization of the site, I divided those parts of the workshop that would be consistently on the site (in one form or another) and those things that would come and go from the process of building. Those things that remained on the site were those established in the program: the entry/studio, design area, storage and the workshop. The placement of these pieces was based on the users level of development of their project. A person moved farther into the site and farther from the city depending on whether the project was in the verbal, mock-up or construction phase. The three studies that follow are those things that are moving on off and around the site.
The first scheme involved the interaction of people on the site. The entry points to the site are at certain points to the city and the paths allow people with different skills to go to the area that are best suited for them. The organization reflects the randomness involved in the creative process. The site does not give a linear set of steps to the workshop but allows the user to pick a different course each time the project is developed.
The second scheme reflects the way a material would be used on the site. This pattern reflects the city that the materials come from and will return to. It is a much more order system and reflects controlled material sorting, cleaning, categorizing, storing, reclaiming and removal. The materials, like the people of the scheme before, have certain stages, but these stages are linear and ordered.
The third scheme reflects the site. The building currently on the river seen in the first two schemes. The buildings would be taken apart and used as they approach the main path to the river. They would then, in pieces, move to the workspace on the river.
In the final site plan, all three schemes would need to be used together to make the site work. The three constants are located in sequence, from the beginning, to order the site as the other three moving things shape the site.
The first building on the site would be the entry/studio. This would house the work of the workshop director and be the first personal contact people would have with the facilities. This building uses industrial framing with parts of houses as infill. The building is to be the transition between what people expect as a building and what a building can be recycled into.
The second building is the design area. This building starts to reinterpret the construction techniques of certain materials and also breaks further from tradition and begins to express the character of recycled architecture. It is two equal spaces for 2D and 3D design, suspended in the air to view the sites resources and to not violate the site physically.
The third building is the tool storage area. The exterior skin is translucent plastic and reflects the character of recycling the site in a more temporary way. The skin implies that the building can be taken apart at any time and fairly easily. The structural strategy is similar to the other two, with a central set of columns cantilevering two equal volumes.