Modular constructions: a written documentation

Susan Clellen

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MODULAR CONSTRUCTIONS: A Written Documentation

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THESIS STATEMENT

I intend to create architectural units employing the principles of modular construction. Modular units combined with or without surface embellishments will be incorporated to define specific spaces for living needs. The pieces will facilitate flexibility in designing a variety of environmental situations. Installations will reflect conceptual, sculptural and functional considerations for the environment. Materials may include clay, wood, and concrete in combination or alone.
My Thesis Exhibit consisted of five cast concrete sculptural pieces. This body of work represents various furniture motifs. The pieces ranged in size from three feet to six feet in length and two feet to four feet in height. Animated shapes varied in configuration and proportion. Pastels and off whites enhanced the heavily textured surfaces of cast relief and stucco. (See slides 4 - 11).
This paper will describe the progression of my work at Rochester Institute of Technology and how my Thesis Show evolved from my Thesis Statement. Although my Thesis Show is the culmination of my studies at R.I.T., each phase of the progression will be discussed as a significant body of work. Each phase was an exploration of the issues presented in my Thesis Statement.

In my first attempt to employ an architectural medium, I designed and produced 50 large handmade bricks. Units were 20"x10"x5" hollow slab constructions. I used a Georgia stoneware and Missouri fireclay combination to produce a rich brick red clay body with fireclay coils for inlaid patterns. The bricks were free-standing, self-supporting and stackable.

I chose to use the surface of the units to explore a variety of inlaid grid patterns. Ceramic tiles and wall murals have
traditionally been embellished in repetitious motifs. The unit and its surface decorations have worked together to maintain visual uniformity in their functional capacity. In my exploration, each individual unit represented a different pattern: diagonal, perpendicular, and random. One to two inch coils of contrasting clay were inlayed on the outside surfaces of the brick. Patterns remained similar in scale to maintain my own form of continuity (figure 1, slides 1 - 2).

As a child, I played with wooden building blocks. Hours on end were spent tediously creating elaborate and simple constructions. At the end of each day one of my parents would make sure I gathered up the blocks and tossed them into the toy chest. Permanence was never to be associated with anything made from blocks. Drawings that I made, however, managed to be saved for at least a few years -- from pad, to refrigerator, to storage. At an early age we learn that blocks, "Leggos" and "Lincoln Logs" are merely educational tools. But must a
Figure 1. Handmade Brick
modular medium be valid only when it is functional and permanent? At what point does "play" end and "work" begin?\textsuperscript{1,2}

As an Artist, I have used a modular construction medium to explore space on a grand scale. It was much easier to arrange small components than to wrestle with larger pieces. It was a wonderful revelation to use components to build structures that were larger than myself. Until this time, I had limited the scale of my work based on the ability to maneuver pieces in the studio and into the kiln.

The concept of plasticity was ultimately the reason for selecting a modular medium in which to work. I was intrigued with the fact that until mortar or any other congealing medium is introduced, the construction is infinite. There is no limit to the variations or time involved in setting up an installation. As creator and builder, I found the process of change becoming an important element of the work. A very fluid body of work emerged challenging the traditional notions of what "building"
is and what a "brick" can be.

My first experience in building with the handmade brick began with the construction of a series of walls. By isolating the wall from other architectural components, it was easier for me to focus on and define key issues. A wall is essentially a plane that runs perpendicular to the ground and divides space into two categories: this side and that side. Walls are constructed to obstruct or contain activity -- a boundary passively imposing limitations.

The fifty bricks I produced allowed me to build a structure roughly six feet by eight feet or forty-eight square feet. I constructed walls using a variety of stacking techniques and arrangements. Individual bricks were selected and organized according to their inlayed patterns. By controlling the stacking order and arrangement of the bricks, I was able to stimulate or highlight visual activity within an area of the wall. The exaggerated size of the brick unit facilitated easy
construction, reconstruction and alteration of the installations. This mobile quality posed an interesting contrast to the traditional permanence of the brick medium.

The wall installations evolved into architectural vignettes: floors, stairs and enclosures. The vignettes served as scrutinizing studies to search for the foundations of architecture...dissected, distilled, magnified: The essence...the root...the symbol.

Searching for these symbols lead me to consider primitive and prehistoric sites as references for my work. I was interested in the purest and simplest constructions. Examples that demonstrated the basic components (wall, floor, roof) were Trilithon, Dolman, Menhir, Cromlech, Taula and Stonehenge. Their magnified scale emphasized the simplicity of the components (figure 2.).

These structures were built with modular units. Stone,
Figure 2. Modular Structures

Menhir
Alignment

Trilathon
Dolman

Taula
Stonehenge
first employed in its raw state, was rolled, dragged, cut, stacked and arranged. Free standing stone monoliths or "Menhir" were purposefully placed alone or in groupings to denote space. The single unit marked a spot. Several units marked an area. A row of monoliths formed an alignment. An alignment was also used to form an enclosure such as a circle. Monoliths in combination with lintels created an enclosed structure called "Trilathons". The Trilathon, in turn, is the unit and stepping stone for more complex architecture. The modular unit has evolved as the essence of building, and these simple constructions have become the essence of architecture.

The human desire to create and build lies testimony in these ancient rocks. These pure and simple forms elicited in me an instinctual drive to build. The modular unit was the tool for my exploration of a building process and an architectural vocabulary.
Upon the completion of the handmade brick project, I began experimenting with a pallet of building bricks. The absence of mortar from the installation process enabled me to work through many ideas and configurations. Documentation was equally as spontaneous. Snapshots, drawings, and memory preserved these installations as performances (figures 3 - 5, slide 4.).

I was interested in pushing the medium to its physical limitations in height, length, random construction and integration of cement and wood elements. A scissors jack was used to arch and distort walls. Cement shapes were built into constructions like alien material. Due to space confinements, I often worked at night building sprawling installations that obstructed the entire handbuilding studio. Preciousness and permanence were not issues at hand. Once again, like playing with children's blocks, I was able to explore the plasticity of the unit and the spontenaiity of building.
Figure 4. Wall Study
Figure 5. Wall Study
At this point I wanted to expand upon the nature of the unit as sculpture. Images of something animated, plastic and mobile kept coming to mind. I wanted to develop a multifaceted module that would activate the space it occupies. Previous explorations with cast concrete led me to determine that the medium had potential to expand this body of work. Concrete, like brick is a common construction material. This air cured ceramic medium enabled me to explore the potential of liquid cast form. In transition from brick to concrete, I discovered that the medium would allow me to place greater emphasis on form.

The connection to architecture remained, but in more poetic terms. The forms inferred "something" architectural: steps, arches, post and lintel, zig-zags and repetitious units. The shapes and components took on gravity defying positions: animated limbs, cantilevered in space... (figures 6 - 9).
Figure 6. Cantilevered Limbs
Figure 7. Arches
Figure 8. Post and Lintel
Figure 9. Arch
During this phase I began to focus on the potential of surface embellishment. I applied coarse stucco to cement forms and painted them in shades of subtle pastels. Stucco is used in architecture as an applied decorative texture. Interior and exterior walls are often "iced" with this medium, cracks and joints are hidden beneath its defense coat. The gestural motifs of hand application are often preserved as part of the congealed decorative finish. (I have memories of my grandparents' guest room, the walls and ceilings were like turbulent seas of stucco waves that swirled and surged into violent points.) The textured surfaces of my pieces created a new dimension. They transformed dense concrete shapes into lively architectonic motifs.

In preparation for my thesis show I continued to use modular construction to solidify my conceptual, sculptural and functional considerations for the environment. My exploration
was concerned with the use of intimate living spaces. Industrial design and architecture have imposed rigid structures for the domestic environments and for the objects with which we live. Furniture has evolved as a product of architecture. Standardization of a "room" has brought about homogeneous solutions to living needs. My work is in part a statement about the need for alternatives in our daily lives. We must challenge those formulas that reduce our existance to nothing more than style, function and conformity. For this reason I have chosen to focus on the expressive and emotional qualities for furniture. My choice of form, color, texture, material, mobility, and functionality are combined to address as well as generate an alternative.

Traditional living environments are saturated with passive spaces. The geometry of rooms characterize the furniture as rectangles, squares, and cubes. The negative spaces, in turn, mirror the regularity of both the furniture and the rooms.
Framed by concentric spaces and forms, a coffee table, for example, is the centerpiece of a living room, and is an example of an object that is framed by concentric spaces and shapes. The coffee table became the first subject in a series of five thesis works to address the issues of activating living space.

THE COFFEE TABLE

The Coffee Table consisted of eight separate concrete components. The table top was made up of two large 3 in. thick slabs with a combined surface area of 16 sq.ft. The six modular legs stood 14 in. high. These mobile components could be easily rearranged to distribute the slabs' weight evenly. I designed the table to be assembled in many different configurations.

The top slabs were assymetric, angular shapes with multifaceted edges. Edge to edge, the two shapes could be
combined to make new positive and negative shapes. New shapes and spaces could also be generated by playing these components off the environment. (Figure 10).

The surface of the table tops alluded to an aerial view of a plastic landscape. Glossy pastel lavender and blue paint glazed the entire work. Colors delineated coarse and smooth areas. Erroded stucco terrains boldly cut the slabs into secondary shapes. (Slide 4).

THE TEA TABLE AND VASE

The Tea Table and Vase was a small variation of The Coffee Table, but with a new connection to utility. The two modular table tops became the setting for a vase. The familiar image of pottery on tables is often associated with decoration or utility. The vase became the symbol of this duality: art on a pedestal, pot on a table, centerpiece on a table.
Figure 10. Top View of Table
The Tea Table and Vase was made up of two (18 in. x 24 in. x 3 in.) cast concrete slabs, each of which were suspended on single 14 in. column legs. The configurations of the modular tops were reminiscent of angular jigsaw puzzle pieces or chunks of floating ice. These two multifaceted shapes were designed to be placed side by side in a variety of arrangements. The vase and table surfaces were cast with heavy relief and painted pale blue. Deep sawtooth ridges cut deeply across both table tops and along the side of the vase. Bright yellow earthworm cavities randomly travelled across the table surfaces and on top of the vase. (Slides 5 - 6).

THE TWIN TABLES

The Twin Tables were made up of two elongated triangular slabs (5 ft. x 3 ft.) which were elevated on six stout conical shaped legs (30 in. x 6 in.). The modular tops could be
installed as two separate tables or together in a variety of configurations. Three removable vases were situated on the table tops. The vases and table components were made of cast concrete and textured with cast relief and stucco. The entire piece was painted in two shapes of white: cool and warm.

Upon closer examination, The Twin Tables revealed rich tactile details. I applied a heavy stucco coating over the entire piece. Some surfaces were rough and sharp in texture. Other areas were smooth and soft resembling eroded riverbed shale. Finger marks smudged through the stucco to make scalloped ridges. The cast relief of the vases, table tops and legs were accentuated with the textured glaze.

Reminiscent of a dining table, The Twin Tables were the most narrative works in my show. I was not challenged by maintaining the details of the functional format, but by expressing how furnishings can play a more active role in our environment. Here again I chose to incorporate the vase form
as a symbol for utility and decoration. The casual stance and location of the three vases did not speak about formal place settings or centerpieces, but rather about day to day casual activity. (Slides 7 - 9).

THE END TABLE

The End Table was the last table in the thesis series. The table consisted of four components. Three 30 in. black cylinder legs supported a single slab table top (30 in. x 26 in. x 3 in.). The shape of the table top, like the previous tables was assymetric. The sides were jagged, smooth, and angular. Three white cylinder fragments jutted out from the joint holes on the table top. The End Table was somewhat different from the previous tables. With only one table top, it did not have the same modular capabilities as the previous tables. The
sculpture profile of the table top was designed to be experienced in the round. It was isolated and singular with no front, back, or sides.

The entire table was painted flat black. The surface of the table was embellished with a heavy coat of stucco. Finger marks congealed into squiggles across the surface and revealed the black paint underneath. The sharp points of dried stucco were both decorative and dangerous, a defense mechanism against tempted touches of seduced hands. (Slide 10).

THE BENCH

The Bench was the last piece in my study for living environments. The park bench design was an inspiration for this particular piece. The two side supports were made from cast concrete, stucco, and paint. The seat slats were cut from 3/4 in. plywood and were also finished with stucco and paint.
The seat was 18 in. high, 24 in. wide and 18 in. deep. The sides were 36 in. high and 32 in. deep.

Geometric shapes of pastel green and pink were used to quietly break up the form of the bench. The closeness in value and shade of the two colors made it difficult to distinguish one color from the other. Both color and texture were passive in comparison to the over configuration of the bench. The Bench was a playful interpretation of the typical bench. The dramatic, animated shapes were created to bring to life a place that is restful and quiet. Park benches, church pews, and waiting rooms are generally places for quiet....public places that are in between day to day activity. (Slide 11).
The process of writing my thesis has led me to realize that my thesis statement reflected only one level of meaning in my work. While the brick, brick constructions, and concrete furniture/sculptures dealt with elements of architecture and environment, the work also embodied my personal and human response to my living spaces. This conceptual and emotional level transcends the issues of process, function and permanence.
FOOTNOTES

1. J.C. Fredrich von Schiller, *On The Aesthetic Education Of Man*, (London: Macmillan & Co., 1964). p. 79. "In every condition of humanity, it is precisely play, and play alone that makes man complete. Man plays only when he is in the full sense of the word a man, and he is wholly man when he is playing."

2. T.S. Eliot, "Notes Toward A Definition Of Culture," (*Partisan Review*, no 148, 1944). Eliot believed that the separation of work from play was destructive to cultural roots.


4. *Ibid*, p. 110. "The stepping stone from the monolith to trilithon or post and lintel led man to the threshold of architectural awareness".

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BIBLIOGRAPHY


