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STRUCTURAL FORMS IN STRESS

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My thesis study deals with a fragile material, clay, in a state of physical stress. Each, compositionally arranged structure, is in the process of both displaying and resisting a like force. The materials used function as both medium and content. As content, each piece works with natural forces and strengths, and the ongoing resistance of them.
I. Clay

Clay, when fired, is a fragile material. (There have been enough pots broken to verify that statement). My work is concerned with the effect of natural forces, acting with opposing materials, upon this fragile material. The process of the ceramic's resistance to an opposing force is the content of my work.

Since I am working with the actual properties or characteristics of fired clay, I had to be conscious of all the properties and stages of clay. Traditionally, clay has borne the brunt of forces imposed upon it in the wet or plastic stage, to then be transformed into a permanent form in the fired stage. The stresses borne are real but by the time the form metamorphoses into the rock-like stage, after it is fired, the stresses visually perceived are only of historical value. The clay may have the illusion of being plastic, or of being deformed under stress, but in actuality the form is, normally, quite stable.

There is really no way of avoiding this property of transformation, because it is a natural quality inherent in the material. Just by removing clay from the ground and putting it into a kiln, it will show a record of forces imposed upon it in the wet stage, natural or otherwise.

So, to make things a little less confusing, and a bit more direct, it was determined that to best show the natural strengths and qualities of ceramics, in the fired stage, a constant modular form would best serve my needs. There were several reasons that led me to this decision; (1) a machine-like, constant form, would create a vehicle that could be used as a unit of measurement of stress, (2) to remove as much of the traditional, hand-made stress element, (3) to use modules as parts of a whole, instead of each clay piece having individual content, and (4) to use
the repetition of forms, as presence. The viewer perceives the entire work, when the first module is identified. I will go into number four in greater detail later in the paper.

To further emphasize the materialness or material qualities of ceramics, it was also decided to use unglazed clay. This decision was made due to, (1) the 50% increase in the modulus of rupture with a well fitting glaze, and (2) the natural qualities of materials were being sought.
II. Process

Stress - force either pertaining to weight or importance

Force - process of applying pressure

Process - lapse of time

Time

By this simple breakdown of key words one can probably see what I am alluding to. The process of stress, is both the addition to, and resistance of a force, within a given period of time. This would mean that structural forms in stress could be restated, possibly clearer, as structures in the process of resisting an opposing force. The process of this opposing force would be in real or current time. Therefore, the process of resistance is the desired end, and real time demands viewing work in present tense.

Traditionally, artists have dealt with process and materials in an illusory manner. The materials were subverted through the technical processes of the artist's skills. The processes and the materials are both camouflaged into an illusion determined by the artist and his technical skills. The viewer can look at a towering piece of polished marble and only see a figure, or look at a painted canvas and only see into the depths of an illusion.

My concerns are traditional in the affect that, I am interested in the problem of what my work and materials are doing. A comparative example would be an artist's concerns related to positive/negative, inside/outside, juxtaposition of forms/color, etc. What my work is doing, has been transferred directly into the material's properties, and their interaction with each other, and nature. Whereas the majority of process works, (traditional art) are residues of a completed process, my work is about a continuing process. Since the clay is under ongoing stress the physical forces
of gravity, friction, and inertia, operate continuously to maintain the piece in a state of arrested motion.

In this way, time is incorporated in my work. A quality of danger attends these particular pieces because of the weight of the opposing materials and the potential for collapse. This threat maintains for the viewer a constant awareness, not only of the physical qualities of the materials used, but those of the surrounding environment and the viewer as well.
III. Time

**Repetition - Kierkegaard**

"Since the past is lost to us and the future is only an anticipation, it is repetition alone that has the power to isolate the present."

Stress takes place in a given period of time. Since my work is physically in stress, it exists in the present tense of its viewing. Time is an important overriding aspect of the process. Time coupled with the interaction of non-permanent materials will put the work in a continuous state of change. The process of change through time is an accepted aspect of the work.

Our perception of time and the process of art parallel each other quite often. Sculpture has been made in one of two ways, either (1) a reductive method in which a shape is made by carving away from a larger block, or (2) an additive method in which a piece is constructed by the addition of parts to form a whole. The way in which we experience our past, has to be considered a reductive method: we eliminate all but the essential things we want to remember. If we were to recall everything that took place in a day, it would take a day in the remembering of it. We can, on the other hand, think of the future only by the constructive process of adding our expectations to present situations, and known facts, to be able to come up with some assumptions of the future. Now as Kierkegaard said, "repetition alone has the power to isolate the present" ..."since time, like measure, is relative, it can only be seen in relation to beginnings and endings. When the beginning and ending of an event are the same, time appears to stand still." The isolated presence of repetition affords the viewer an overall understanding of the qualities of the repeated modular form,
once the first article of repetition is perceived. This gives the impression of stopping time, which gives the work the quality of present tense.

Similarly, when one is confronted with an object that has been formed, rather than carved or constructed, it has the feeling of being created all at once. Even though we know that a piece cannot be made at once (except in the case of molded objects) it is seen as though it were. The immediacy of forming, then gives an added sense of present tense.

Since the qualities of ceramics are the content of the work, I wanted to isolate both the strengths of the clay and the weight upon it, within the presence of the viewer. I have tried to exploit both the concepts of formed objects, and repetition, with the formed clay modules within my work.
IV. Materials - medium/content

Clay is the material which is reacting to an opposing force. The opposing forces are materials which are acting with their inherent qualities, within nature. The qualities and strengths of the materials are the content of the work.

The natural qualities of materials were accented, as far as surface was concerned. It was felt that if the materials were exposed or unfinished, it would give visually a better understanding of the qualities of the materials. Examples range from the extrusions to the block of wood over the tea cups.

Another interest, was to use materials, whose qualities would be readily identifiable to the viewer. This would connect the viewer's past experiences, with the qualities of these constant materials, to the degree of stress or opposition interacting within the work. Two obvious examples of these social constants would be the teacup piece, and the work containing the pick-up truck. Although, in these two cases the role of the social constants have been reversed, the intent is the same. The tea cups are a symbol of delicateness, and fragility, where the truck is universally perceived as being a heavy vehicle.

Using the natural strengths and weaknesses of juxtaposing materials is the basis for the works. The natural characteristics of materials are sought after, instead of an idea, which uses the materials. A compositional arrangement is directed, but the materials themselves have the final say. This willingness to let the materials dictate the final outcome, adds the element of risk to both the work and artist. One cannot say for sure how the materials will ultimately react. The process of installation becomes part of the piece. If one is dealing with stress and the work collapses, that has to be accepted and
understood as the natural statement of the structure.

The materials going through the process of interacting with each other, are in a constant state of flux. Traditionally, art was conceived in the guise of a permanent art object. If one were to accept the natural deterioration of form as procedural content, then my work could exist under a semi-permanent format. But in all conscience, permanancy and objects were not being sought after, the experience of the procedure, was the desired end. Most of the art pieces were dismantled and recycled into new pieces, or back into roles in society. The desire to work with the natural qualities of materials, and the notion of recycling art, has probably been influenced by two things; (1) our current attitudes towards ecology and the environment, and (2) all the bad art objects I have made that may haunt me forever.

Remember Marcel Duchamp -

"Art is an experience, not an object."
PLATES
Plate 1.

Willow and tea cups

willow - 4' x 2' x 2'
teacups - 3"

rough, chainsawn texture
shape - simple pyramid-like
block, exhibiting natural qualities of wood, + shape
give extra feeling for weight

tea cups - approx. C/9 bisque, salvaged from old Syracuse China building, donated by Bob Schmitz.

Wallace Memorial Library Collection
Plate 2.

Hollow clay forms

truck
clay bags
5' x 15' x 6'

clay forms - ½" thick, hollow clay forms fired to C/5 red. relate to clay bags in shape.

clay bags in truck - ½ ton
used to, (1) tie clay forms with weight element,
   (2) add extra weight to stress element.

truck - (oriental art) Toy-o-ta 3,000 lbs.
On loan for show, Dorschel Toyota, Inc.
Plate 3.

Clay, maple, rope
3' x 3½' x 12'

Clay - hollow extrusions, C/5

Maple - hewn log, simple pole shape, rounded with contours of tree

Rope - functions as device for restricting clay from collapsing
Plate 4.
Clay, Poplar, Walnut, Rope
3½' x 3' x 9'
Clay - hollow clay extrusions, fired to C/5 red
Wood - hewn log (hatchet) simple pole shape, rounded with the contours of the tree
Walnut pegs - walnut used for high color contrast, (wanted them to be obvious, not hidden) used for anchoring rope
Rope - securing clay to tree
Conclusion

My approach has been to use the inherent qualities of materials, as the content for the work.

My work is minimal in the respect that it is based on the premise that the less stimulus given, the more the viewer is moved to search for the objectives of the work. The objectives of my work are concerned with what is immediately before the viewer. The meaning of the work is not the issue. The viewer has been conditioned to expect an art experience that has nothing to do with the natural world. When just the illusory meaning of an art work is questioned, the viewer misses the heart of both the artist's goals and the work itself. If art is approached with the question -- what is it doing rather than what does it mean; the artist's goals and objectives, the criteria of the work as art, and the meaning, all become self-evident.
BIBLIOGRAPHY


EXHIBITION CATALOG

Clay (Extrusions + Bag Forms)

- clay body -
  2 parts "PBX", 1 part "MO.", and
  2 parts Grog, all A.P. Green

- temp. range -
  fired to C/5 reduction,
  C/5 to C/10 1% shrinkage dif., no
  color change.

- once fired -
  cut down on handling of material,
  no glazes used.

- firing procedures -
  250°F critical point in firing,
  long pre-heating period, go
  through this range slowly, until
  paper ignites, 45°F.

- forming processes -
  Bags -
  clay was draped around bags
  containing sawdust, when
  clay was set up enough, saw-
  dust was drained.

  Extrusions -
  two adaptors were made for
  the pug mill in the shop.
  (A) with interchangeable
  templates to get varying
  shapes, and (B) one for maxi-
  mum diameter pug extrusion,
  pole forms. (illustration on
  pg. 18 & 19).
The Movement of Clay is right to left.
- Clay Extrusions -
- 3½" Diameter
- 2" Bore
- 3/4" Clay Wall
Stress Tests (Tinius Olsen Universal Machine)
- Bag Forms -
  two sizes tested
  (A) 8" x 18"
  (B) 15" x 30"
  (A) was taken up to capacity weight limit, and began to collapse at 2,650 lbs. total. (The clay form was supported top and bottom, to insure equal weight distribution throughout tests.)

Example (A)

(B) larger bag was to be used for different purpose. Tests were used to find capacity on smaller, localized area. Several tests were run to find working strength.

(1) Taken up to 1,000 lbs.

(2) 1st 1,000 lbs.
    2nd 1,500 lbs.
(3) (area of contact 6" sq.)
(1) 1,000 lbs.
(2) 1,500 lbs.
(3) 2,000 lbs. (for 5 min.)

Note: weight of truck appx. 4,000 lbs.,
divided by four tires 1,000 lbs.
per bag.

- Teacups - (tests done by Spode China, England)
  5 ton compression strength
  15 lbs. tensile strength