



A sculptural problem
by Billy Bowman Sage

A THESIS Submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree
of Master Of Applied Art
Montana State University
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Abstract:

A study of sculpture and the knowledge gained from the execution of sculptures In various media
provide a background for solving the problems associated with the exploration of a pure sculptural
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illustrations of the sculptures produced are included.

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BILLY B. SAGE

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at

Montana State College

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Colored Slides

Following page 27

Completed Section at the Site	Slide #1
Completed Model	Slide #2
Model and Section	Slide #3

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Acknowledgements

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Abstract

A study of sculpture and the knowledge gained from the execution of sculptures in various media provide a background for solving the problems associated with the exploration of a pure sculptural problem.

The experiences gained in executing sculptures in stone, plaster, wire, steel and clay are related and illustrations of the sculptures produced are included.

Problems encountered and solved in designing and executing a model and a section of the sculpture in full scale for the selected site are detailed. Significant steps are illustrated by photographs and slides.

Sculpture

Sculpture is one of man's earliest creative accomplishments. Figures, usually female representations, are found in strata dating to middle Aurignacian times of about 70,000 B.C. Through the ages man has continued to express himself by the modeling, carving, or building of forms in three dimensions. Some eras have produced prodigious quantities of sculpture while other periods have seen very little. Nevertheless all cultures seem to have produced some type of sculptural expression.

Motives for sculpture have probably changed numberless times during its long existence. The first sculptures were, according to some anthropologists, made for magic or fertility reasons. Since that time various uses can be given-- decoration of utilitarian objects, enrichment of architecture and as ritual objects. Probably the greatest reason is none of these but that which guides many contemporary sculptors and some of their predecessors--the creation of a work of art which has its own reason for being as an expression of the artist. Whether this is accomplished by forms which are beautiful to the eye or not makes little difference if the piece has a life of its own and can stand alone without using imitation of nature as a crutch. This is not meant to exclude realistic sculpture from the acceptable but such would be the case were not the artist to give it more than

a clever surface modeling and likeness. He must strive to put into any sculpture something of the aliveness of the portrayed object; to give it a meaning in itself apart from representational accuracy.

Materials used in sculpture now are more varied than at any other time. The artist of prehistory had stone, bone, wood, and clay. Metals for casting and the casting processes were discovered later and today we have the use of even more materials with more types of metals, plastics, and concrete. Nonetheless sculptors of stone, wood, and clay work in much the same manner as those of earlier eras, carving wood and stone with hammer and chisel, modeling clay with hands and sticks. The use of pneumatic tools and hardened steel bits may speed up the process for today's artist but sculpture of the carving type remains essentially the same. Welding with torches and gases is one of the few techniques which the ancients did not know. Because it is relatively new and virtually an unexplored field, more and more creative sculptors are turning to it to find new means of expression and to produce new works in a new vein.

Media and Experience

Before work was begun on the problem of a sculptural form for a particular setting; stone, wire, plaster, clay, and steel sculptures were executed to become familiar with the characteristics and manner of working each material. A material such as limestone which is of a great weight in a small mass and may be very hard, cannot be worked, and should not be worked as the softer alabaster or as clay. Plaster cannot be formed in the same fashion as steel or wire. It was found that each material must be handled with consideration for its special characteristics and that one material could not be easily imitated by another and still retain its own identity. Carving of stone retained the massive quality of the block while modeling in clay gave quite different effects. Work in sheet steel cut, shaped by hammering and then welded together could not imitate wood, stone, or clay by the very fact that the processes employed were different. These experiences lead to the belief that a sculptor must try to be true to his media, working each with a sympathy for its unique characteristics.

Works in three types of stone were executed. One of these was "Madonna and Child" (Figure 1, page 8) carved from a fairly soft, pink-veined Wyoming alabaster. Another was a non-objective, "Space Modulator" (Figure 2, page 8) done in hard building limestone. The third was "Torso"



Figure 1
Madonna and Child



Figure 2
Space Modulator



Figure 3
Torso

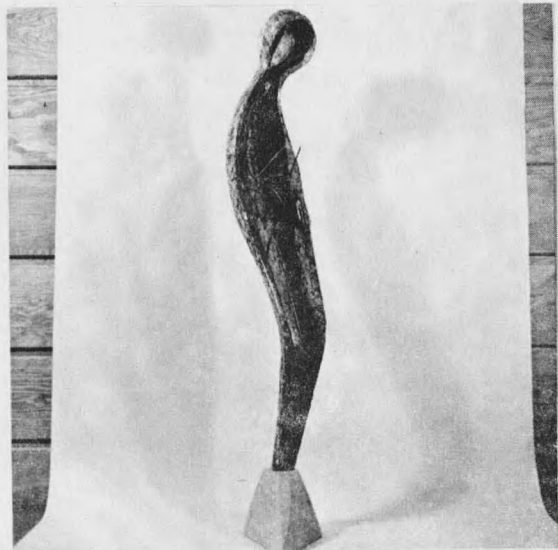


Figure 4
Madonna

(Figure 3, page 8) done in soapstone. All were carved directly in the stone with references made only occasionally to sketches. This method allowed the stone to retain its identity as stone. The softer stones were more amenable to the soft flowing curves and planes and rounded masses which the subjects needed. The harder stone offered much more resistance to cutting and had to be worked on a more massive scale retaining the blocky forms and textures and eliminating delicate detail.

A plaster, "Madonna" (Figure 4, page 8), was done with the direct application of plaster over a wire and screen foundation. This was found to be an excellent way to build up a sculpture of fair size with moderate weight. Wet plaster worked in this manner to some extent exhibits the plastic quality of clay yet can be carved when it has hardened. Another feature which it has is that it can be easily colored with various pigments to give any desired effect, and it may be textured in a variety of ways.

A "Spatial Deliniator" (Figure 5, page 10) of brass rod such as the one executed might be called a three dimensional line drawing in space and could only be done in a material which has great tensile strength. Attempts at such a composition in stone or wood would be impossible.

The various ceramic sculptures take advantage of the plasticity and easy manipulability of a clay body. The

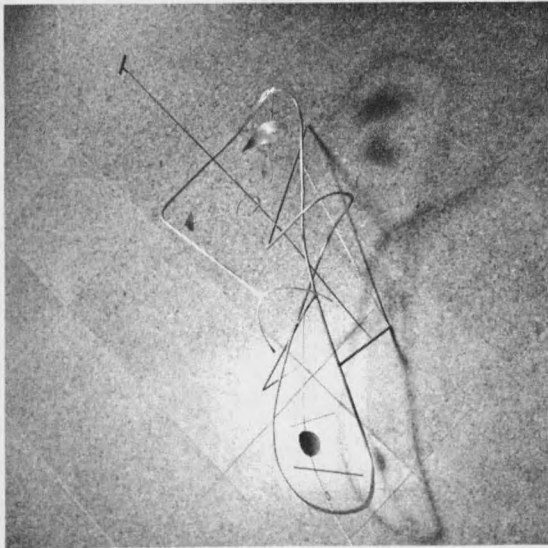


Figure 5
Spatial Deliniator

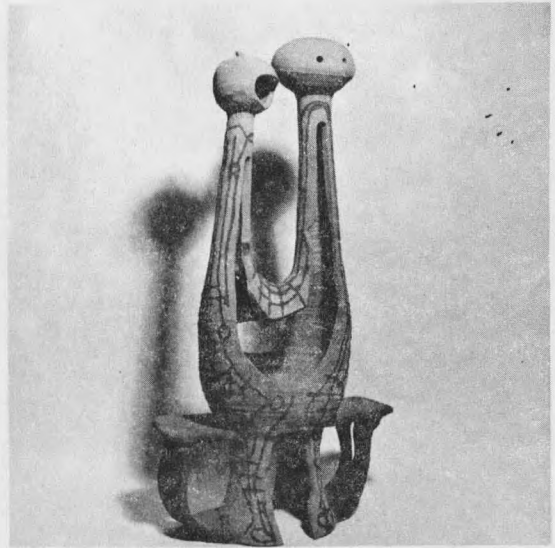


Figure 6
Garden Figures



Figure 7
Fish

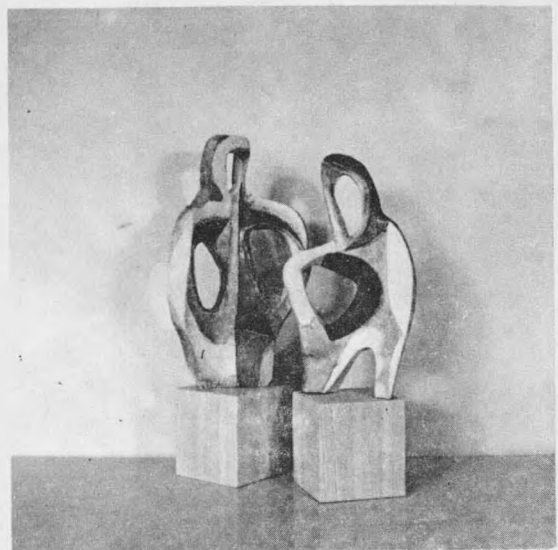


Figure 8
Figures

"Garden Figures" (Figure 6, page 10) comprise several pieces which were thrown on a potter's wheel and joined while wet. The parts retain the characteristic finger marks of the potter. "Fish" (Figure 7, page 10) and "Figures" (Figure 8, page 10) also show the pliability of soft ceramic materials and use glazes for color or accent.

The two works in steel, "Children Screen" (Figure 9, page 16) and "Stringed Figure" (Figure 10, page 16), are exercises in using welded steel in planes only, and in executing a sculpture employing full forms of shaped and welded steel. In "Children Screen", the steel was cut, shaped by hammering, and the pieces welded together to form the silhouette of four figures. The shaping or bending of the pieces was done to give additional planes for added surface play of light. It was brazed with brass rod to add color and interest. "Stringed Figure", in the use of its full bodied forms, acquires a more organic shape as if it were growing out from within while the use of the strings laced into it creates interesting areas of enclosed space which add to the completeness of the whole.

Each of these sculptural works in the various media added to the conviction, reinforced by tradition, that a sculptor must be sympathetic to his material; he must not force it beyond its capacity and he must utilize each for its own particular qualities and select for each work that

which will best express his ideas. Beyond this the sculptor must fuse his idea into the work so that it will not have to be explained or titled to be appreciated for what it is--a sculpture, an entity in itself.

Selection of a Site

Prior to the selection of a setting for a sculptural study, several areas on the Montana State College campus were considered for their suitability to such an undertaking. The area between the driveway and the walk in front of Hapner Hall was considered, as was a small grass plot between the library and the west entrance of the Student Union Building. The interior court of Hannon Hall was also under consideration as a possible site. Each of these presented drawbacks. The first two locations would be too readily accessible to children who might attempt to climb the sculpture and be injured in a fall while the interior court of Hannon Hall was deemed too restricted from public view.

The site selected was the area adjacent to the main entrance of the Mathematics-Physics Building. It offered several distinct advantages. The design of the building was such that it seemed to invite a sculptural form in the area indicated; this area needed enhancement; it afforded some protection from the elements and from climbing children; and it contained light fixtures which could be used or altered for more efficient use at night.

The Mathematics-Physics Building is built of structural steel members and cinder block. The outer surfaces are faced with red brick and a creamy yellow ceramic tile. Window and door frames are of an aluminum alloy.

The setting for the sculpture is a niche five feet deep and twenty-eight feet wide, extending from the entrance-way to within two feet one inch of the northwest corner. Several structural pillars (two feet one inch by two feet one inch) divide the length into two eleven foot eleven inch spans. These pillars are each one foot eleven inches from the wall. The height of the niche is ten feet eight and one-half inches, from red quarry tile floor to the ceiling, which overhangs the area three feet two inches. It is on this twenty-eight foot by ten foot eight and one-half inch wall, behind the pillars, that the sculpture will be placed. All the foregoing figures were obtained by measurement and by consulting the architect's blueprints.

