


1963

# The Experimental Use of Clay in a Wall Panel

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THE EXPERIMENTAL USE OF CLAY  
IN A WALL PANEL

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A Thesis  
Presented to  
the Graduate Faculty  
Central Washington State College

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Education

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by  
Marion E. Farmer  
August 1963

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APPROVED FOR THE GRADUATE FACULTY

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## CHAPTER I

### INTRODUCTION

The word experimental suggests the method of trial and error in order to reach some desired goal. This word used in connection with the word "creativity" becomes significant in that it implies formulating a definite direction in which the experimenter intends to focus his attention upon the problem. These two words are the constructs upon which this experimental study will depend.

#### I. THE PROBLEM

Statement of the problem. The purpose of this study is to describe, explain and conclude a series of experiments in search of the creative aspects of light and shadow when applied to the concept of "light-painting" by using clay in an experimental way in a wall panel. Inventing ways to use tools which are easily available to teachers of all levels, relates this study to the ever-present problems of art education.

Limitations of the study. The creative use of light as a plastic organizer of the whole design limited the use of negative areas, the use of distracting color and glossy glaze finishes. Other factors such as size of area to be

covered, weight when finished, depth of clay tiles, tools, and time available limited this study to fifty experimental tiles, twenty-eight of which were used in the final panel. Many of the others were used photographically to illustrate the application of tools and material to school-room use. Further limits in use of the clay for a wall panel were encountered in an effort to retain its intrinsic value as a material. Due to the limited size of kiln, the panel could be fired only in its separate sections, though the assembled product was to present a unified surface. Thus extra care was required in the preparation and marking of the entire panel before being disassembled for firing.

## II. DEFINITION OF TERMS USED

Creativity. For the purpose of this study creativity was considered as the ability to use clay and a light-source as a means of exploration, experimentation, discovery and redefinition of ideas, internal tensions, visual forms, and kinesthetic responses.

Guilford described the creative person as a fluent thinker with a high correlation between quality and quantity; a flexible thinker, an elaborate thinker, and a reflective one. He is described as impulsive, self-confident (particularly with respect to his own ideas), self-assertive, self-sufficient, tolerant of ambiguity, and appreciative of beauty and order (1:5).

Experiment. Thorndike defines this word as meaning: (1) test or trial to find out something; (2) based on experience, not on theory or authority.

Light-painting. Use of a light source and its resulting plastic organization through changing shadows in which design and light source have become equal partners in solving the problem of unifying many parts into one whole.

### III. METHOD AND PREVIEW OF THE STUDY

Method of research. In order to carry out the plan to develop a wall panel using light and shadow as an integrating factor, flood lights were shifted to simulate morning and evening shadows cast by the sun during actual work with the clay. Sculptural qualities inherent in clay were emphasized by raising the edges of each tile to create a sense of volume and to add to the play of shadows. Early experiments with flat tiles were discarded as lacking depth, and some fluted tiles were put aside because the all-over design lost cohesion through too widely varied use of textures.

Design problems such as the relating of the separate parts to the whole and the entire design to the limitations imposed by the straight edges of the outside rectangle; the reinforcing of the power of the vertical edge through application of the design; and the importance of staying within a two-dimensional plane, all become a part of the challenge to create.

Preview of thesis organization. This paper will develop from the purpose to the conclusions in the following order: a review of relevant material from a library research is given in Chapter II; a description of methods used and discoveries made in the present experiments follows in Chapter III; and finally the conclusions are drawn in Chapter IV.

## CHAPTER II

### REVIEW IN FIELD OF STUDY

#### EVOLUTION OF RELIEF SCULPTURE

In many parts of the world early man pecked, engraved, or painted on the rock surfaces of shelters or caves. Examples of early Paleolithic art in the Stone Age of 50,000 B.C. have been found in Africa, western United States, South Sea Islands, Australia, and Europe. Many historians believe that the art of man began in these caves where the small, now famous, three-dimensional sculptures and ceiling engravings were found. The paintings on the ceilings of the Altamira Caves in Spain are remarkable for the richness of colors and the "manner in which irregular geological formations on the surface of the ceiling are utilized as relief form within the painted rendering of the animal" (7:19). These relief sculptures used accidental bulges in cave walls with intention and real artistry. Later relief work lost much of the impact of these early works through ornate, decorative features.

Relief sculpture depicted culture through-out the ages. Small stones used to show size of property, the Indus seals with pictographs, Egyptian stone reliefs depicting historical tales, Mesopotamian tablets and low relief friezes,

and the recently discovered Minoan paintings have recorded early civilizations for mankind. During these centuries relief sculpture has been the means through which the artist has related the stories of great deeds, important rulers and religious rituals. These panels have illustrated the changes from accidental to formal artistic style and from primitive to classical periods for the art historian. The stone used by the artists has varied, depending upon availability usually, from the cave wall to Egyptian limestone, to the Greek and Roman marbles, and artists have used the inherent stable quality of stone to give their work the feeling of permanence. During the fifteenth century sculpture evolved from the static relief panels to sculpture in the round with Michelangelo's concept of radial movement, in which the observer feels compelled to view the work from all angles.

"The harmony in early art between architecture and relief sculpture is due in some degree to the fact that architect and sculptor were usually one and the same person. . . . But since the Renaissance, the two professions have separated more and more, until in the nineteenth century sculpture without architectural background became the rule" (2:99).

Except for a brief period during the fifteenth century when the Della Robbia family "in their chosen medium of polychromed glazed terra cotta turned a craft into sculpture

through the creative effort they applied to each product" (7:262) clay was not used, for the medium has not the inherent monumentality of stone.

With the advent of sculpture in the round and increased attention of the artists to painting, relief panels lost their appeal for the creative artist and became a part of art history.

#### REVIEW OF CONTEMPORARY SCULPTORS

Most literature discussing the uses of clay refers to the potter, and is aimed at the student or hobbyist. Some recent publications (6) deal with the new area of creative ceramics. "There is now the free, bold use of clay. Many contemporary potters, mainly the younger ones, are turning to ceramic sculpture" (6:30-37). Tracy Atkinson, director of the Milwaukee Art Center, had this to say, ". . . particularly interesting are those potters going beyond the conventional limits of their craft--into free blown glass, into the use of form-destroying shapes and into gouging and deep working of surfaces" (3:40). The winner of this exhibition was a ceramic panel by El Jahr. The stoneware mural, entitled "Tribute to Polly Adler," is a flat work with a cut and gouged abstract design illustrating the new contemporary trend mentioned by Tracy Atkinson.



In the "22nd Ceramic National" competition craftsmen from all fifty states and Canada vied for prizes and after the showing one hundred and fifty works were picked for the two-year long circuit to museums and galleries. Potter Henry Gernhardt has written in a special report for Craft Horizons magazine,

"...although wheel-thrown pieces are dominant, other methods of building clay are much more in evidence, expressing new forms and new ideas . . . clay is becoming more plastic, slab techniques are being more boldly explored . . . vigorously manipulated clay . . . freely applied clay additions . . . display keen intuition for the forms pottery is capable of stating" (3:51).

This adventurous investigation of the possibilities inherent in clay has only recently begun to be publicized and where it has, the atmosphere has been one of excitement and wonder.

There is a need for new literature in the creative arts, for there is a growing conviction in America that the arts must face forward rather than backward, and that we must evolve our own forms of expression based upon our own social organization. While the art of Greece in Plato's time may be valid today as representing that particular period, so must the art of the new world be an interpretation of our own social philosophy. Literature showing and discussing current discoveries in art acquaint the student and the public with trends upon which they in turn may build, creating a dynamic growth in artistic endeavor.

## CHAPTER III

### REPORT OF THE STUDY

#### GENERAL INFORMATION

The problem was to create a wall panel using clay and glaze in such a way that light and shadow become an integral part of the design. A square, eight inches by eight inches, was chosen as a basic unit for integrating a number of separate units which would be used to create one large design. Using light and shadow as part of the design involved hollowing and building up surfaces with a variety of tools specifically chosen to illustrate the use of implements easily available to all teachers.

#### IDEA SOURCES IN DEVELOPING A WALL PANEL

Since form grows out of material and the material conditions the nature of the design, design and form should be inspired through manipulating and experimenting with the material. The mood and feeling of working in clay and of the clay itself can be transferred to the finished work. Clay is particularly adaptable to expressing plastic form, which according to Philip C. Beam "applies to some tangible mass which is pliable, malleable, and flexible and can therefore be given a new shape by being twisted and turned. A

plastic form is one which results from such a shaping process" (1:338). It is from the handling of the material in the most literal sense of the word, that the forms begin to grow and take shape from the material itself. As one works with the material, ideas present themselves for further exploration.

The original shape of the panel was to be rectangular, and the decision to use eight inch square tiles was partially imposed by the limitations of kiln size, and the desire to unify the lines of the small units with the outside lines of the panel. Since this was an experimental use of clay problem, no patterns were used, and the design was developed directly in the clay. Due to the imposed limitations of size, depth, and shape of the tile and the use of tools easily found, many variations were developed that might otherwise have been overlooked. Relating these discovered variations to shadow shapes produced emphasized distortions which led to further experimentation.

#### ISOLATING A THEME

During the period of isolating a theme, which was to be associated with the concept of "light-painting," there occurred a re-interpretation and re-shaping of ideas which is the evolution process so aptly demonstrated by Philip C. Beam in his comparison of Muir's "Skunk Cabbage" drawing with the sculptured abstract entitled "Growth."

". . . artists carry selection and elimination as far as possible in order to give us an interpretation of nature which will have a universal rather than a limited meaning and will possess an infinite power of suggestion . . . handled in this way these plastic forms may suggest countless shapes associated with living and growing" (1:338).

The words "living" and "changing" became the underlying theme of this "light-painting" clay panel.

Design and light source (morning to evening, season to season's shifting sun) have become equal partners in solving this problem so that what is invented is a sculptured light-painting that is always a source of fresh surprise.

#### THE PRODUCT OF "LIGHT-PAINTING"

Experimenting with clay in order to reach a goal as nebulous as the use of light and shadow as a mobile, plastic organizer involved the process of selection and elimination to a far greater degree than the use of a definite, preconceived design, which would have eliminated much of spontaneity. The deep finger gouges and the irregularity of the deeply punched holes of the highly textured areas lend a feeling of freedom to forms that might otherwise have been overpowering. This is illustrated in the small photograph at the top of Plate I on page 13, which shows portions of the finished panel.

The sculptural qualities inherent in clay served to relate the surface design of the panel to the sense of volume achieved with the curved tiles. Curving each of these tiles uniformly increased the use of light and shadow in emphasizing not only the sense of volume but also a feeling of rhythm and uniformity that related the separate parts to the whole. Treatment of the design of a flowing growth in a landscape unfolding in an everchanging source of light resulted in the form at the bottom of Plate I on page 13 that seems to lie within the panel and not upon it.

Tools and techniques were experimented with and discarded as unrelated to the problem and each other until a choice of three or four "right" ones became apparent. The most useful of those techniques tried was a new, bony, linear manner where hard, abrupt, staccato black shadow areas jut, turn and connect a few of the floating forms, creating an energetic rhythm which helps bind the composition together. In some areas the variety of cutting allows for taut, angular, narrow stripping which is particularly effective as it alternates between growths of less confining forms, making furrows that cast deep shadows rather than the loose, ever-changing ones visible on the negative calm planes of the panel.

The interplay of changing shadows is shown in the photographs of the finished composition in Plate II on page 15, where the panel is portrayed three times in the

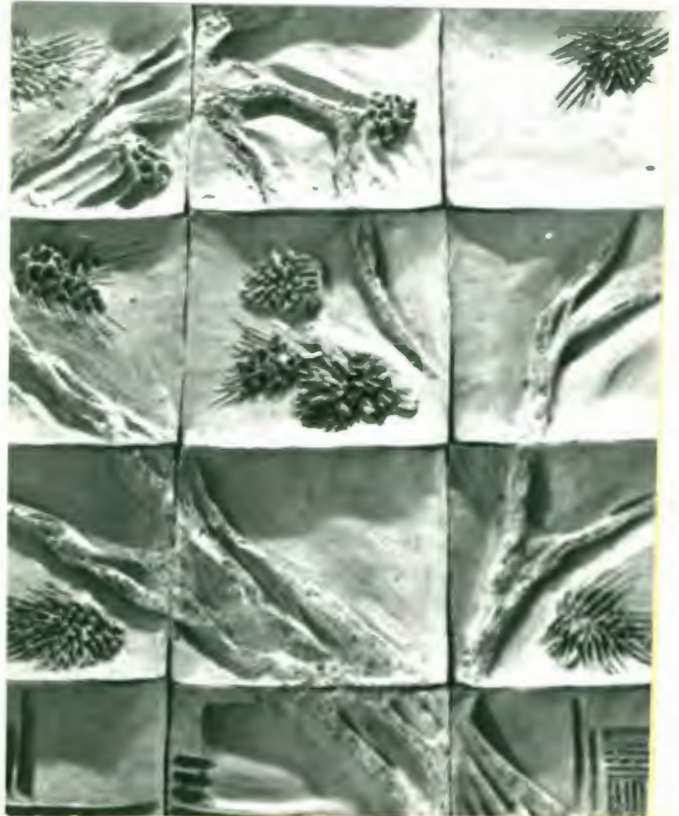
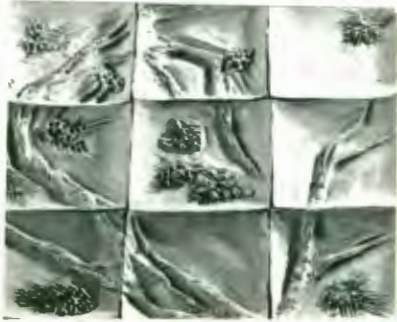
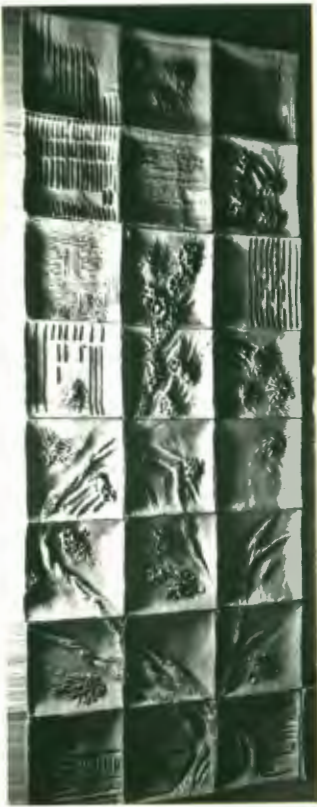


PLATE I

three extreme hours of the day--morning, noon, and evening lighting conditions. Early morning light (shown on the top left) casts deep shadows in sharp contrast with the lighted areas, increasing the linear patterns and causing the raised forms to stand out in sharp relief. These deep shadows, also shown in the evening light (top right) accent newly lighted sides of the forms and their changed positions reveal a new aspect of the picture. The moving light of the sun will cause the shadows to shift and elongate and at times become foreshortened, bringing different features of the relief panel into the focus of attention. The center photograph shows the entire panel almost equally lighted, revealing stronger horizontal lines in contrast to the vertical ones of other times of the day. The forms within the panel assume more importance than the sense of volume caused through extreme shadows, so sculptured forms are accented, and the free forms seem to drift lazily in space. Much the same effect would be present on hazy or clouded days.

A mat finish glaze of all one color applied in a thin coat allows tones of clay to be revealed in the high areas to complete the sense of unity of the entire composition. This unity, if further emphasized by tones of iron along the edges of the sculptured forms, results in almost a monochromatic painting on dull hazy days.







The single tile which appears in six various light sources at the bottom of Plate II on page 15 was used to direct the attention to the nature of shadow play within the parallel scooped out areas. At times they appear as ridges, sharp and clearly defined, and at times as valleys full of light near high spiky forms which flow into needle-like spray shapes. In just this way different tiles may become a source of surprise and the panel remain a pleasure to observe, rather than a familiar object recognized but not seen.

#### PHOTOGRAPHS OF CREATIVE EXPRESSION

#### WITH COMMON TOOLS

These examples of clay tile construction and its surface manipulation have been worked out to demonstrate some of the common tools or implements easily available to all teachers that can lead to a creative experience for students of all levels. The creative experience, according to Victor D'Amico,

" . . . requires flexible materials and media. They should fit the child's fingers, do his will, and be as rich in possibilities as his imagination demands. The teacher should help the child find the right tool and know how to use it to satisfy expression and develop power within himself . . . the child is the true artist in his ability to enjoy and use aesthetic experience to acquire insight into life" (2:25).

In the search for new materials and methods, and the constant struggle to "remain within the budget" the alert art educator is constantly seeking unexplored media which

will stimulate the imagination and develop initiative in the student. Too often the result of little time and money will result in an art program repeated year after year until inertia sets up boredom within the teacher and the art program. It is the intention of the writer to illustrate the value of imagination in tools and media, for the possibility of inventive uses for the tools presented in this study are inexhaustable.

Figure 1 on page 18 shows a close-up photograph of a flattened ball of clay, showing the plastic ruler found in nearly every desk. The corner of this "tool" has been used to gouge round holes, the end to create a flower with center gouged out leaving a pleasing bit of texture, the edge to make a linear pattern which is sharp and textured, and another that is smoother and more formal. Tipped on end the ruler imposed a series of fluted shapes, and the two end cuts might even be "birds in flight." In just a few moments seven different shapes and textures have been pushed and gouged into the surface of the clay and the possibilities of this one tool have hardly begun! On the same page Figure 2 shows other implements--pipe ends, tongue depressor, wood and different shaped edges of small pinch pots that will be used to stimulate the imagination.

Working with clay tiles can be an aesthetic experience for students at all levels. The first grader grows within



FIGURE 1



FIGURE 2

as he pushes, gouges, and cuts into the surface of the tile. The excitement of creating as many textures as possible with one simple tool, such as the ruler, can fire an entire class with the dynamic enthusiasm that leads to creating new surfaces and experimenting with new tools. This in turn becomes a very personal experience for each student and a building block for his next creative venture, which might be in story writing, music, or many other areas as well as art.

The experience of handling a ball of clay and pulling, twisting and poking it into all manner of shapes and forms helps the student become acquainted with his material and realize its potentialities. This awareness of the inherent properties of clay increases through manipulation and experimentation, and can get its start in the simple but necessary step of wedging and rolling the clay as shown in Figures 3 and 4 on page 20. Measuring and cutting the clay with a knife or needle as shown in Figure 5 on page 20 also increases this awareness and begins the realization of the limitations of the project being undertaken.

Experimentation with a variety of tools is just as important as finding that one tool has endless possibilities, and will lead to one method of allowing for individual differences. Different lines and textures appeal to different students, just as various colors appeal more to one than another. If the student is aware that this first tile is an



FIGURE 3



FIGURE 4



FIGURE 5

experience and not a permanent product, he will "become better acquainted with his materials and tools and invent new methods and implements with which to approach his medium" (5:216).

Trimming and shaping the tiles gave the first definite clue that the possibilities of creating a sense of depth, not possible with a flat tile, might be accomplished with a curved tile and the theory of negative volume, for the upper surface of a curve explains the capacity of the reverse side. Self-contained volume would then be an actuality when the curved tiles were placed edge to edge. Given time and materials a student will perceive and invent many such relationships. Figures 6 and 7 on page 22 show the trimming and shaping which resulted and is shown also in Figure 8 on the same page.

Discovery is a key word when used for creating texture in the clay tiles with easily found tools. Discovery of what happens when an implement is gently pressed into the plastic surface of the wet clay, or the results of unequal pressures, overlapping, or digging out a portion leads to more discoveries. Without the first "discovery" the second would not have taken place, so it is an empirical process that leads beyond the gouging, or the tool, into concomitant areas of thought and action. Discovery does not imply poor craftsmanship in the hands of the student, for this again is part of the teacher's





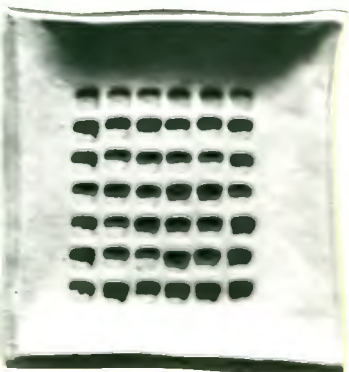
FIGURE 6



FIGURE 7



FIGURE 8



responsibility, and the control of a texture takes craftsmanship which has been taught patiently and thoroughly.

**Mendelowitz**, who is a recognized authority in art education, writes:

Just as uninhibited and vigorous experimentation with a medium will develop boldness and freedom, so a controlled craftsmanlike procedure also creates its particular capabilities. Working in a methodical and careful way trains one to develop great precision, and enables the artist to execute involved and highly formalized design concepts and to include a tremendous amount of detail in a finished piece of work (4:107).

The small tile shown near Figure 8 on page 22 illustrates how effective the carefully controlled texture of this tile became. Sometimes accidental creativity becomes the way of doing and the beauty of precision is lost.

"Which tool is the right one?" could be the caption for the photograph at the top of page 25, Figure 9, and the key to the puzzle would be Figure 11 at the bottom of the page. It might form the central theme for an art class bulletin board. Certainly the texture created by the tongue depressors might cause considerable reflection before an answer could be given. The bottom edge of a dixie cup creates a bracelet-like ring impression in the clay, and the edge of a piece of pipe makes deep holes and ring-like circles in the tile in the lower right corner of Figure 9. The impressions made by the small pinch pot in Figure 10 on page 25 look quite accidental, but it could be pointed out to the students that overlapping so the entire circle is not used is in this



case not as easy as it looks. These questions and thoughts might become all the motivation necessary if the final challenge, "What textures and shapes can you think up?" was used as the title to the puzzle bulletin board.

Of course, many ideas at random and experiments with no purpose could become very boring unless some sort of goal, either through class discussion or teacher direction, is set soon after familiarity with the medium is established. These tiles, depending upon type of texture, might become Christmas ash trays, wall plaques, trivits, or for the more ambitious or inspired students, singly or in groups, murals or wall panels.

Since the clay may be kept moist with damp towels and plastic coverings (old cleaners bags will do) the project may be extended over an indefinite time. This process is shown on page 26, Figure 12. Some of these tiles were still workable after three weeks, but could have been allowed to dry under a loose plastic in one or two days.



FIGURE 9



FIGURE 10



FIGURE 11



FIGURE 12

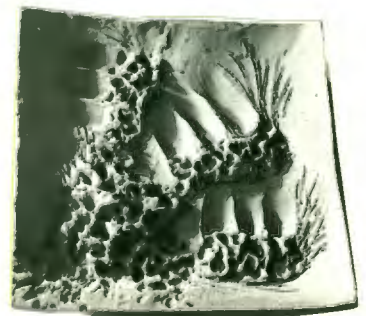




FIGURE 13



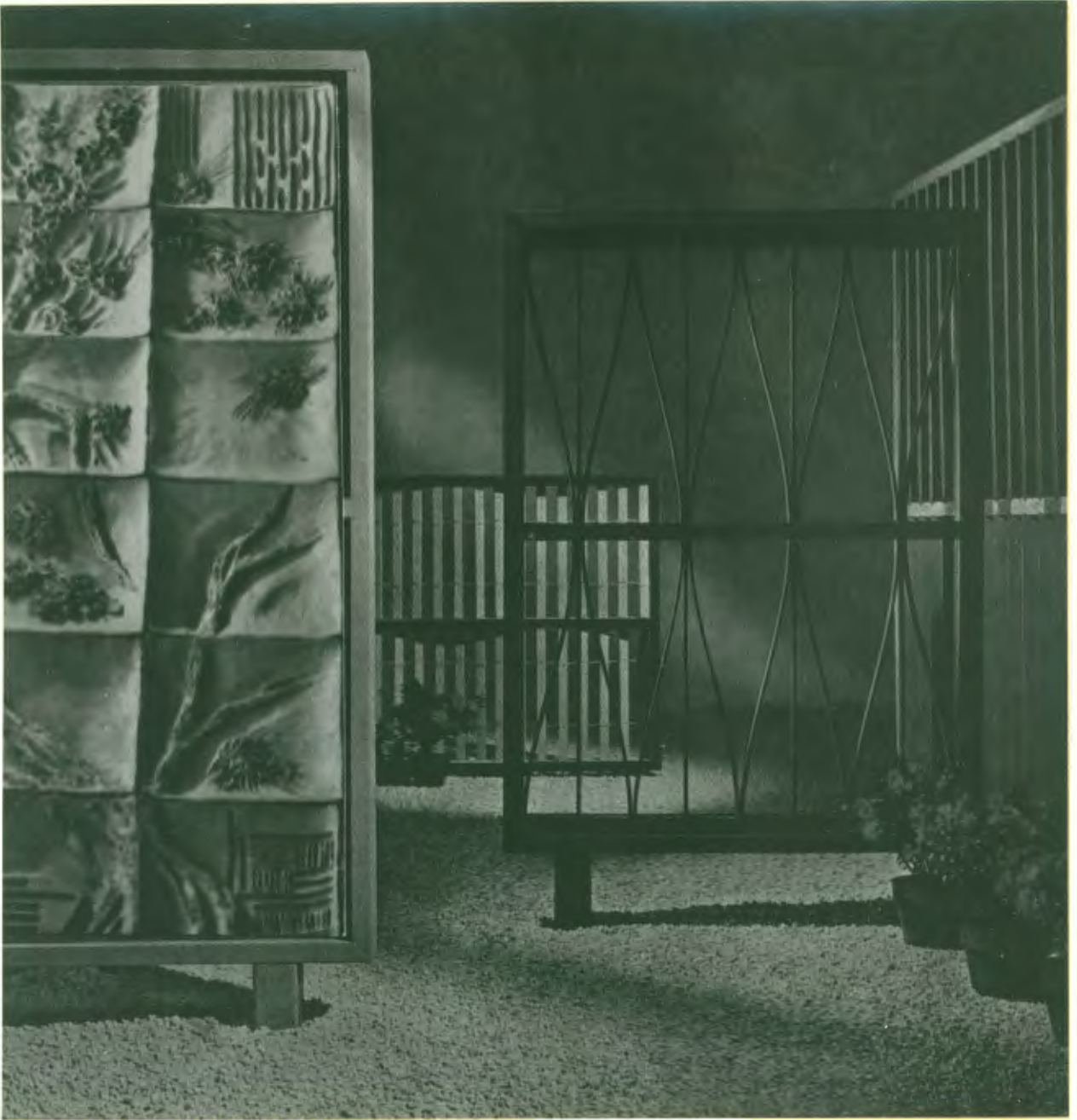


FIGURE 14



FIGURE 15

## CHAPTER IV

### SUMMARY AND CONCLUSIONS

#### SUMMARY

It seems that one of man's earliest inclinations was to create artistically, whether to satisfy some mystic belief, to gain aesthetic satisfaction, or to satisfy some sociological needs, as in the case of recording of deeds and events. Man seems to be an artistic creature by nature. His sense of design and balance were evident in the earliest attempts to create an aesthetically pleasing picture. In many parts of the world man pecked, engraved, or painted on the rock surfaces of shelters or caves, and upon his utensils and weapons. Many civilizations rose and fell leaving traces of their culture in their art work. One of the first and most successful techniques to emerge was that of depicting deeds and events on stone relief panels. These panels made picturing in "series" possible and from these artifacts today's historian can tell us many things about past cultures.

Relief sculpture evolved from engraved linear outlines to low relief, then to high relief in which two and three levels were used, and finally to three quarter sculpture where the figures were still attached to a background and intended to be viewed from the front. Thus, from the Stone

Age, which dates back to around 50,000 B.C., to the fifteenth century when Michelangelo discovered what is called "sculpture in the round," and relief sculpture ceased to be, miles and miles of stone panels told the story of man's beliefs and his culture.

Only recently, with the knowledge, techniques and equipment of today, has clay sculpture become a medium, plastic yet permanent enough to command the attention of contemporary artists. High fire glazes, stoneware, large gas kilns and bold use of clay have set an exciting atmosphere from which tomorrow's masters may emerge. A flat ceramic panel won a national competition of craftsmen last year. Perhaps another year someone will go another step deeper into the use of light and shadow in "light-painting," invent a new approach or technique, and relief panels will emerge into twentieth century culture.

The use of clay tiles and the creative possibilities architecturally as well as within the student make this approach to learning creativity applicable to any age level. It was discovered through experimentation that the possible ways in which clay can be manipulated with common, easily found tools are inexhaustible. These ordinary "tools," metal tubing, forks, pieces of tin made into gouges, and others, can be utilized in many mediums as well as when working with clay,



and will serve indirectly as a way of keeping the mind open to creative possibilities. Results of the study have demonstrated how these experiences may be provided in the classroom.

Restricting the variety of textures and techniques used was found to be an important factor in completing the individual tiles so that the assembled product would present a unified surface. The separate parts brought together created a design in which the important integrating factor was "light-painting" with the changing light of outdoors. The initial assembly of the separate tiles into a completed panel is shown in Figure 13 on page 27.

#### CONCLUSIONS

The sculptural qualities inherent in clay served to relate the surface design of the panel to the sense of volume achieved with the curved tiles. Building up the surface and cutting into it as the design developed resulted in rich textures and shapes in which the tensions were resolved in adjoining calm, negative areas. The sense of self-contained volume has emphasized the illusion of "light-painting," the mobile, plastic organizer of this outdoor panel. Further unity of the parts has been brought about through the use of repetition of various textures, as well as horizontal and vertical lines which repeat the square edges of the separate tiles and those of the entire panel.

Keeping the mat glaze restricted to one over-all color with the use of iron as a "tone" device serves to emphasize unity and use of light and shadow as a creative element. Using a mat surface restricts unexpected reflections which might distract the attention of the observer yet intensifies the effect of light and shadow.

This experiment proved to be successful and provided a stimulating experience for the designer not only in executing the actual panel, but in formulating plans for future uses for this panel and others to follow. An exciting way to involve the important "light-painting" factor could be the use of the panel as a wall divider where cross-lighting takes place as shown in the photograph in Figure 14 on page 28. Outdoor lighting is most desirable and this could be achieved by using the panel near an entry way or as a patio screen as indicated in the photograph in Figure 15 on page 29. Other creative uses of the panel might be imbedding the tiles in a plaster wall to achieve deep texture, or on a fireplace wall. Since the tiles are extremely durable they can become a permanent part of a house either inside or outside.

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