CERAMIC FURNITURE

(An Experimental Project)

A project report submitted to the Board of Postgraduate Studies in partial fulfilment of the requirement for the award of the Masters Degree in Art Education.

By

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CERTIFICATION

Certifies that this project is the candidate's own account of the research.

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Preface

The writer actually stumbled into a ceramic furniture programme in August 2002. Invitations were thrown out by 'Aba-House' in august 2002 at Nungua, Accra. Fine artists from Ghana, USA and France were invited to a two day collaborative ceramic workshop. As a tutor in a teacher training college at the time, I thought it was an opportunity for me to learn. I enthusiastically rushed to register for the programme. I got to learn that the workshop was a 'give-and-take' programme. The topic for the workshop was Ceramic Furniture. Participants expressed their ideas on using clay to make furniture. Much enthusiasm was put into the programme that by the close of the workshop I was convinced that I had understood the concept of ceramic furniture. I did not have to wait long for me to use the skill I had acquired. My admission requirement for a Master of Art Education course required me to present a research topic. I was convinced that an in-depth research into the subject will give me a deeper understanding of ceramic furniture. The thought of designing and producing clay furniture wares and the feel of being among the first Ghanaians to pioneer research into the subject exults me and gives me great satisfaction. The exposure is a rare ability to produce furniture from clay and its related materials. I am with the hope that the foundation laid in this project on ceramic furniture will inspire creative student's minds to explore further the art of clay furniture. This foundation work will be a favourable reference material on ceramic furniture. WALK.

ACKNOWLEDGEMENT

I wish to express my highest felicitation to the almighty God who graced this project through to completion.

My profound gratitude goes to Dr. E C. Nyarko my project supervisor for patiently reading through my scripts and offering very cogent suggestions without which this project would be a mess.

I am equally grateful to Dr. S K. Amenuke who was never tired of my numerous questions. He deserves a greater commendation.

I am committed to say a big thank you to the staff of the ceramic department for expertly firing my wares without problems.

Miss. Betty Agboado, God bless you for your sacrifice and dedication with which you typed, edited and printed this project work.

In profound delight, I extend an unflinching thank you to Miss. Mavis Ogbe, for her assistance and care through out my two year programme. God bless you.

I am grateful to the entire staff of the Art Education department who in divers ways offered suggestions that built up this project.

Finally I extend my sincere thanks to my wife Miss Gertrude Obro and my children for their love and encouragement.

Walter Asamanti. Kofi Leys

KNUST, Kumasi.

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ABSTRACT

The objective of the research on Ceramic Furniture is to design and produce samples of ceramic furniture pieces. Furniture in wood has dominated any efforts in producing furniture in ceramic materials. The problem posed to the researcher is to explore 'clay' as a viable and reliable material that would singularly or in combination with other materials produce furniture. The depleting of wood forest is forcing man to explore other materials for making furniture. The research into the art of Ceramic Furniture is to introduce a new craft into the curriculum of schools.

The research goes in to prove a hypothesis that ceramic materials like clay and cement can supplement wood in furniture production. Samples of clays were experimented upon to find an appropriate clay body that would be suitable for furniture production. Designs were carried out and some of them depicting some Ghanaian symbols were adopted. Sample pieces produced ranged from miniatures to life sizes. In every sample case, a different clay body was experimented.

Clay wares made for furniture have existed in rural ethnic communities. .However, little effort has been made intentionally to produce furniture from clay or other ceramic materials, notably; cement stands out widespread in the production of garden furniture for parks, homes and schools.

The researcher gathered most information from the inter-net, libraries and local traditional sources. Lack of sufficient information on clay furniture or the research into its production made the craft unknown particularly in Ghana.

The researcher recommends that the subject of Ceramic Furniture be introduced into the Visual Arts programmes of schools, colleges and the universities.

CHAPTER ONE

INTRODUCTION

Clay objects placed or erected in homes that serve as objects of comfort to the human body have existed for generations. All over the world ethnic communities have created earth forms for furniture

In Ghana, earth forms are raised for beds, and platform for water ports. These Are known as ' bamma' in Asante.

In recent times, particularly in the low temperate countries clay forms are constructed in homes to serve as room furniture.

Plate 1. Ceramic furniture fittings to enhance an interior set-up.

Many of these constructed pieces have existed for ages. They have often been referred to as sculptural works. As in the above picture, the Sofa in the centre of the room and the locker in the rear are constructed in ceramic materials. This means that ceramic furniture pieces can enhance the furniture situation in an interior setup.

Earlier efforts to find alternative materials to wood for the production of furniture fell on Plastic craft. Attempts by Italian firms and designers to solve the technical and formal problems involved in plastic moulding goes back to the small appliances they created during the 1950's, when chemical industries were continually improving and adopting plastics to the needs of furniture making. Designers had a material at hand with which furniture could be formed. In plastic furniture production, imaginations were limited only by the requirements of machine production, and the characteristics of the material. Plastic chairs and tables are particularly attractive to consumers for their low weight and generally low price. They are shock and scratch resistant and brightly coloured.

Though plastic furniture has excellent sculptural qualities, the material proves to be inferior to wood or clay when it comes to constructing rectilinear forms of furniture. Besides, plastic products are saddled with ecological and disposal problems.1.

The quest for new ideas to manufacture ceramic furniture products forms a major aspect of this project. To eject new ideas into the fast growing furniture industry for a research into ceramic materials that would lead to developing furniture designs and products that are natural to and related to Ghanaian culture.

Designing furniture in clay and combining clay with other materials like wood are needed to provide comfort to homes and places where such pieces are needed.

Iron on the other hand is playing a remarkable role in the provision of durable furniture for domestic use. Metal was not considered for furniture making until the later part of the 19th.century. It was during this period that a bicycle manufacturer William Staley (1858-1935), appears to have been the first to experiment metal for furniture. Presently, iron cabinets of all sorts are produced. Metal boxes have replaced wood simply because of its higher security advantage. Steel cabinets used in homes and offices are common. Metal and wood have combined favourably to design furniture for many purposes so that chairs, tables and cabinets in metal are a common feature. ibid.

The need to find new materials for the fast growing furniture industry calls for a research that will unveil reliable materials for furniture production. The need to use clay and cement or their combinations with wood or metal to construct furniture form the basis for this research.

Statement of the problem

Wood has been the main source of furniture production in Ghana. Research has shown that the forests are getting depleted at a very fast rate. The pressure on the use of wood and other forest products is causing deforestation desertification and other ecological problems. Besides,

stringent laws have been made against the illegal felling of wood. Wood and wood products have therefore become expensive and this includes furniture. Already attempts are being made by researchers to find alternative sources of materials for furniture. In this project, the researcher has attempted to experiment with clay and other ceramic materials for furniture production.

Hypothesis

Ceramic materials like clay and cement can supplement wood in furniture production.

Objectives

The objectives of this project are:

1. To identify and analyze possible ceramic materials that can be used to produce samples of furniture.
2. To carry out experiments by constructing various forms of ceramic furniture.
3. To design furniture samples using singular and composite materials.

Assumptions

1. Every community in Ghana is endowed with some available quantity of clay
2. Any grade of plastic clay will be useful in the production of ceramic furniture.

3. Ceramic furniture has been unpopular as a vocation in Ghana until recent experiments by student researchers and ceramic producers.

4. The Ghanaian ceramic education curriculum has never included furniture in clay as a viable vocation to be studied.

Limitations

1. It was difficult to get easy access to firing facility at the university

2. Literature on ceramic furniture is scanty.

3. The inter-net facility, the principal source of information, is expensive.

Delimitations

The nature of work and the need to ensure specifics made the researcher to emphasize on the use of clay than other composite materials The research project was offered in common materials and processes that are simple for any people who wish to produce ceramic furniture through these experiments. Emphasis is on clay furniture.

Methodology

This project employed the descriptive, experimental and analytical methods of research. Information on the topic was obtained from the inter-net and at Aba-House, Nungua, Accra, where workshops were held by Ghanaian artists including the researcher in a cross- cultural collaboration

with American artists. The researcher had the unique opportunity to participate in the 2002 collaborative workshop organised by the Cross Cultural Collaborative Inc, a non profit educational organization that promotes cultural exchanges and understanding through the arts, The organization invites Artists and Art scholars all over the world to work with Ghanaians on collaborative projects. . The researcher interacted with personalities like Mr. Oteng, a lecturer in ceramics at the University of Winneba, Miss Ellie Schimelma, alias, Aba, a resident American Art researcher at Nungua, Miss Barbara Allen, an American student researcher, and Mr. Ansi Sammy, a lecturer at St. Theresa's Training College.

The KNUST library was exclusively visited. The College of Art library and the Art Gallery were explored. The Art Education Department library offered ideas from researches on clay related topics. The researcher constantly visited the Ceramic Department to observe and study works produced by lecturers and students.

The researcher visited the Fumesua Brick and Tile factory where he interacted with Dr. Boadi –who researches into ceramic ware in fired brick, slabs and tiles and other products.

Importance of the study.

This project is to help discover new ideas which could be in the form of additional amount of knowledge that will make it possible for us to get increased understanding into the use of clay, and to a greater extent increase our generalization about ceramic furniture. It will provide reference material

for art teachers. It will serve as a source of reference to staff and students of ceramics in the colleges. The study will widen the scope of ceramic production and education in Ghana.

The Ghana Education Service can incorporate clay furniture into the curriculum of senior secondary schools, and as such, a good material for curriculum planners. The department of Art Education, College of Art,- KNUST, will find the project as an appropriate starter for further research into the subject of ceramic furniture. Further more, the study can serve as a vocation for the unemployed. It will also be a source of earning money and a hobby for young artists The study will finally bring foreign exchange in exporting ceramic furniture products.

Definition of Terms;

Clay;-thick heavy earth that is soft when wet and hard when dry or baked.

Green –ware; clay in its raw state not fired.

Biscuit /bisque dry;- When clay is fired living the ware hard and brittle. It assumes a red colour.

Terracotta –hard reddish brown baked clay.

Bone-dry ;- when green ware is left to dry under normal temperature.

Leather-hard;-partly dried green ware.

Ceramics;- a process of shaping clay into pots, bowl, tiles etc. and baking them until they are hard

Curing,- dehydrating and setting of cement mixture.

Kneading:- to press clay ball to remove air and ensure consistency

Wedge:- cutting through clay with wire and slamming it back to remove all foreign materials and air trapped in the clay

Slab:- clay pressed into a sheet on a flat surface, using a sac-board and roller.

Slip:- clay pulp suspension used ti join green ware especially when leather-hard.

Epoxy(sodium silicate);- paste for joining fired wares that brake

Plastic-clay ;-clay which can easily be shaped without breaking.

Composite-furniture ;- more than one ceramic material are combined by specified methods to produce furniture

Burnishing ;- the process of smoothing and polishing clay ware.

Kidney ;- burnishing tool, carved out of plastic.

Graffito;- surfaces of wares are scratched with a pointed tool through the slip to reveal the body.

ARRANGEMENT OF THE REST OF THE TEXT

Chapter 2.:- This chapter reviews all literature related to the topic 'Ceramic Furniture.'

Chapter 3 :-Tools and Materials, and general Methodology.

Chapter 4 :-. - Results and Discussions

Chapter 5:. Conclusions, suggestions and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The subject on ceramic furniture seems to bring a new wave of thought into the ceramic industry in Ghana. Ceramics and furniture are some of the oldest art forms in history. Research from libraries and primary sources indicate that the subject of ceramic furniture is a dream of the later part of the 20th Century. This explains the assumption that furniture in ceramic materials was previously unknown in Ghana. The Ghanaian art curriculum in ceramics has not yet considered furniture in ceramic materials as a viable vocation. Many attempts have been made world wide in recent times to find possible ways of producing furniture in clay.

The researcher has reviewed literature and the following topics have been highlighted.

Ceramics

The Encarta Encyclopaedia Standard 2003, gives a historical article on ceramic. It states;

> Ceramic (Greek, Karamus "potter's clay") ' Originally the art of making pottery. Ceramic is mow a general term for the science of manufacturing articles prepared from pliable earth materials that are rigid (solidified) by high temperature

treatment. Ceramic includes the manufacturing of earthenware, porcelain, bricks tiles and stoneware.' ibid

Ceramic products are used not only as artistic objects and tableware but also for such utilitarian items as sewer pipe and building bricks and tiles. In engineering, ceramics materials such as silicon nitrate and alumina are strong enough to be used for structural applications. Iron oxide particles are the active components in a variety of magnetic recording media, such as recording tape and the computer diskette. Ceramic materials are non – metallic organic components, as carbides, nitrides, borides and silicates. Insulators with a wide range of electrical properties have replaced conventional manufacturing materials. The electrical properties of a recently discovered family of copper – oxide based on ceramics become superconductive at temperatures much higher than those at which metals display this phenomenon. In space technology, ceramic materials and cements are used to make air craft and rocket nose cones and the heat-shield tiles on the space shuttle. Ibid.

A ceramic material like clay is a soft earthly material to be shaped into variety of forms and heat treated to become hard enough and decorated to serve as furniture.

Briars (2002)

Among the earliest materials to be put to use by human beings were ceramics; in the form of clays used in pottery.

Ceramic materials are chemical compound of metallic elements such as nitrogen. For a long time ceramics were mainly used for plumbing or for cooking or eating utensils but relatively strong engineering ceramic have now developed with good mechanical properties. ibid

Clay is earth or soil that is plastic and tenacious when moist and becomes permanently hard when baked. Of widespread importance clays consist of a group of hydrous aluminium silicate mineral grains that are microscopic in size and shaped like flakes. This makes their aggregate surface area much greater than their thickness and allows them to take up large amounts of water by adhesion, giving them plasticity and causing some variety of swell. Common clay is a mixture of kaolin, or China clay (hydrated clay) and some feltspathic mineral that is anhydrous (without water) and not decomposed. Clays vary in plasticity, all being more or less malleable and capable of being moulded into any form when moistured with water. Plastic clays are used for making pottery of all kinds, bricks and tiles, tobacco pipes, firebricks and other product. The commonest varieties of clay and clay rocks are China clay or kaolin. Pipe clay is similar to kaolin but

accompanies a large percentage of silica. Potter's clay is not as pure as pipe clay, sculptor's clay or modelling clay. A fine potter's clay is sometimes mixed with fine sand. Brick clay is a mixture of clay and sand with some ferruginous (iron containing) matter. Fine clay contains little or no lime,

alkaline earth iron (which acts as fluxes) and hence infusible with refractory shade, loam and marl. ibid

Many authors have tried to define clay and its composition. According to Bricks (1974)

> Clay is weathered decomposed granite and consists mainly of alumina and silica. The China clay or kaolin is the real mother clay consisting of silica, alumina and water. All its descendants contain impurities and funnily enough, it is the impurities which give clays their character and value for the studio porter. Ball clay is almost as pure as china clay but clay which occurs wild as a deposited material (transported and sedimented) under water, especially in geographically recent areas. It contains grains of silica and sand. Ibid.

Clays in popular use in Ghana are the clays that are easy to explore. The level of technology has determined the type of clay used. Pottery clays as residual clays are most explored. Until recently, ceramics in Ghana meant pottery. Brick and Tile products have increased the use of clay. The manufacture of brick and tile in the housing industry has increased the hope of clays to be used for the production of furniture.

Plate 2 Terracotta bed

The Romans must have exploited clay furniture products for some unknown period. Here is a bed found in a tomb. We may begin to consider the ingenuity of ancient Rome in clay craft as great.3

As seen in the picture the work was done in slab, fired and joined.

Cement

Cement is an important ceramic material. It can be moulded, cast, and built. It acts as a bond to join two hard surfaces, as bricks are used in constructing walls. Chambers describes cement as anything that makes two substances or objects stick together, mortar, glue etc). It involves any material that hardens and becomes strongly adhesive after application. In engineering and

building constructing the term refers to it as the finely powdered manufactured substance consisting of gypsum plaster or Portland Cement, that hardens and adheres after being mixed with water. 4

Cement is used for various purposes; binds sand and gravel together to form concrete, uniting surfaces of various materials, coating surfaces to protect them from chemical attack, constructing blocks, casting, building walls and for furniture.

Cement can set or harden, by several methods;

1. Evaporation of plasticizing liquid as water, alcohol or oil, and internal chemical change.

2 Typical Portland cement are mixtures of tricalcium silicate (3CaO . Si O2), tricalcium aluminates (3CaO. Al.2O3) and dicalcium siliate (2CaO. SiO2) in varying proportions together with small amount of magnesium and iron compounds. Gypsum is often added to slow the hardening process. The process of dehydration and setting of cement mixture is known as curing. ibid

During These processes, cement loses water very fast and hardens to bind surfaces, mould bricks, plaster walls and as furniture.

Metals posses several important characteristics that makes them valuable and durable. Metals used in ceramics play a helping role as catalysts. The most outstanding characteristic of metal is the tensile strength, which makes it to resist breaking under weight or bending force. Metals are easy to mould, join and cast. Metal is a composition of a group of chemical

elements that exhibit all or most of the following physical qualities; they are solid at ordinary temperatures, opaque except in extremely thin films, good thermal and electrical conductors, and lustrous when in solid state. (Encarta) ibid

Metals for ceramic furniture are in rod or sheet. They range from thin copper binders to thick rods and sheet that may need bending and cutting equipment. Metal can combine with other ceramic materials to construct furniture. (see plate 3) Thin and soft wire can be woven, plaited and tied on firmer rods to make furniture. Sheet and rod can be combined with other ceramic materials to produce composite furniture.

Furniture

The equipment in a room such as beds chairs tables and chests that usually gives a room a particular faction such as that of bed room, dinning room or kitchen. Furniture has existed for generations.

Historically, the most common material for making furniture is wood but other materials such as metal and plastic have also been used. Furniture designs have reflected the fashion of every era from ancient times to today. The most successful designers today are eclectic and furniture rangers from innovative designers to adaptations of historical models for special needs including traditional 'Adinkra' models.

The basic requirements of furniture design are complex, for appearance has always been as important as function and the general tendency has been to design furniture to complement architectural interiors.

Indeed, some forms were conceived architecturally with legs designed as columns. Other forms were at least in part anthropomorphic with legs in animal forms. Furniture designs range from simple to elaborate depending on the pieces intended use rather than on the period in which they were made. In surveying historical furniture however it is the fine furniture made for royalty, nobility and wealthy classes that is emphasized, because in general it has been the best preserved. Fine furniture also reveals the most about the period because highly developed designs closely reflect changes in taste. ibid

Plate 3 A wooden box

The cassone was a marriage chest that was a particularly prominent form of furniture in Renaissance Italy. Cassoni were usually decorated either by painting, inlay or relief carving, as this 16th century. Venetian example featured Classical scenes. A winged figure is set at each corner and the chest stands on paw feet. ibid

Such designs could be copied in ceramic materials to serve similar purpose. Clay and cement could be cast or made into slabs, to produce similar effects.

Arts & Crafts furniture

With it's simple lines and plain rush seat, this chair is a classic example of handmade furniture of the kind promoted by the Arts and Craft Movement at the end of the (17^{th}) The chairs are based on traditional forms of the country and were made by traditional methods. (Encarta)ibid

Ceramic furniture pieces must be constructed to represent a period. Society has become so dynamic that designs will keep changing to portray a period of change. In Ghana, Adinkra symbols in Ceramic Furniture will enhance beauty and give meaning to specific furniture pieces

Plate 4 Metal chair – woven in soft wire.

This armchair was designed in 1965 by Warran Platner for the Knoll Company of New York. It is made of bronzed steel wire and nylon and represents a direct development from the chairs designed by Bauhaus innovators as Marcel Brewer and Ludwig Mies van der Rohe . ibid

Plate, 5 Table (Composite furniture) by Ruhlman Emile Jacques

Ruhlman was a leading designer in the Art Deco style. This ebony and brass table is in the sleek, undecorated style that he adopted towards the end of his life. ibid

It would be easy to place a clay slab on the wooden base. A clay slab will increase the table's delicate appearance which is often needed at home.

Ceramic Art Furniture

These art works are developed in further attempts to produce furniture by ceramic techniques.

The 'Tariki' studio art works can enhance any space, indoors or out. The pieces on these pages are useful as well as beautiful. The studio has created many different variations of art works viewed on these pages. These works are made by hand.

We could refer to architectural space as that one which is enclose by a fence or boundary, it could be a room ,courtyard, porch or garden.

Any of these spaces need to be covered by appropriate furniture pieces that make the use of the space facility comfortable.

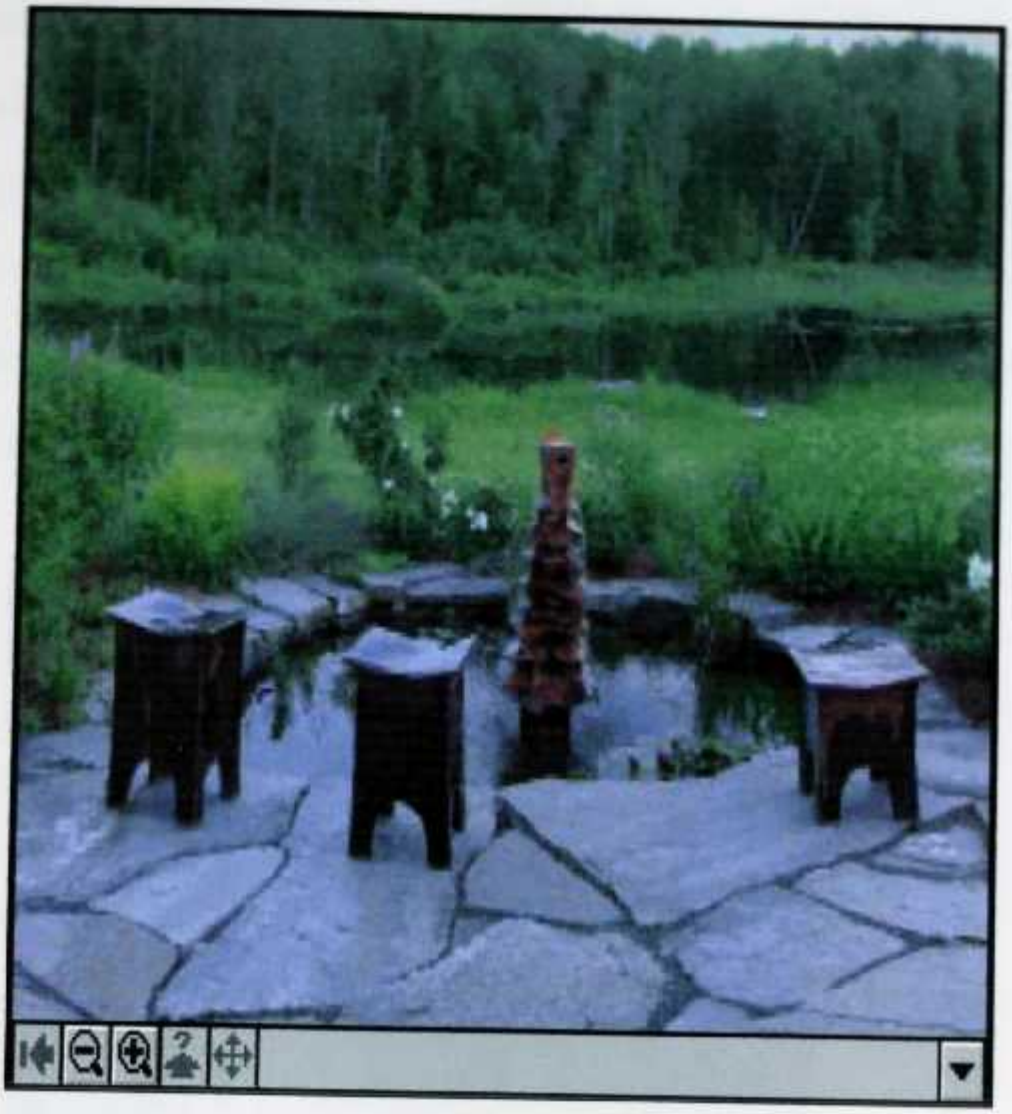

Plate 6. This is a good example of a garden environment enhanced by an effective arrangement of ceramic furniture pieces.

This garden is suitable for a meeting place or an open lecture ground. In the middle is an ambient lamp stand. All pieces are made in clay. Designers must judiciously combine space with furnishing.

Historically, box objects where places at home for furniture. This box furniture idea was founder by Koare Kliant (1888 – 1954) . He was known as the founder of modern Danish furniture design. In 1924 he taught

furniture at the school of architecture of the Copenhagen Art Academy. Here he conducted systematic studies of religious, physiological correctness and functions of furniture. ibid

Today, furniture companies are producing combination wall cabinets as kitchen furnishing Suitable furniture must be provided for every type of environment to create optimum comfort for the user. Space should actually be a deciding factor in furniture design.

Plate 7. A wooden kitchen cabinet set-up.

Furniture by its connotation is a corporate in the design of the home, where it enhances the leisure activities in the home, sleeping and relaxing.

It also makes provision for other activities as writing typing, cooking and dressing, Home furniture considers cabinets and room dividers as the most important. We must not loose sight of the fact that furniture use is highly dependent upon the aesthetic quality of the product. It is necessary that furniture designs must be religious, cultural and assimilative in mind.

Furniture is the life of a people. The above setup could be done in composite materials, as clay and wood or cement and wood. Clay or cement is used to construct the structure and wood for the shutters.

It is necessary that furniture designs must be religious cultural and assimilative in mind. Furniture is the life of a people.

The splendour of the Asante culture is in the traditional furniture displayed on great cultural festivals. The stools of the Asante kingdom and the life of the people are inseparable. The most famous is the well known "Sika Dwa Kofi", the golden stool, which is said to have been conjured from the heavens by Okomfo Anokye, the chief priest of Osei Tutu, the then king of Asante. Okomfo Anokye saw that the only unifying force for the Asante nation was the stool. The golden stool was created to serve as a symbol of unity and strength. The symbols of stools have created a literature of the Asante Kingdom. 5

Kings and Queen Mothers of Akan, Ewe, Ga, and Nzema are the custodians of the stools that stand as symbols of unity and authority. All these artistic pieces which were made in wood could all be presented in ceramic materials. In Ghana clay objects are given similar spiritual ovation as wood. For example, dolls made in wood or clay serves the same purpose. It is important therefore to adopt traditional designs in wood to produce similar pieces in ceramic materials.

The following pieces and similar Ghanaian designs could be adapted into ceramic furniture construction.

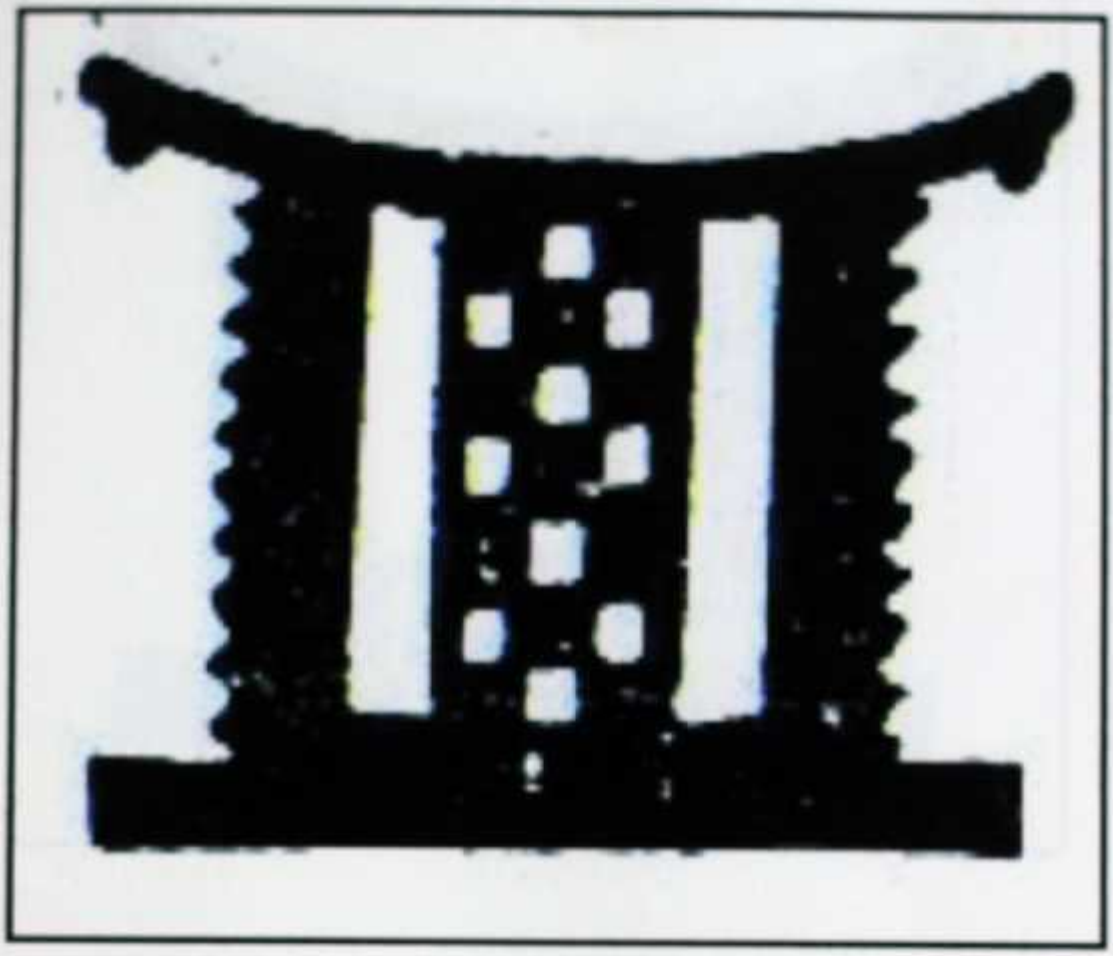

Plate 8 Mmaa dwa - a traditional Ghanaian; Women's stool.

A man usually presents his wife with stool when he marries or when she bears him a child. It is a stool reserved for use by women. It is culturally presented or inherited from an ancestor. Mmaa dwa is often displayed by queen mothers and family heads during festive occasions. ibid

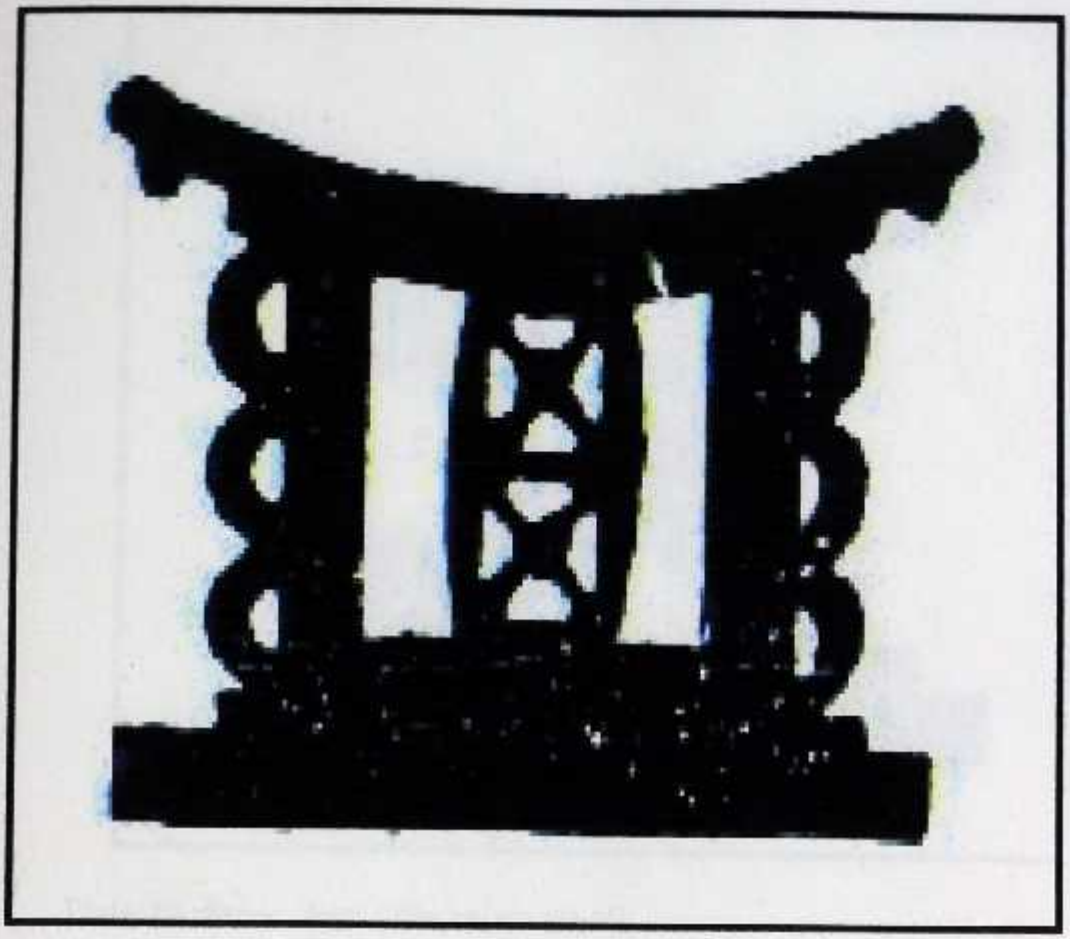

Plate 9 Mmarima dwa - The men's stool.

In the Ghanaian house hold only the male usually the head of the family uses this stool. It is carried to important family and clan meetings.

Plate 10 Srane dwa (The moon stool)

Used exclusively by the Asantehene (King of Asante). Any one who uses it challenges his authority.

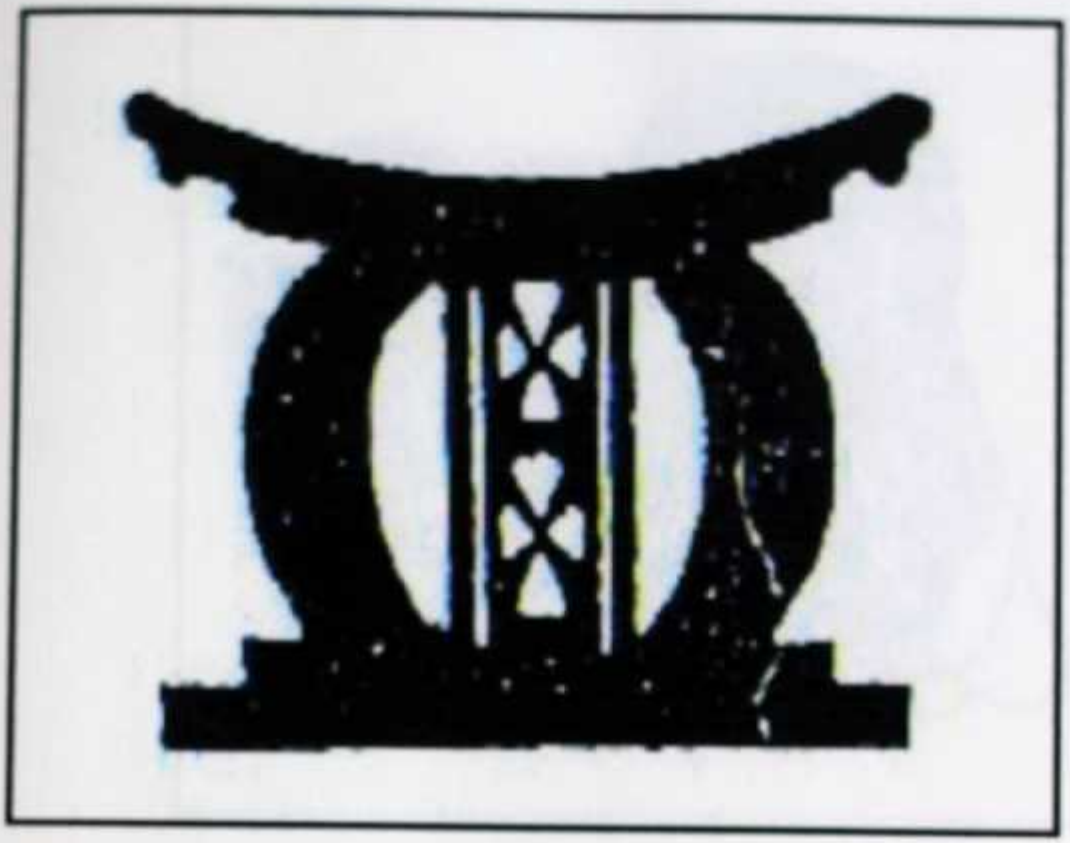

Plate 11. Ohemmaa dwa (The Queen Mother's stool- Asante)

Stools of this nature made in clay can be better preserved. It will be very easy for people like women and children who are not conversant with using sharp tools to work in clay.

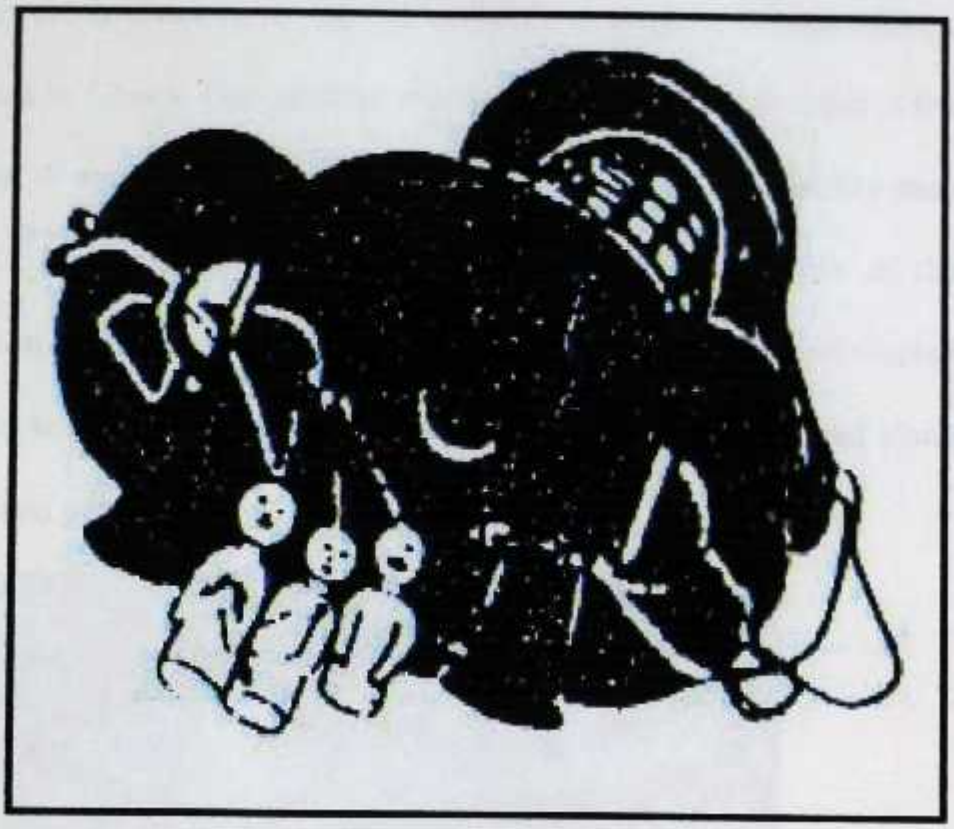

Plate 12 Sika Dwa Kofi: The Golden Stool of Asante

'Apart from their everyday use as furniture, stools play quite a significant role in social as well as religious matters. Socially they act as mere seats or as a symbol of authority.

These chiefs' stools usually become objects of worship. Symbols of stools are either proverbial or abstract, and represent the aspirations of the clan and her rulers. The 'kotoko' stool of the Asante symbolizes Asante as a nation ready to strike from all angles at any time. ibid

Ceramic Materials like clay and cement can be more conveniently explored to produce simlar stools. These symbolic images can be copied in clay and cement.

Ceramic Art Furniture

The ceramic art furniture have also found elaborate usage in homes, offices, and hospitals in Ghana. One product that has been conveniently used is the water closet. Very colossal human figures have used the toilet facility ease and without breaking them. If interiors are to speak of the life of the occupant then the beauty of a toilet in a house as first on call should display clay product with elegance. Such clay objects as tables may be placed along walk ways and parks.

Plate 13. Benches & Tables. Suitable for hotel gardens.

This object is made of clay, baked and glazed in ceramic style

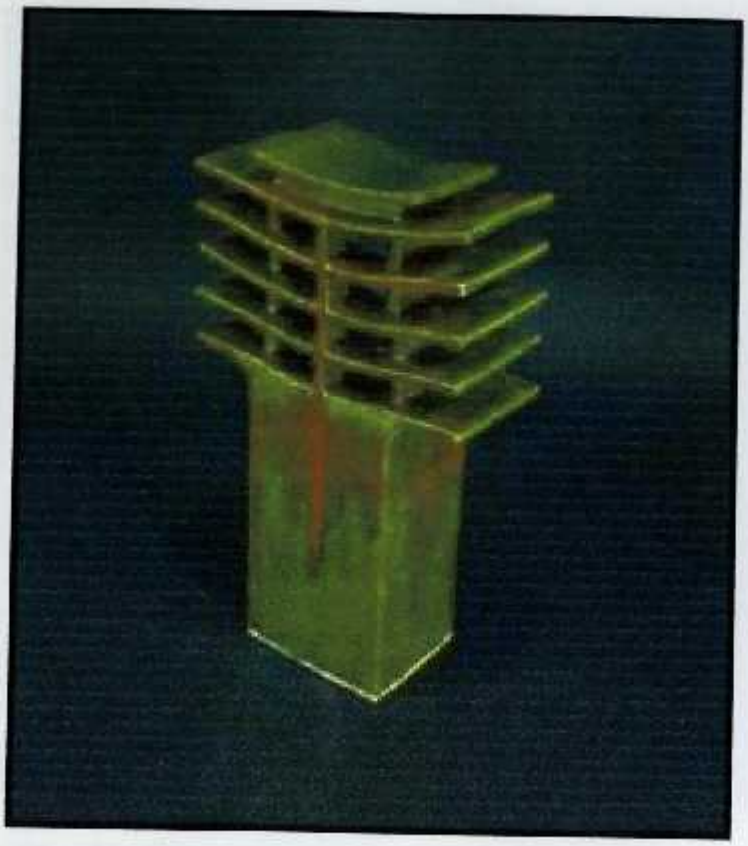

Plate 14. An ambient lamp stand with shade for your garden and pathways.

This is a lamp stand with shade. It is constructed in clay, baked and glazed. It holds light which flashes rays through the spaces.

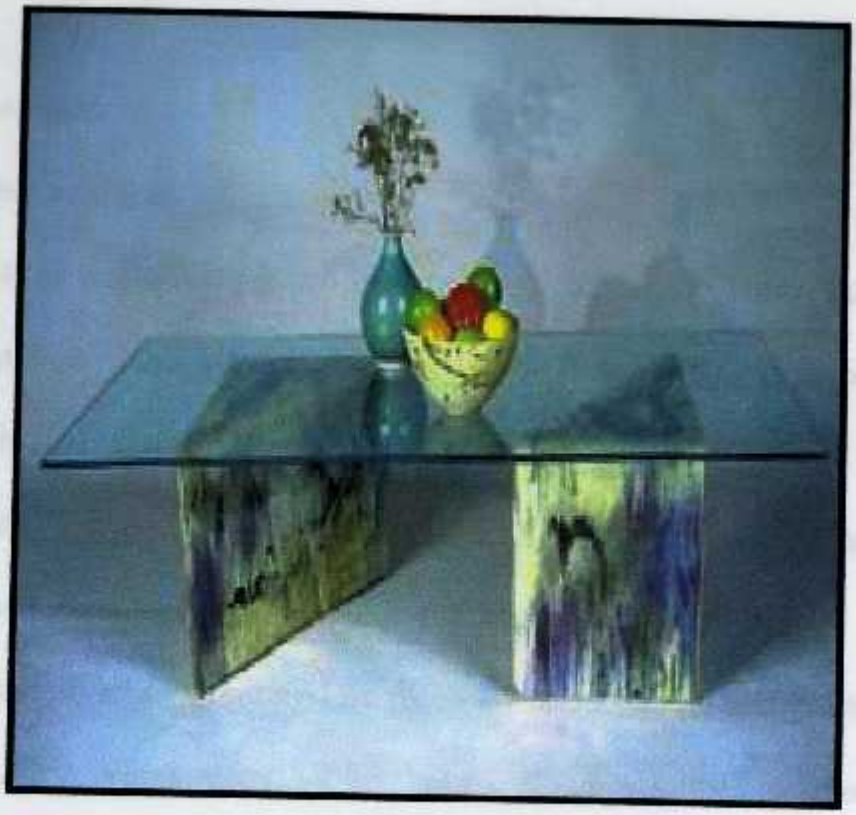

Plate15 Composite furniture – Clay base for glass top.

This is a composite of clay and glass Clay slabs were constructed into triangular prisons. The glass top could be glued onto the ceramic props. The object could be used as a centre table in a living room.

Kiln Furniture:

Brisks has said that,

> 'It is wasteful to leave empty spaces inside the Kiln chamber and so small pots are arranged in layers on stout but mobile shelves. These shelves and the tabular props which support them are stilts called kiln furniture and must be capable of withstanding high temperature' Encarta

As the name implies Ceramic kiln furniture is the design and production of refractory components which when fitted together formed the superstructure on which ceramic pieces are placed and fired. There are manufacturing companies specializing in kiln furniture production.

Plate 16 An opened ceramic kiln showing 'kiln furniture' pieces, such as props and shelves. As its name implies is the design and production of refractory components which when fitted together formed the superstructure on which the pieces The ceramic art limited is a manufacturing company specializing furniture or superstructure upon which ceramic pieces are placed during firing . ibid

The Cross Cultural Collaborative at Aba-House produced works which depicted each participant's understanding of ceramic furniture. The two workshops exhibited miniature pieces that could be effectively used as furniture.

Plate 17. An American participant Miss.Barbara Allen exploring a clay furniture model from the design of an ant hill.

The Cross Cultural Collaborative workshop at Aba-House produced works which depicted each participant's understanding of ceramic furniture. The two workshops exhibited miniature pieces that could be effectively used as furniture.

Plate 17. An American participant Miss. Barbara Allen exploring a clay furniture model from the design of an ant hill.

The following are works produced at the workshop. The works were hand built in miniature form.

Plate 18 Construction of a clay stool.

This work was done by rolling out sheets of clay slabs which were folded into a cone on an overturned bucket (mould). This formed the base. Another slab sheet was placed on top of the base structure to complete the work as sown on plate 19.

Plate 19. A clay stool. This is the completed work on plate 18.

This stool and similar ones are suitable for gardens or porch and convenient for short period use. The designs on the object were created when the work was still green. Impressions were made with simple modelling tools.

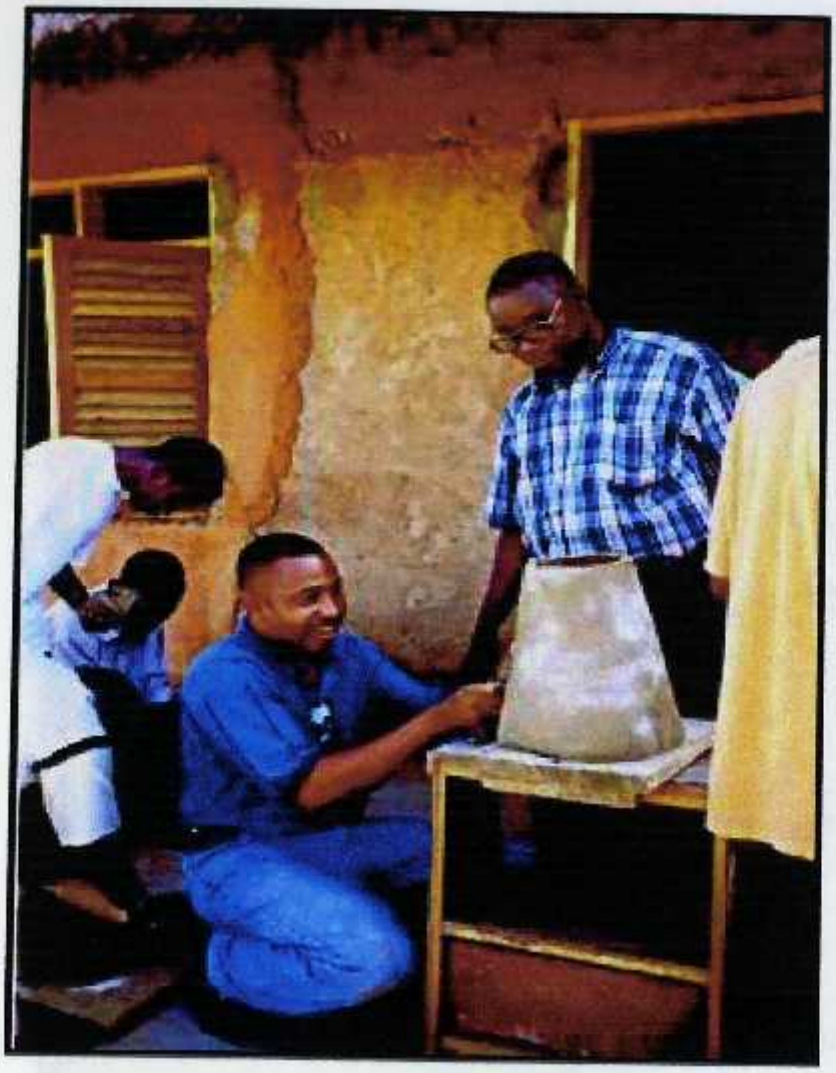

Plate 20. Group work. - Constructing the base of a stool.

A clay slab of reasonable thickness is placed on the base cone. A Ghanaian artist at the workshop is exploring the ceramic furniture concept. The conical clay model being dressed is a base for a stool. This basic ideas and expressions are used to produce furniture from ceramic materials. A large and thick slab is joined to the top of the cone to form the upper structure of the seat. The researcher observes the artist at work.

Plate21 Building from a natural form by modelling technique.

It is important to explore natural forms in ceramic furniture production. The design is the form of two hands in which the palms are opened to make a seat. The piece is moulded, shaped and scooped.

If developed, this seat may carry a myth.

Plate 22, Exhibition of Ceramic Furniture works.

These are a set of ceramic furniture pieces produced by slab technique. Clay slabs are pressed in a designed mould. The round shape and design are obtained mechanically. The tall cylindrical objects are lamp holders. There is also a cylindrical vase made in the same technique. All five items are suitable for the porch and the garden.

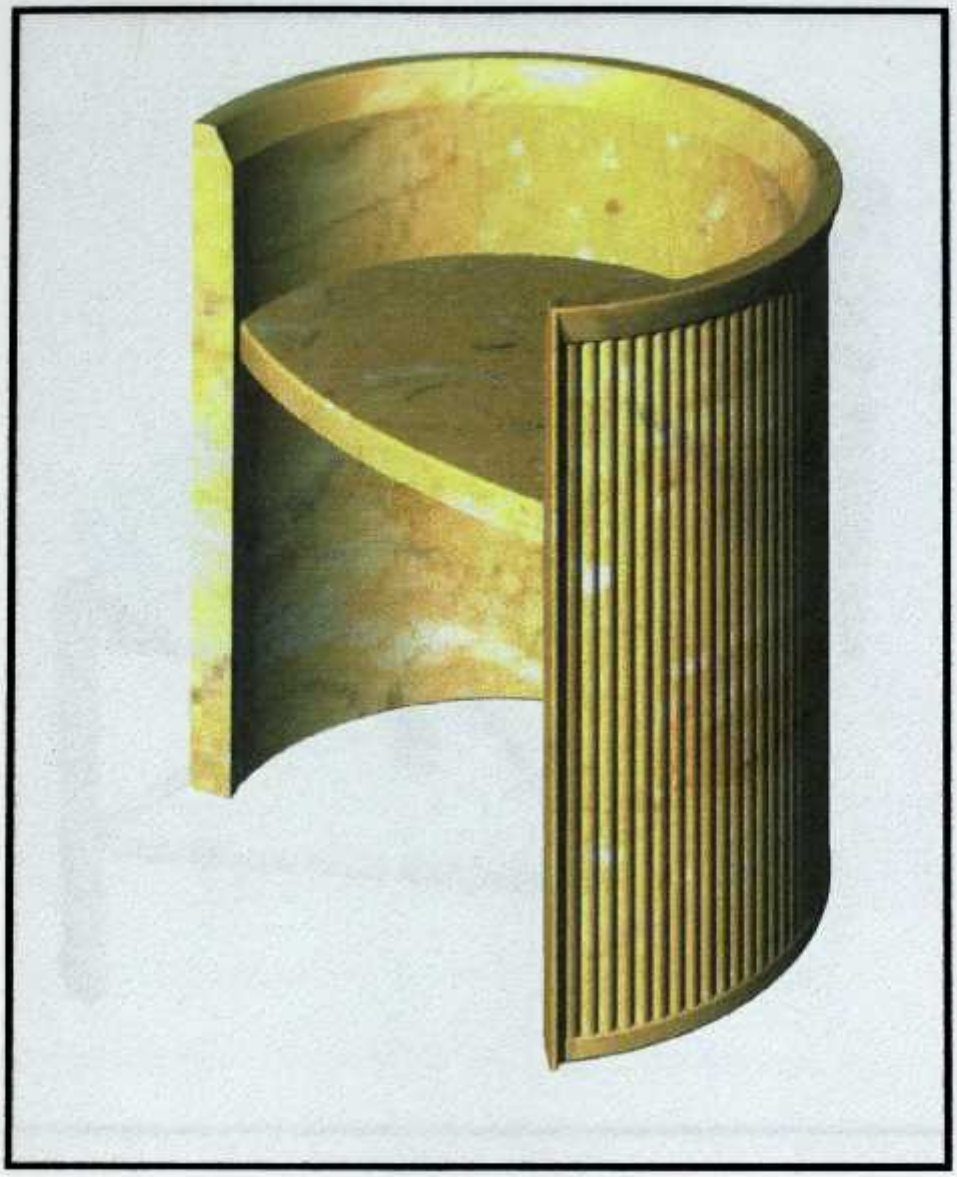

Plate 23 The enlarged view of one of the pieces on Plate 21.

The marble impression is as a result of the inhomogeneous mixture of ball clay and white clay. The clay slab was rolled on a mould with a corrugated surface, therefore, rendering the piece to assume an exterior leaner decoration. The pieces are fired in an electric kiln. They have been left in the terracotta state.

Plate 24. Coffee Tables - Composite furniture. (Clay top for wooden base) The tops of these coffee tables are in clay. These are good examples of slab work. The slabs were turned, shaped and decorated on the porter's wheel. They were successful pieces of different clay tests. Ball clay and Aferi clay have been tested to produce similarly good furniture. The wooden base was made in a carpenter's shop.

Plate 25. Composite furniture - Clay base for glass top.

This piece has enhanced the beauty of the living room space.

Some times it is necessary to bring delicate but decorative objects into the living room. Perceptually, the loftiness of the ceramic furniture piece has toned down the rigid room appearance created by the wooden furniture. This magnificent piece is the effect of terracotta work combined with glass. Note how the top glass has added delicacy to the ceramic furniture piece.

The clay was pressed into a flat long slab in a mould. This was cut to shape and rolled over cut-out plastic pipes into an 'S'. The piece was backed in a kiln. The glass component was glued unto the terracotta base.

Plate 26 Ceramic furniture cot.

This is a ceramic furniture piece produced on the porter's wheel. There are two pieces joined together, the base bowl and the top pot. The top pot has been cut at an angle where the remainder is suitable for a baby's cot.

Here a foam cushion could be made composite with the clay to complete the piece.

Plate 27. Drum seat (dondo dwa)

This ceramic furniture piece is a combination of two bowls thrown on the porter's wheel. The work could also be constructed in slab. The top seat was a slab turned on the porter's wheel. The parts of this seat could be made from a press mould or flat slabs could be folded and joined. Incisions could be made on the body as decoration. The work is baked in an electric kiln. Others could be baked in a local kiln or by open firing.

Plate 28 A seat created from an image of an uprooted plant.

This piece was hand built and scooped out to make it hollow and light to carry. The linier designs were made during leather hard state. The holes were also decorative and served as exit holes for gasses during backing. The piece is suitable for garden and pathways.

Plate 29. Image of a wild bird (glazed ware)

The impressions from the previous work were developed on this object. It was hand built and baked in an electric kiln. The glossy effect has been designed to give a wild impression. It will be suitable for the shrine, porch and garden.

Plate 30 A participant Miss. Barbara Allen - USA, demonstrating how to join broken ceramic pieces.

Sometimes, ceramic pieces could get broken and will need o be mended. Works could be intentionally produced in pieces to be joined after baking. Special glues in the class of 'araldite' solution could be used to join the parts together.

Plate 31 A participant explaining how his piece was made and how it could be used.

The pieces in the picture represent a section of the works produced by participants at the Cross Cultural workshops held in Aba-House at Nungua, in Accra, in 2002/03 respectively. They are all individual participants' expressions about ceramic furniture. All the works were made in clay.

Plate 32 Jug seat.

Designs adapted from the environment are often done to give a desired touch. This is the design of a jug from which the artist has created a seat. The work was hand built, scooped and baked. The piece is suitable for the garden.

Plate 33. Natural objects expressed in ceramic furniture production.

The design of the caterpillar - insect, the tortoise and the sea shell have been imitated in building these objects. Seats created from such wild designs are suitable for the garden and walkways.

Plate 34 Unity

The easy adaptation of 'Adinkra' designs into ceramic furniture production is that, most designs could be explored in slab work. Many names have been suggested for this piece including slavery, oppression and unity. Call it any name you like, it is a cultural ceramic furniture piece suitable for palaces and homes.

Plate 35 The slave and delivery - a combination of modelling and slab work techniques.

Most ceramic furniture pieces derive their designs from myths and social events. This is to represent the plight of the oppressed expressed in ceramic materials. Delivery explains those things that happen in secrete. These ideas are expressed in ceramic furniture production.

There was a follow up workshop in August 2003 as a continuation of the ceramic furniture work shop started in 2002. New participants were invited, they included Jennifer Robinson and Helen Graham (France), and Gig Iola Canes chi –Venezuela. Mss. Barbara Allen of U.S.A. returned to work with Aba on the ceramic furniture project. Ghanaians who attended ranged from a ceramic student to professional potters teachers and a lecturer in ceramics at the University of Winneba, They were at the 2002 workshop as well. As usual two days were not enough time to fully develop the theme, but interest was high and several of the participants returned on their own to complete their work. Workshop dynamic differed for many reasons. This time most of the samples were wheel thrown as against the first workshop when every thing was hand – built. What remained the same was that people worked in small groups to produce sample pieces. The results were exciting. These workshops will continue as long as there are interests, and judging from the result of past participation interest will be sustained for a long time. One measure of the workshops' success was shown by the neighbourhood workmen. Carpenters masons and other labourers drifted in and worked with us on their breaks. And some neighbours were curious enough to wander in during the kiln firing.

Plate 36 Picture of the organizers of the Cross-Cultural Programme at Aba House. – Nungua, Accra.

From the left, Ellie Schimelmas, alias Aba, a resident American art researcher at Nungua, (Direector), Sammy Ansi, a Ghanaian teacher, Miss. Barbara Allen, American student researcher ,and Miss Hellen Graham, (France).

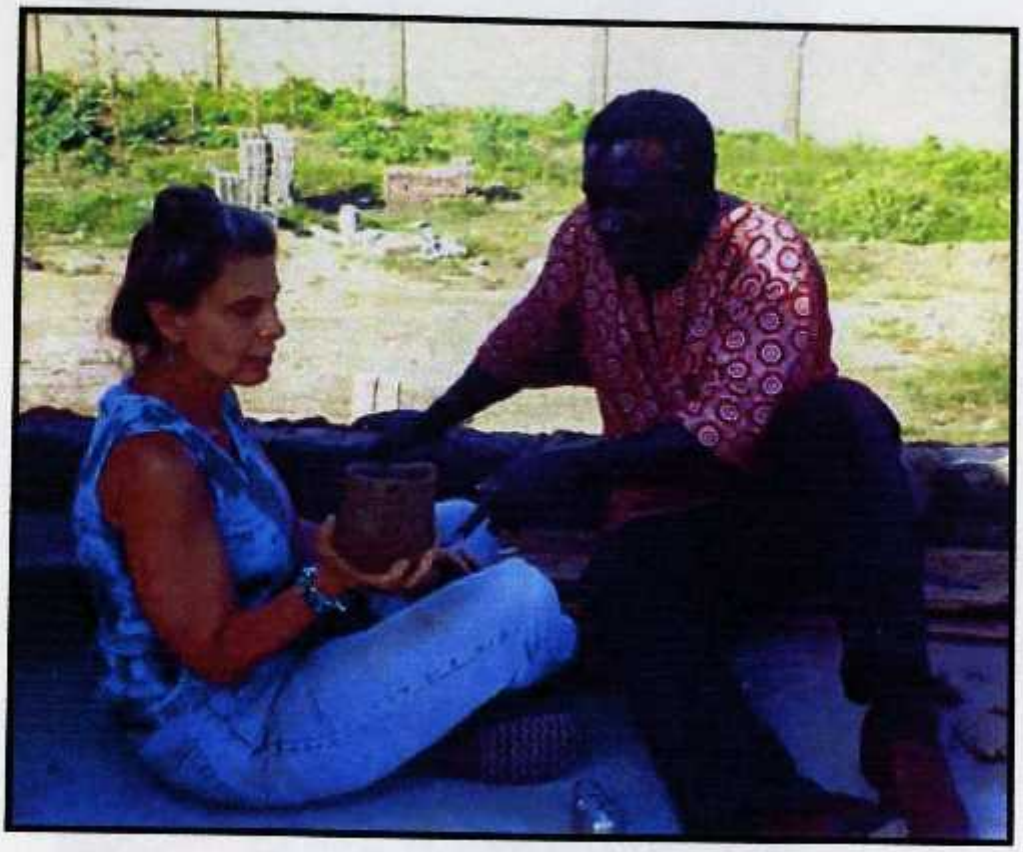

Plate 37 Mr. Oteng explains issues on African symbolism to Barbara. It is important that symbolism play a vital roll in the Ceramic Furniture concept. In Ghana some particular stools like those found in palaces have myths surrounding them. It only implies that Ceramic Furniture pieces must speak to the observer.

Plate 38. A Ghanaian teacher, Miss, Willemena Acheampong, at the workshop. She was the only Ghanaian female ceramic participant at the ceramic furniture workshops, and has shown considerable interest in the ceramic furniture concept. She is busy expressing her ideas in a miniature piece of ceramic furniture in clay.

Plate 39. Works produced by Barbara

The Ant hill has been very fascinating to Barbara She tried to create seats on a miniature ant hill design. The object in the front at the left is an imitation of an arm - chair to be cushioned. The object at the left is a human head carrying a seat. The object is mythical.

Plate 40 Exhibits by the researcher and Wilhelmina

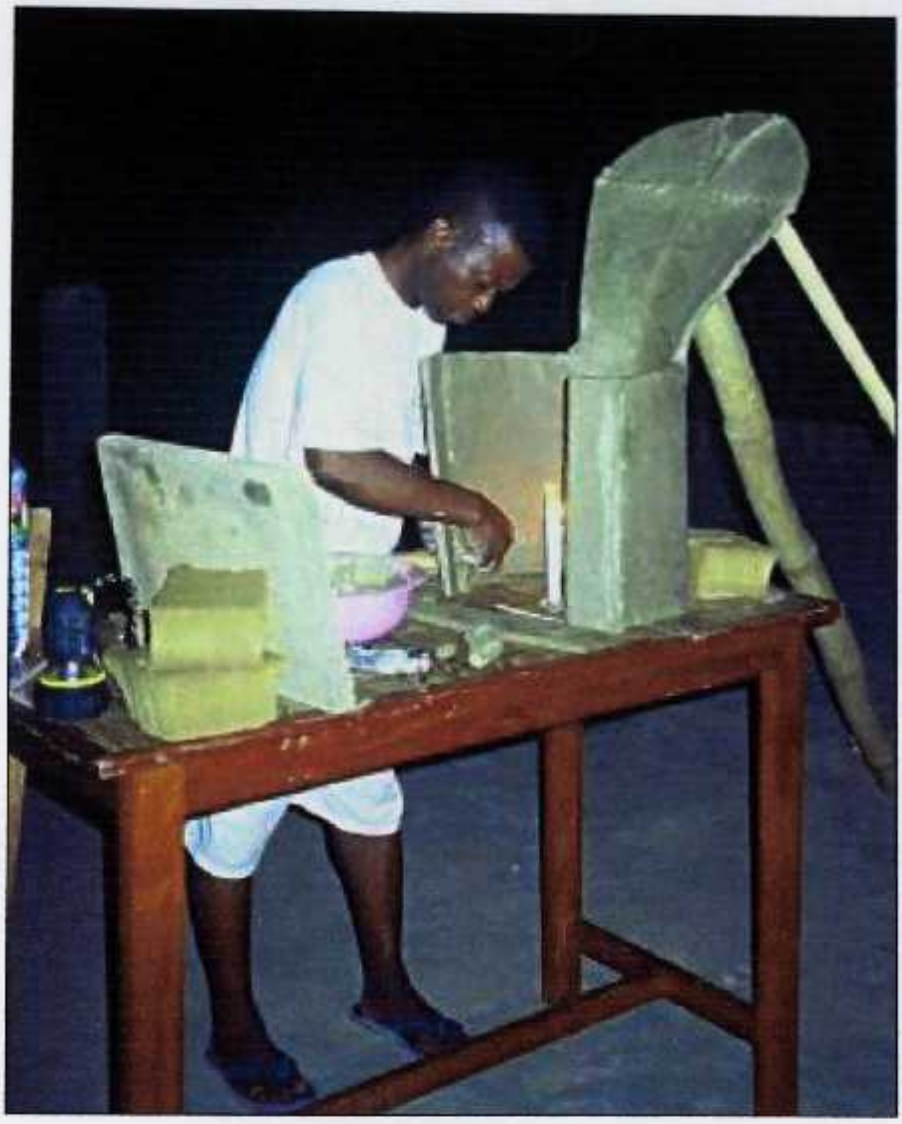

Plate 41 Mr, Ansi is working on clay furniture. He works in slabs.

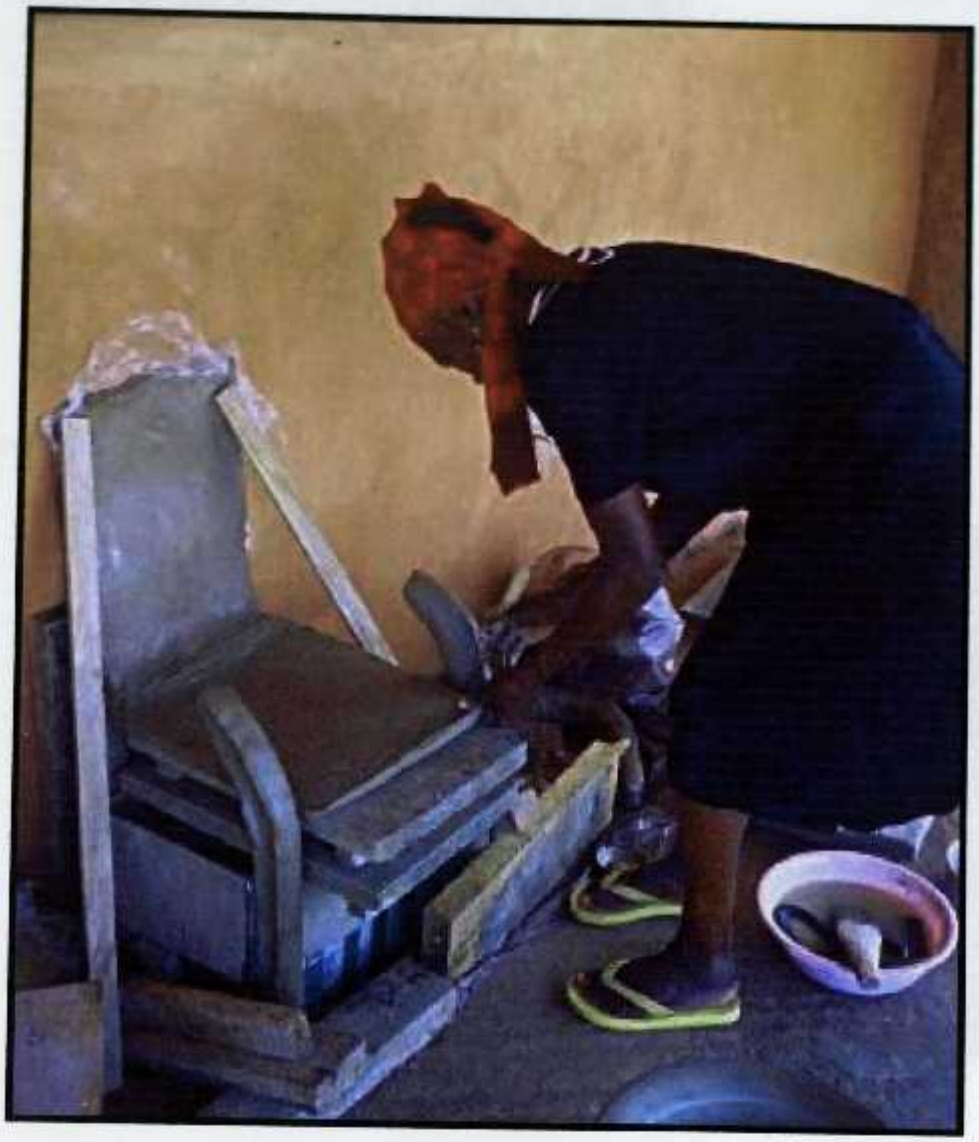

Plate 42 A local female potter

This woman represented a potter's association from Bodada in the Volta region of Ghana, at the workshop. She expresses the local ideas on the subject of ceramic furniture. Here she is busy working in clay slabs. Behind her is a bowl containing some water and her simple locally made tools.

Plate 43A. A Jewel box

Plate 43B. A Jewel box.

These jewel boxes are ceramic furniture works done by ceramics students of the Collage of Art – KNUST. The works were done in clay, using slabs. They are opened boxes fitted with drawers. The designs have been incised on the drawers and on the body of the boxes.

Plate 44 Ceramic furniture (environmental pieces behind the Science faculty at the Cape coast University). Such rest stops have been crated as leisure resting places for students while they waited for the next lecture. This can best be done in ceramic materials. These pieces were made in cement.

Plate 45. More of clay furniture pieces.

These miniature ceramic furniture pieces were created from simple clay slabs.

Plate 46 Imitation of the Ghanaian Royal stool.

These stool carries a design that explain a Ghanaian symbolic myth.

CHAPTER THREE

MATERIALS, TOOLS AND EQUIPMENT

(Identification and uses)

This chapter deals with, tools and materials, research methodology, and processes

Clay.

Clay has been one of the most useful of all natural substances in the technological progress of mankind. Because of its permanence, objects fashioned from clay provide a major part of our information about early civilizations.

Archaeologists have been able to trace the evolution of cultures and myths of groups of people through discarded clay pieces burred in the bowels of the earth either intentionally or by discarding of unwanted products. The 'Ebusia kuruwa',(relics pot) from Asante, used to store relics for the dead, is a classic example 6

Clay has various uses. As a building material, clay has been most widely used in the from of bricks and tiles. Such dried bricks have been found at the site of Jericho from the 8th Millennium BC before pottery was made, and the Mesopotamian civilization of Unuk, Eridu, Ur, etc, were built with sun-dried bricks sometimes with an outer casting of burned brick work.(Encarta)

In using clay, it is important that an in depth knowledge is sought on the properties of the material before it is used. This is even more important when a clay body is being used for the first time for a project set to find an appropriate clay body for furniture.

In order to obtain clay that fires at earthen ware temperature and has relative strength, plastic and workable, clays, like the Afensi and Afari clays, ware mixed up at a ratio of 1:1 . Fine ground grog at a ratio of 1:2 was added to singular clays like Afensi and Kibi-ball clays and kneaded. Simple plasticity tests were made by rolling a bit of clay and coiling it round the finger to find out the level of plasticity and its workability.

Afari clay,

The Afari clay test almost satisfied the writer's desire to explore for an appropriate clay body for the ceramic furniture project. The clay is orange pigment. It contains a lot of flux mostly of granite pebbles. In spite of the high flux content, the clay is highly pliable. It fires at low temperatures and this makes wares made from Afari clay, suitable for open firing.

During drying and firing, clays contract due to the loss of water and evaporation of combustible matter from the material. It is therefore important that the level of shrinkage is kept under reasonable limits.

The addition of grog and sand to the clay body was to check excessive shrinkage. The Afari clay already contains much flux materials and needs less grog or sand.

The Afensi clay,

This pottery clay is the residual clay types found in most parts of Ghana. It is prepared by washing away unwanted materials. It fires at higher temperatures than the Afari clay. It is of finer texture than the Afari clay type.

Wood

Wood is a material which has a complexity of structures and a variety of qualities. It is one of the few natural material that is found almost ready for constructing.

Wood combined with cement or clay to form composites in ceramic furniture production.

plate 47 The Banding Wheel

It is a portable equipment made of cast iron with a rotating flat disk that spins. Clay items to be worked are placed on the rotating disk turned from time to time as the artist works on the object without him having to lift the piece itself, or changing his position. The researcher used this equipment in modelling the miniature clay furniture forms..

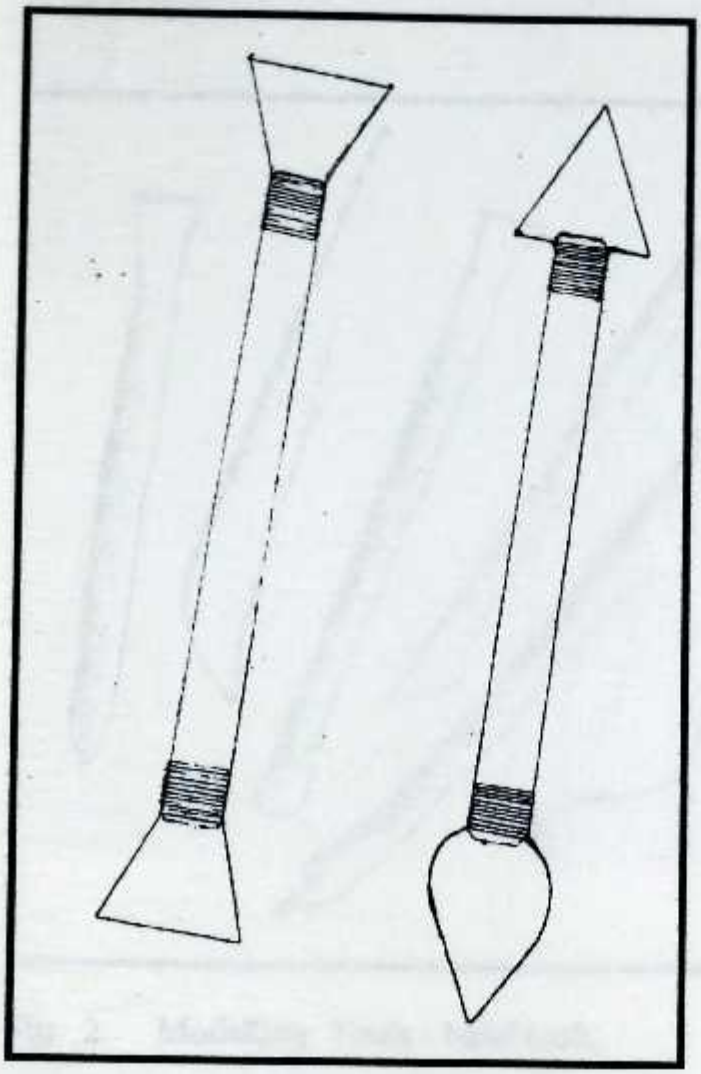

Fig. 1. Turning tolls These tools were made by the researcher. They are made of wood and metal wire. The copper wire was folded to the desired shape and tied on the stick with a thinner wire.

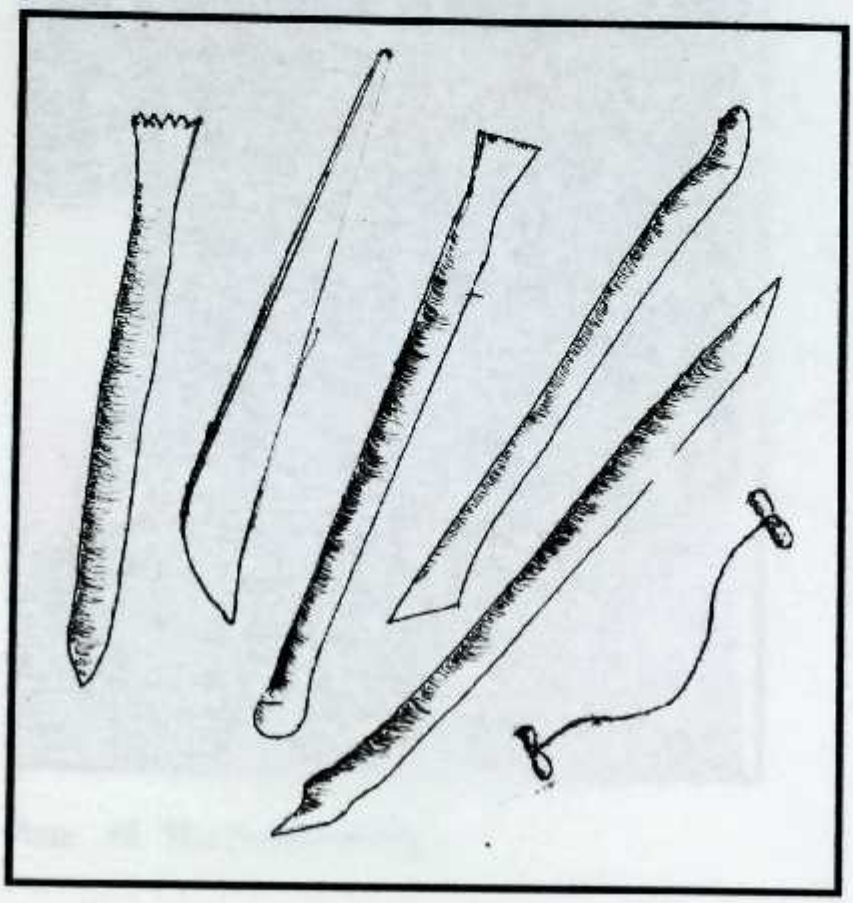

Fig. 2 Modelling Tools - hand tools.

These are tools designed to make modelling easy. They are of different shapes, forms and sizes with each designed to perform a specific function. These tools are made out of bones, wood, plastic or metal. The ceramic artist can however fashion out his own tools in a carpentry shop or use a knife to design tools at home from twigs. The researcher designed his own tools for the execution of this project.

Plate 48 The Potters Wheel

The invention and use of the potters wheel in pottery production has in no small way given pottery a new phase. The potters' wheel is capable of producing round forms made by potters. There are three main kinds of wheels available ,the kick wheel, the manual wheel, and the electric wheel. An electric wheel at the ceramic section, U.S.T was used in throwing and turning the clay component of the ceramic furniture pieces. (See, fig. 48).

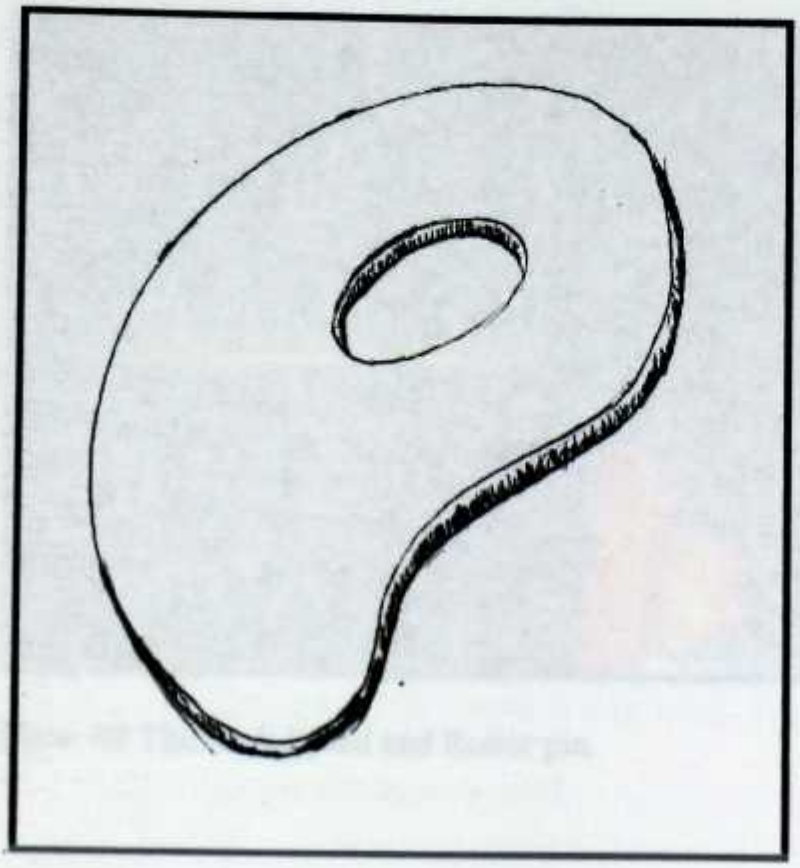

Fig. 3. The Kidney.

It is a tool made from a soft piece of metal, plastic or leather. It got its name from the way it is shaped, like a kidney. It is used to smoothen or burnish thrown objects when they attain the leather hard stage. The researcher used it for smoothing the thrown objects produced for this project.

Plate 49 The Sack-board and Roller pin.

This is a wooden board of average dimension 83cm. by 60cm. by 2cm. It is covered with jute fabric. This is to prevent the clay from getting stuck onto the board as it is rolled. The rolling is done with the aid of the rolling pin which is a round piece of wood with two handles at both ends. To be able to obtain a sheet of clay with even thickness, two flat battens of even thickness are placed on either sides of the sack-board to act as guides for the roller pin to go over.

Paint and Vanish.

Liquids that solidify when exposed to air and are used to cover surfaces for decoration and protective purposes. Paints are formed by mixing a pigment (the substance that provide colour) with a binder – often fluid such as linseed oil and vanish that solidifies when exposed to air are used. Opaque and coloured vanishes are called Lacquers. ibid

Conclusion, It will be difficult to identify any specific set of tools for clay work. It is easy for any explorer to create or acquire tools that are needed and will be useful in the specific type of work

RESEARCH METHODOLOGY

The research methods employed in this research are experimental, descriptive and analytical. The experimental research is something done to test a theory or to discover something unknown, it may be concerned with the future of trying to bring something new into existence. Experimental research is a process that provides a systematic and logical procedure of identifying and evaluating the relationships between variables that create a particular state of affairs under controlled condition. Ndagi (1984)

Here the researcher is able to bring out the relationships that exist between some variables to create the ceramic furniture pieces. The variables available to this project are materials, tools and equipment. The manipulation of these variables constitute the experiments, the descriptions and the analysis of the processes.

The Chambers English Dictionary explains description as 'the account of tracing out or delineating an account of anything in words. 7

The analytical aspect of research is crucial since it is the means to categorize the various materials used in the report. It provides practical meaning to the project.

General Production process

Sources of ideas

The researcher visited the KNUST main library where some information was gathered. Other libraries like the College of Art library and gallery provided some information. However, data was limited to ceramics in general, but nothing specifically on ceramic furniture. The inter-net however provide some information on the subject.

The researcher explored the environment for ideas, principally from natural objects. Much inspiration came from the adoption of suitable 'Adinkra' designs. This is done to add symbolic appreciation to the products and meaning to the user.

Experimental designs.

Idea developmental sketches and drawings were made to enhance the acceptability of project. A series of drawings were made to create novelty in the various forms of the ceramic furniture The designs included some exciting shapes of the Ghanaian traditional stools, shapes from natural objects and geometric shapes. They designs were also meant to guide the researcher in the production processes. A number of designs were created and some existing traditional stool designs were adopted.

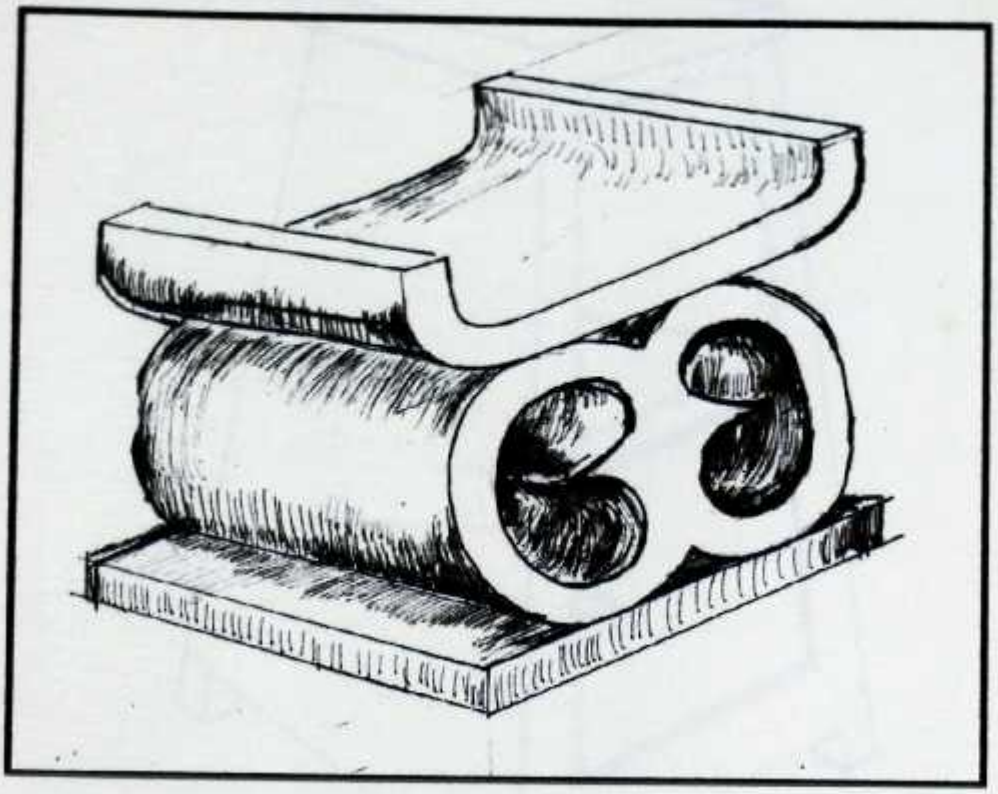

Fig 4 The drawing of an adopted traditional design of a stool.

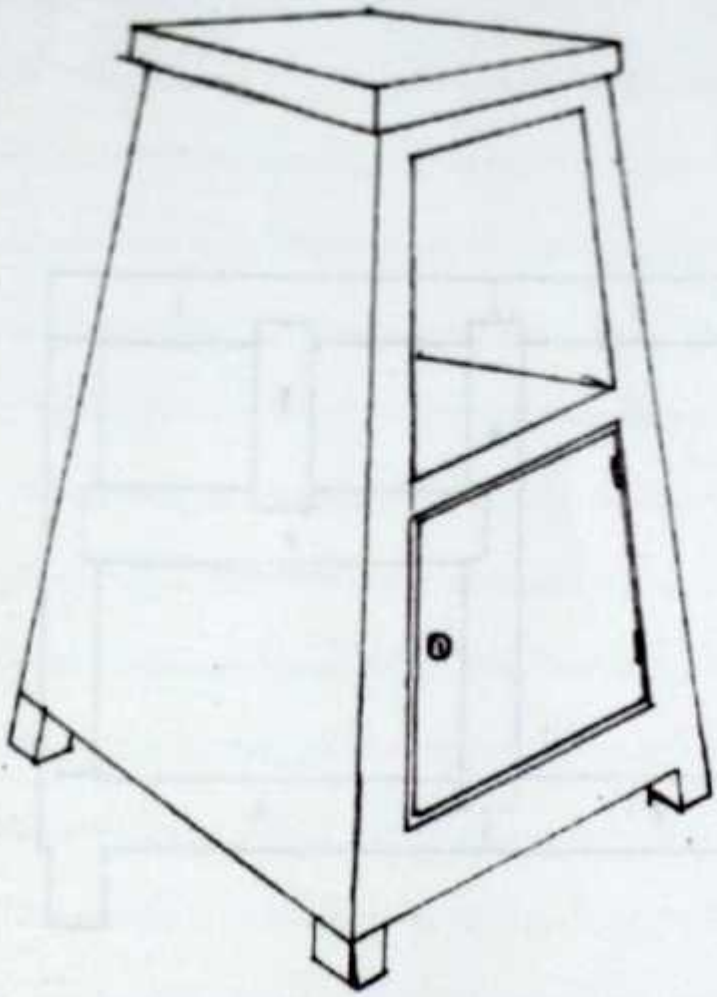

Fig. 5. Workshop Stool. A sketch made to be built into a ceramic furniture piece for school use. This stool is suitable for science laboratories and studios. Ceramic furniture pieces designed for schools should have stability that will prevent users from moving them unnecessarily. An in-built locker will be suitable to contain books and other student materials that could make the stool stand stable.

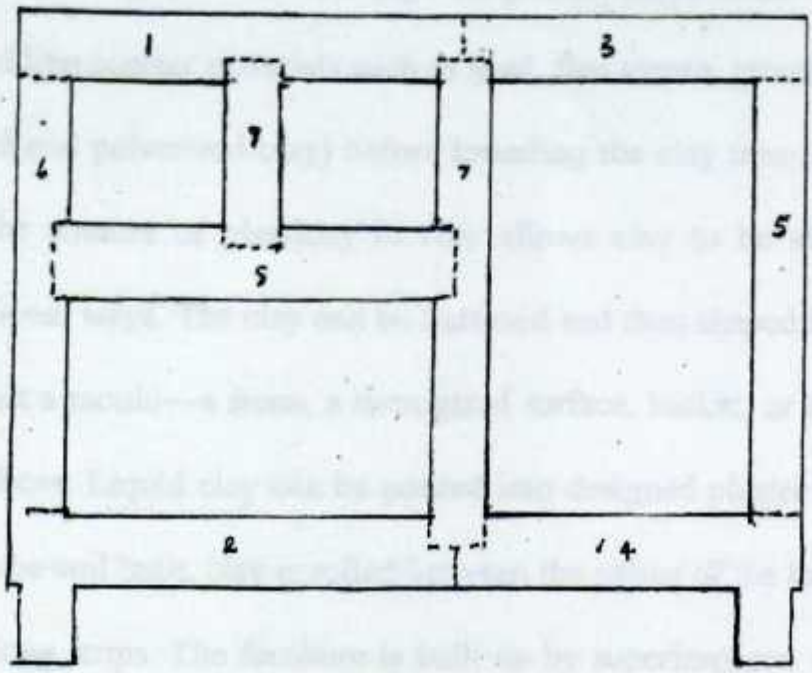

Fig 6. Clay cabinet

Very large objects could be constructed in parts to be joined together after backing. The parts and how they could be joined has been demonstrated with marks and numbers.

This object and similar ones are suitable for kitchen or as living room cabinets.

Preparing and shaping the clay.

The artist can remove some of the coarse foreign matter natural in secondary clays. A certain amount of coarse grain in the clay helps the ware to retain its shape during firing, and artists using fine-grained clays often "temper" the clay by adding coarser materials such as sand, fine stones, ground shells, or grog (fired and pulverized clay) before kneading the clay into workable condition. The amount of plasticity in clay allows clay to be shaped in several traditional ways. The clay can be flattened and then shaped by being pressed against a mould—a stone, a corrugated surface, basket, or any such designed surfaces. Liquid clay can be poured into designed plaster moulds. Furniture can be coil built, clay is rolled between the palms of the hands and pressed into long strips. The furniture is built up by superimposed strips. A ball of clay can be pinched into a desired shape or built up to produce furniture.

The most fascinating furniture-making technique is wheel throwing. Parts could be joined with slip to produce colossal pieces.

The potter's wheel, has a flat disc that revolves horizontally on a pivot. Both hands on either side of the clay ball shape objects by catering the clay ball, pressing and pulling a ball of clay on a rotating wheel head.

Many techniques were used to produce the samples of furniture in clay for this project. These fall into three categories, namely, hand building, throwing and slabbing. Hand building also known as the 'pinch method'

techniques relate to craftsmanship, the throwing technique, is commonly used by commercial manufactures. Hand building, by additive method were used in constructing objects for this project

Pinching

This is a process of pressing the clay between the fingers to create the desired shape. Pinching requires no tools just the lump of clay and the potters hands. However, it remains a limited technique because it is so slow and difficult to produce wares in appreciably large quantities.

Slab Construction

It is another versatile technique. It consists of rolling out flat sheets of clay, cutting them to size, and joining the slabs. Box shapes are the most obvious application for the slab technique. However slabs can be rolled, curved, bent and distorted in many number of ways to create the desired expressions. The employment of this method of production calls for dedication most especially in joining the slabs together. The method of building clay furniture object is done be rolling slabs and cutting or slicing them to size The cross section of each slab is cross – hatched and clay slip applied before joining was done. It is important that the slabs are of equal hardness before they are joined together or else differential drying will cause cracks to develop. This method of construction is used in building large forms desired in furniture production. Majority of the ceramic furniture pieces constructed were in slab method.

Plate 50. Joining slab.

Like woodwork, the parts of clay furniture pieces could be cut out and joined. This is done when the clay is leather-hard and could be handled.

1.roll out the slab

2,With a ruler and a graffito measure the designed parts and cut them out with the same tool.

3. Using a graffito scratch the ends to be joined

4. Apply slip to the scratched edges.

5. Put the parts together and press gently but firmly.

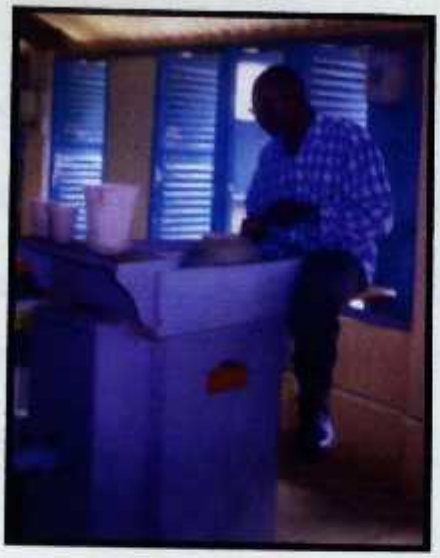

Plate 51 (a & b) Throwing/ turning.

Throwing and turning on the potters wheel provide the most efficient means of creating round symmetrical shapes required for furniture production. This is a highly skilled technique requiring months, if not perhaps years of practice to achieve competence. Simple forms emerging from the basic cylinders go through many transformations as the potter experiments and rejects different ideas before setting on the most intriguing shapes. Cylinders are combined with varying sizes of slab and flat plates and joined with slip to create very fascinating furniture pieces.

Decoration

"The most common technique of pottery decoration in Ashanti is that of incising and impressing. These are done with some simple tools including pointed sticks, snail shells, a piece of wood with serrated tip and a stone. These decorations are done when the pots are leather hard. Some irregular textures are also made on the pots during their making by marks, scratches or impressions left on them from corn cobs and other tools....The colours they chiefly apply to the pots are red, red ochre from haematite (ntwona) rocks and white clay. 8

The furniture pieces were decorated before firing. When the clay was half dry and somewhat stiffened (leather hard), the body was incised, stamped and pressed with lines and design patterns. The pieces were made smooth by burnishing technique.

"The most common technique of pottery decoration in Ashanti is that of incising and impressions." 9

Drying and Firing

To fire without breaking, the clay must first be air dried. If the clay is thoroughly dry pottery can be baked directly in an open fire, at temperatures 650 -750 degrees. Local pottery is still made in this way. Wood fuel and latter gas, coal and electricity, have always required up solute control to produce the desired effects in hardening clay into earthen ware, stone ware or biscuit. 10

The ceramic furniture pieces were spread on shelves to air dry for two weeks. Firing was arranged at the ceramic studio of KNUST. All the works were fired in bulk using the electric kiln. The firing took four days.

Spraying;

The researcher preferred to experiment on the use of paint and vanish on ceramic furniture instead of glazes. The target population for the experiments are schools and small scale manufacturer who may find the use of glazes as a constraint.

Small quantities of paint were mixed gradually with similar quantities of lacquer. Dissolving agents like spirits and turpentine are added in larger quantities to make the solution lighter for spraying. Surfaces of the objects are cleaned before spraying is done.

Production processes of ceramic furniture pieces created by the researcher.

Object 1. The slave,

Medium, Clay.

Size; 14" by 16"

The slave is an expression of the abuse of human freedom. 'The slave does not look into the master's face, in severe bondage'.

The object was constructed from a combination of slab work, modelling, and throwing on the porter's wheel.

1. A pot- like shape was thrown on the wheel.

2. With the aid of modelling tools, a human head and arms were modelled out of the side of the pot.

4. The seat and the base were cut out in slabs.

5. The parts were joined together with slip.

6. Firing was done together with other wares.

7. The work was finally sprayed with metallic colours.

Object 2.

Medium; Clay

Size; (3 by 3 by 5)

Imitation of the local Ghanaian kitchen seat – originally made in wood.

The object was made from slab work and joined with slip.

Activity; 1. roll out a slab.

2. Measure the designed parts and cut them out.

3. Join the parts.

4. Decorate the work and dry it on shelves.

5. Bake in an electric kiln.

6. Paint or spray.

Object 3;

Medium; Clay

The school /Office chair. The seat was constructed from five cut-out slabs. The slab pieces were joined with slip applied to the edges to be put together and pressed gently but firmly. The edges were cleaned of slip that appeared after the joining. The work was polished.

When the work was leather hard it was burnished to give it a smooth surface.

Object 4 (4" by 2"by 2") The executive garden seat

The seat was constructed from two slabs.

The slab was made thicker than other seats. (1.5" thick).

It was a mixture of Afari and ball clay (1. 1) bases

The clay was well kneaded into a homogenous paste.

The slabs were rolled out and fired in an electric kiln.

The biscuit parts were later glued together.

The work was polished (sand papered) and sprayed.

Object 5 (2" by 7"by 4")

Palace seat (Ahinfie dwa) to be used by the queen mother.

This object was constructed from one slab.

The slab was folded into shape to construct a traditional stool suitable for chiefs.

No part of the work was joined, so that slip was not applied. The piece was polished, dried and fired.

Object 6 (10"by 8"by 8")

Coffee table (composite furniture- life size)

The top was cut out from a cement slab and the base is wood.

1. Make a wooden frame of the desired size suitable for work.

2. Pour water on raw cement and stare until a good past is obtained.

3. Use a graffito to design the object.

4. Use a hark saw to cut out the desired shape.

5. Use files to polish out the edges and create any designs as may be desirable.

6.Design a wooden base

7. Join the cement top and the wooden base with glue.

8. Decorate by painting and spraying.

Object 7. (4" by 3 by 3")

State chair; (copy; Pontius Pilate, Rome-the trial of Jesus)

The object was developed from four clay slab pieces.

The parts were joined with clay slip.

Excess slip was wiped off the joint areas. The work was polished by burnishing process. The piece was air dried and fired in an electric kiln.

Object 8 (top seat 10" in diameter, base cone,14" high).

The Drum seat – name suggested from the shape.

The seat was thrown on the wheel in two parts, the conical body and the top disk. The cone determined the height and the top seat determines the size of the piece. The top disk was over-turned to cover the cylinder and a seat was created.

The parts were joined with slip when the object was leather hard. Decorations were done during this time. The Gye-Nyame sign was cut out around the middle section.

The work was painted and sprayed.

Object 9;

Dressing seat; Ahumfe (beauty).

Thrown on the porters' wheel. Ball clay from Kibi in the Eastern region was tested.

This stool was thrown in three parts as follows; The top seat disk – 10 inches in diameter. The base was in two parts of 7" (seven inches}and 5" (five inches) respectively in height.

Object 10, Life size;- top,(14" by 18")base;-(7""by 7" by 13").

The side table (composite furniture).

Cement was cast out from a wooden mould.

The cement slab was removed and design was cut on the surface with a scriber.

A hack saw was used to cut out the desired shape.

Rasp files were used to polish the edges and create designs on the surface.

The completed top was mounted on a wooden base with glue

The base was reinforced with a thin but strong flat base.

the work was polished and sprayed.

Object 11. (18" by 8" by 14"). Srene stool,. also nicknamed,

'Lean on me' Name suggested from the design.

Constructed from Nfensi clay.

The object was constructed from ten pieces of cut out slab.

The top seat and the foot base have been doubled.

Slip was used to join the parts when the object was leather hard.

A vigorous burnishing was done to give it a glossy appearance.

The piece was fired in an electric kiln

It was painted and sprayed.

CHAPTER FOUR

DICURSSION OF RESULTS

The previous chapter discussed the general methodology, materials and processes applied to this project. This chapter discusses the results of experiments and the various activities carried out by the researcher.

The proof of the hypothesis on ceramic furniture has been a very fascinating exercise. The mere mention of the name ceramic furniture created laughter among fiends and my classmates. I hope what has been explained will serve as a proof to the fact that clay is a favourable alternative to wood and other materials in the production of furniture.

Data collection.

The researcher's efforts to obtain literature from libraries proved futile.

There was virtually no literature on ceramic furniture. However, there was abundant literature on ceramics and furniture. This mitigated against the acquiring of extensive literature on the subject. Great encyclopaedias like the Encarta 2003 edition is silent about the subject of ceramic furniture. The inter-net service however provided just enough needed information. Literature gathered showed that the subject is under serious research world wide. The research into the subject is gaining more grounds. Firms in China and America have gone steps head to export clay furniture wares.

Workshops held in Aba House in Nuugua – Accra become pace setters for an effective take off an in-depth research into ceramic furniture or clay furniture for that matter in Ghana. The research proved that clay is a suitable

material for exploring and producing furniture. Clays like Afari clay or similar clays with flux is strong enough to produce furniture pieces. Besides the clay fires at low temperature. The Afari clay in particular was found to produce the right shapes without warping or much shrinking.

Experiment on the identification of an appropriate clay material for the project was important. The experiment showed that, most clays in Ghana could be used to produce some furniture. The weight of the object must be reconciled by the thickness of the slab used. Good firing also reduces the weight of the objects considerably.

The clay tests have been analyzed as follows.

Clay Tests

Type	Ball clay-Kibi	Nfensi clay	Afari clay
Plasticity	above 70%	70%75%	60% 70%
Bending clay	No break	No breaks	Cracks
Strips.	No breaks	no breaks	breaks
Throwing	above 70%	above 60%	poor
Modelling	good	good	very good
Warping	warps	warps	no warping
Drying	shrinks	shrinks	no shrinkage
Firing.	high temp.	high temp.	Low temp.
Durability	durable	durable	more durable
Weight	light	light	heavy.

Mixtures.

The clays were mixed in selected ratios.

1. Ball clay + Afari clay ratio: 1 : 1. = good for modelling.

2.Nfensi + Afari " 1 : 1 = good for modelling.

3.Ball + Nfensi " 1 : 1 = porters clay.

Not mixed.

1. Afari clay. Plastic but has much flux materials that makes it unworkable on the wheel.

2.Ball clay Plastic and workable on the wheel.

3. Nfensi clay. Plastic and workable on the wheel.

This analysis helped the researcher to determine and categorise the available clays.

Clay is very interesting material to manipulate. It is therefore a viable medium for the production of ceramic furniture. Clay workers must note that clay wares could get destroyed before baking.

Plate 52 Lithe turning

The Lithe-turner could create beautiful designs.

Woodturning was a very fascinating exercise, though the activity could be injurious. Care must be taken when turning wood. Wood is a good composite material with clay.

The paint and lacquerer used for spraying was proper. This is because it was easy for any observer to know the material used. After the painting and spraying, it was realized that the works took a normal smooth texture. Burnishing sealed up all tinny flux materials that hither to must have made the wares look rough.

Natural colours used were just appropriate. The colour gave the wares the look of wood. People who saw the final product argued their disbelieve that the pieces were made of clay.

Cement products were carefully handled. The experiment to work in pure cement was fruitful. The pieces were smooth and the texture was good enough to be shaped with the appropriate tools.

Ceramic furniture production needs a dedication and a commitment to create because cement sets fast and there is no known method of preserving cement that is already mixed with water.

To make the work interesting and meaningful, designs already familiar with Ghanaians were adopted. The Adinkra designs were mythical and cultural that they could serve any purpose of home use, office use, environmental use and for worship.

There was much speculations as to what clay furniture wares would look like. Production of furniture from clay with a good appeal could be obtained by artist with high sense of creativity and the love for clay.

The pieces produced much excitement. Aesthetically the physical appearances of the sprayed pieces turned into wood, metal or plastic. Whether the clay was used singularly or in composite with other materials, the fact remains that clay furniture forms are interesting. The Adinkra shapes combined with geometrical shapes gave the pieces a contemporary touch.

APPRECIATION,

The researcher brings to the reader an object to object appreciation. It is hoped that the accompanying pictures will help to speak louder the concept of ceramic furniture.

Plate 53 Object 1. The slave.

The work was produced from a combination of three clays of equal measure; Nfensi, Afari and Kibi (ball clay). It was built out from clay slabs and joined with slit. The combination was good and the result after firing was also good.

The object is named the Slave because of the expression of slavery that is portrayed in the work.

The base is a round bowl like shape, turned up side down. On the either side of the over turned bowl shoot out two weird faces. Just above the faces two hands shoot out to grasp the edges of the seat.

A large clay slab seat is resting on the over turned bowl. It is fixed to the base with slip. This seat is particularly suitable for the executioner. It is a mythical object suitable for an object of worship.

Plate 54 The Kitchen Stool; Mfensi clay.

Slab work.- Five clay slab pieces were joined with slip. This is an imitation of the Ghanaian local stool popularly used in the kitchen. It is strong and firmly built to resist the vigorous antics in cooking. Found in traditional rural homes. These stools are in different sizes. The male stool is larger than all the rest. They are graded in that order for all including the toddlers. A very important function of this seat is that ,it has turned to be school furniture for school. Children sit on the smaller ones and write on the big

ones, supposed to belong to their fathers. This is symbolic of the family structure.

Plate 55 Object 3.

The School / Office chair.

Clay slab; Cut out slab was joined with slip.

The chair was built out of five clay slab pieces. It has arm and back rests that renders occupant to be comfortable and remain seated for a long time without encountering any problems associated with wrong posture. Unlike the kitchen seat the School / Office chair is suitable for both urban and rural communities of those who could afford.

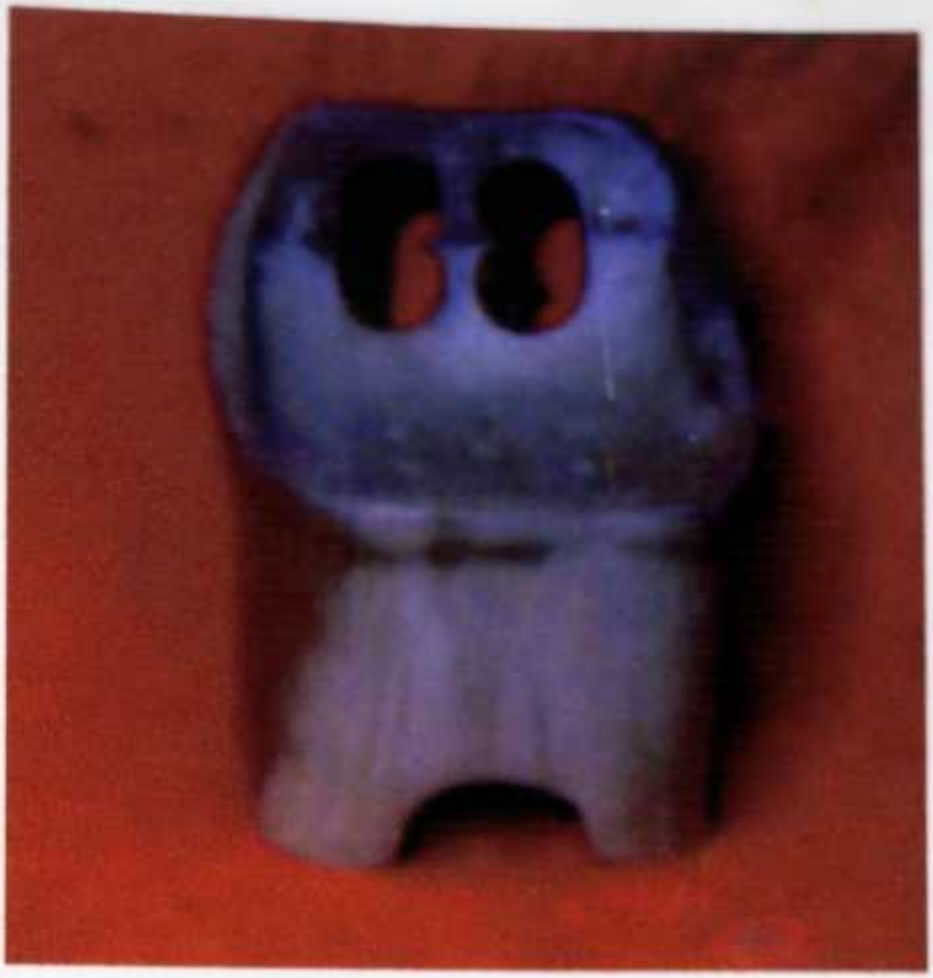

Plate 56 The Executive garden seat,

This chair is the result of a clay test of Afari clay and Ball clay.

Tests conducted on clay have shown that Afari clay is strong but porous when fired. There was therefore the need to experiment to reduce porosity in Afari clay. The mixture of the two clays helped to press down the flux materials in the clay and smoothen the surface of the ware very easily during burnishing. With this the object is now suitable for out door furniture. It can now resist being soaked. The spraying made the surface of thr pieces glossy to prevent it from soaking water.

The seat is also very suitable for a garden seat.

Plate 57 Object 5. Palace seat.

Created from a clay slab rolled from a mixture of Mfensi clay and boll clay from Kibi.

The design portrayed hidden things in the life of women. The chambers created tell of the complex physical nature in which women are born.

Ii is a fertility seat, hence the seat of the queen mother. The object is made from one strip slab of clay. This design was selected among many trials.

Aesthetically the movement created between the positive and negative areas holds the observer's attention with an unending eye movement.

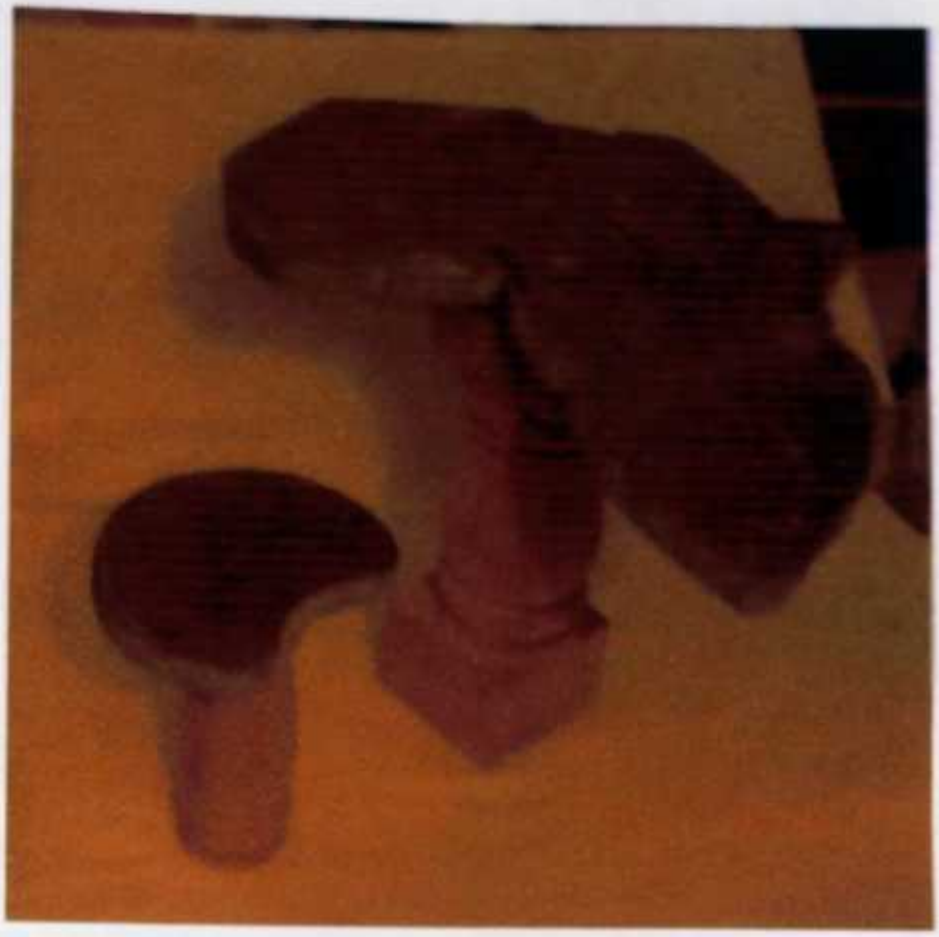

Plate 58 Object 6. Coffee tables, (composite furniture 1.)

Cement top on a wooden base.

The experiment showed that coagulated cement can be carved or cut out to shape. The cement top is carved into a heart with a base delicately designed in wood. This object has the tendency to be placed on top of shelves to carry decorative flower pots and objects. The work is a unique piece of art for home decoration. The combination of wood and cement in furniture production will go a long way to exhibit more intricate pieces.

(permanent bases have been created for these objects).

Object 59 State chair; (copy – Pontius Pilate – Rome)

This seat was copied in a flash sight during the Esther film show on the trial of Jesus Christ. It is made from cut out clay slabs which were joined with clay slip.

This chair is very significant in two ways. A state chair for that matter represented the level of craft and furniture designs of the period.

Secondly, the seat represented protection and comfort. The dejected mood with which Pontius Pilate slammed himself into the chair indicated his mental state. As if protected he sat comfortably to watch Jesus taken away.

The chair was constructed from five cut out clay slabs. It is a strong firm and can last through the ages.

Plate 60 The Drum seat.

Clay work; (Mfensi clay) Thrown on the porter's wheel.

' Any body who is comfortable with me must also beat and drum it that I am capable of producing furniture, strong, beautiful and reliable. My bowels carry and protect the relics of ancestry'

The Drum seat was created on the porter's wheel. The top was a large plate turned down to cover a hollow cone. The seat could be turned down to serve as container. This seat when placed beside the big arm chairs will enhance beauty and serve as additional furniture.

Plate 61 Ahumfe (beauty) Dressing seat.

Produced from Mfensi and Kibi Ball clays.

The seat portrays the concept of African beauty with an elegant and ringed neck. It is a female seat.

The seat is to be used as dressing seat for the dressing mirror.

The combination of the two clays has produced a strong terracotta ware that is capable of withstanding heavy weight.

(The seat will eventually carry a foam cushion)

Plate 62 Srene stool (moon stool) Exclusively for the Asantehene.

(see Plate 10)

Constructed from clay slab pieces.

The design was adopted from local Adinkra and stool design.

In the design, the top seat and the bottom are re-enforced by a double layer of the clay slab.

The seat is stout and strong enough to be able to withstand the weight of any occupier.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND SUGGESTIONS

Summary,

Related literature on the subject of ceramic furniture show that the subject is under going extensive research. The use of ceramic material for furniture production is an undeniable substitute for wood. Furniture pieces made in clay and baked are equally adequate for both interior and outdoor use. The subject of designing and producing furniture in clay and cement is interesting and challenging. The research has proved that production of composite furniture consisting of glass, cement, clay and wood is possible.

Information gathered mostly from the inter-net showed a greater attempt to explore clay furniture all over the world.

Tools and equipment for clay furniture production are cheap and could be locally procured, some of them could be fashioned out from the carpenter's workshop.

Experiments were carried out in activities of modelling, slab work and tests of clay to find an appropriate clay body suitable for furniture production.

The designs created or adopted by the researcher yielded fascinating and aesthetically pleasing results.

The results obtained showed that Afari clay could be used to produce furniture. The painting and spraying done on the miniature pieces brought their surface look close to wood.

Conclusion;

In conclusion, the research seeks to remind Ghanaians to realize the need to start implementing issues that relate to the depletion of the natural forests which are the sources of wood, a major material for the production of furniture. A large percentage of the Ghanaian traditional home thrives on clay wares including furniture. Soon the clay furniture fashion craze will come and every body shall wish to own clay furniture pieces in their homes.

This research project has proved the efficacy of clay in its ability to be explored for domestic wares including furniture. Documentation on the history of furniture, have proved that clay furniture has existed in various forms. From the Asante kingdom in Ghana to Rome and Israel, furniture in terracotta have influenced our lives in various forms.

Clay is one of the cheapest materials in Ghana. It abounds in all communities. It is easily shaped when moist, rigid when dry and strong when fired. These attributes are enough to recommend an in-depth exploration into ceramic furniture.

Ceramic furniture wares produced for this project have settled the proof of the hypothesis on ceramic furniture production. The researcher wishes to be categorical in his assertion that clay and cement are appropriate materials for the exploration of ceramic furniture wares and an alternative material to wood.

Recommendations

In order to make the subject of ceramic furniture popular in schools and colleges, which offer ceramics, the following recommendations should be taken note of:

1. Ceramic materials should be used to produce furniture since it is an exciting way of enhancing the beauty at home.

2. Ceramic producers should collaborate with furniture producers to introduce the art of producing furniture in clay into the Ghanaian market.

3. Ceramic manufacturers and exporters should exploit this research project in a search for alternative exportable commodity as a foreign exchange earner.

4. The art of Ceramic furniture should be introduced into the Visual art programme in Senior Secondary Schools.

5. Tertiary Institutions like the College of Art KNUST, the School of Art Education and Design in the University of Winneba and the polytechnics should include ceramic furniture into the Visual Art syllabus.

District Assemblies should try to involve NGO's in the provision of Vocational Education in Ceramic furniture.

Finally, I am proud to be associated with the pioneering research into the subject of Ceramic Furniture. I recommend any future attempts into further research into the subject of ceramic furniture.

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