

FORMAL AND SPATIAL VARIATIONS IN A TRADITIONAL WALLED CITY:

ZARIA, NIGERIA

by

Robert Keith Rowan

B.A. Williams College
1977

Submitted in Partial Fulfillment of the
Requirements for the Degree of

Master of Architecture

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
June, 1981

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ABSTRACT

There are many examples of built environments created by the people who live in them which possess a unique beauty of their own. A common trait in the vernacular architecture of various cultures is a balance between the built form, the environmental setting, and the people's way of life. In the walled city of Zaria, located in northern Nigeria, the inhabitants created a built environment that not only responded to their functional and social requirements but also possessed many variations of their traditional forms and many diverse spaces surrounding them.

The traditional dwelling type of the inhabitants is examined and the social and cultural forces which have influenced its form are discussed. The variations of the forms and spaces associated with these traditional dwellings are presented as well as how these dwellings are organized in the city. An example of the formal and spatial variation which occurs in the city will be presented and analyzed in a case study.

Thesis Supervisor: Tunney Lee
Title: Associate Professor of Architecture

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In Zaria, I received invaluable support and assistance from Hajji Khalil Mahmud, the university librarian at Ahmadu Bello University, and Dr. Fredrich Schwerdtfeger, an architect teaching in the Department of Architecture, who has done much research and continues to do so, on the walled city of Zaria. Much of the background information on the social structure and the city organization used in this thesis was

acquired from Dr. Schwerdtfeger's research, which has been published in Shelter in Africa. Without the support of Hajji Mahmud and Dr. Schwerdtfeger, the information in this thesis could not have been attained in the brief time that I had to spend in Nigeria (six weeks).

I also received assistance from the dean of the Architecture Department, Dr. Adeyemi; from Professor Barbara Urbanowicz, SARP Warsaw, also in the architecture department, who has allowed me to use for my analysis building plans from her Ph.D. Thesis (Ahmadu Bello University)--Selected Aspects of House Form in Zaria Urban Area; from Dr. Juchnowicz, head of the Department of Urban and Regional Planning, who allowed me to document maps of the walled city; Mr. Abdullahi Saidu Bello, an architecture student who assisted me in my field work and Mr. Mohammed Abubaka who also assisted in my field work and was invaluable as an interpreter in conducting interviews with residents in the walled city.

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To my wife Judy,
who supported me throughout this project

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INTRODUCTION



This thesis is about the vernacular architecture of a traditional West African city, the walled city of Zaria, which is located in northern Nigeria. This traditional city is composed of mud walled buildings, called compounds, which have many variations and have many different spaces surrounding them. The compounds are the traditional dwellings of the inhabitants who are Hausa-speaking people.

The compounds reflect the social structure of the society which is based on agnatic kinship relations. They also incorporate the Muslim practice of purdah, which requires married women to be in seclusion behind the walls of compounds. The compounds do not have a standardized building form and are

characterized by irregular shapes.

The walled city of Zaria can be considered an organic city because its form did not result from an urban design or masterplan. Its form evolved from the irregularly shaped compounds. As a result of this type of development, the city appears to lack order and resembles a maze of irregularly shaped buildings. However, an order does exist in this environment, for it has a religious, social, political, and economic structure as well as a visual and physical order among the buildings.

In an environment consisting of a single building type, walled buildings, there is a surprising abundance of variation of forms and spaces. The diversity found among these buildings animate and

enrich the environment. This vernacular architecture responded to the usage needs and culture of the inhabitants, allowing for individuality, which resulted in a humane environment for those who lived there.

This project stems out of my personal interests in the organization and architecture of pre-colonial West African cities. The purpose of this case study is to provide insight on this little researched subject, by presenting one of the various types of African vernacular architecture and city organizations.

I was able to conduct this research by receiving a travel fellowship from the Aga Khan Program for Islamic Architecture at the Massachusetts Institute

of Technology and Harvard University which was established by his Royal Highness the Aga Khan. I travelled to Nigeria in the fall of 1980 for the month of October to late November. In addition to visiting Zaria, I was also able to visit briefly several other cities, Kano, Kaduna, Lagos, and Ife. However, because of my limited amount of time in Nigeria (six weeks) I only conducted research on Zaria.

The documentation for this project consisted of taking black and white photographs and color slides (two 35mm cameras) and doing sketches of the various elements in the walled city. These elements included the walled buildings, the compounds, the spaces between the compounds, the principle

areas and topographical features of the city. I was also able to gain information on the built environment from several residents of the city through interviews I conducted with them. The historical and cultural background, the plans and other measured drawings were acquired from the research conducted by others. Because of the dangers of disseminating false information from a relatively brief research period, my observations are personal ones based on the documentation conducted. All factual material, used primarily in the discussion of the history and the culture of the inhabitants, has been footnoted.

In doing background reading, I found descriptions of the mud walled

cities in northern Nigeria, Kano in particular, and several on Zaria at Ahmadu Bello University. However, what I found lacking in many of these studies and descriptions was information on the architectural qualities, if any, which exist in these environments composed of mud walled buildings. In conducting my field work, I was interested in finding out the answers to this question and others concerning this type of built environment. Some of the major questions were:

- o how did this kind of environment come about?
- o how is the culture reflected in the architecture?
- o how are the buildings and spaces used?
- o how does use influence the form?

- o are there relationships between the buildings and spaces?
- o is there an order or pattern in the environment?

I have attempted to provide answers to these questions and have included maps and other drawings to give the reader a description of the city and my analysis of formal and spatial variations in this walled environment.

The thesis has been organized in three major sections which discuss 1) the background information on Zaria, 2) the traditional dwellings, the compounds, and 3) the organization of the compounds in the city. The formal and spatial variations are discussed in sections 2 and 3. The goal of this project is to present to architects and other individuals interested in African

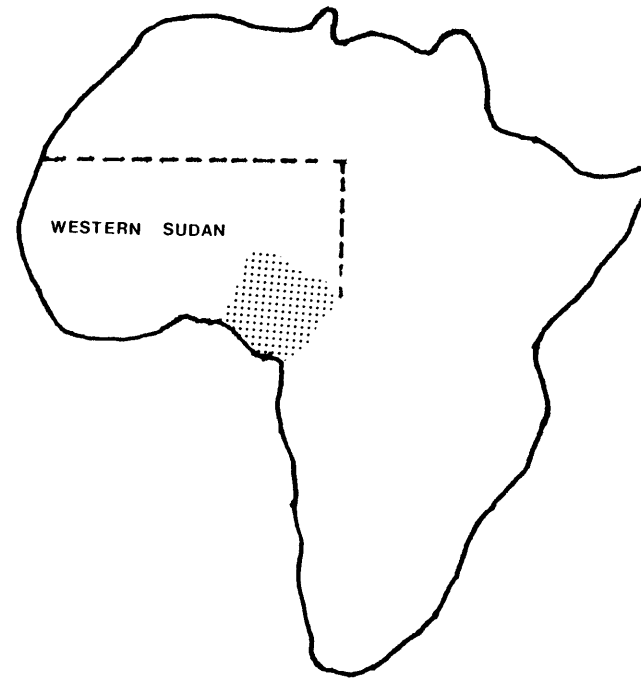
vernacular architecture, some of the qualities in this city, many of which have relevance today in contemporary architecture.

BACKGROUND INFORMATION

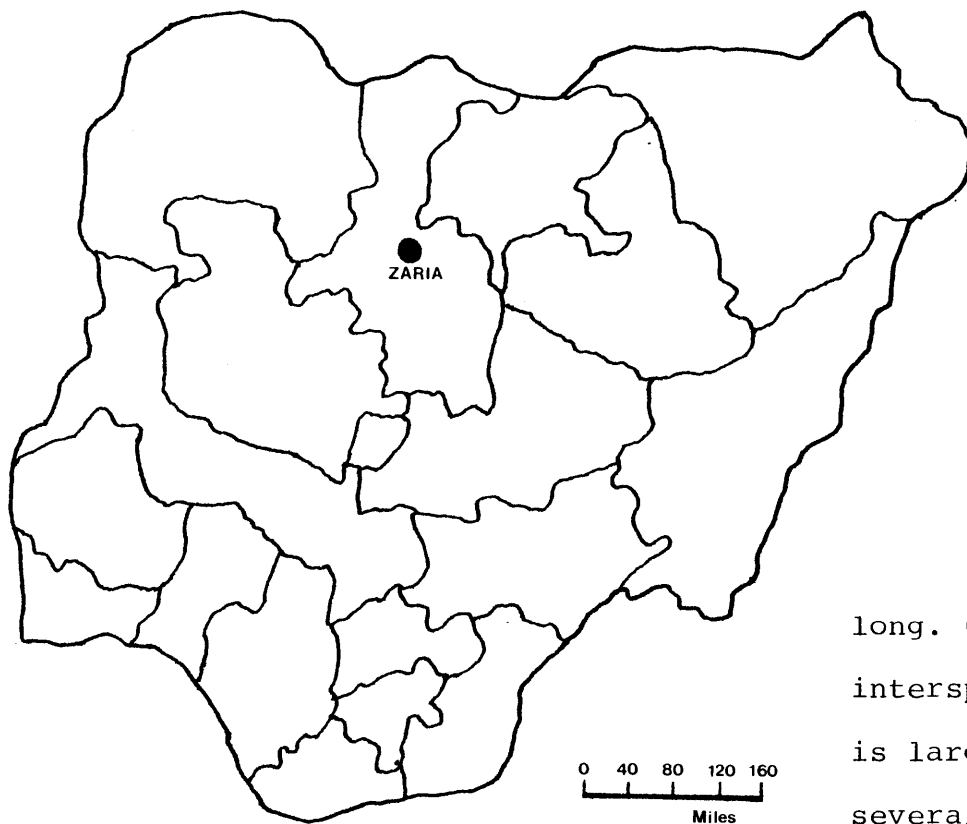
LOCATION

The walled city of Zaria is in an area known as Hausaland, which is in northern Nigeria. The Federal Republic of Nigeria lies on the west African coast, at the Bight of Benin, the cusp of West Africa where the Atlantic coastline turns southward from its westerly course. Historically, this territory was part of an immense land area called the Western Sudan, whose boundaries were the Atlantic Ocean to the west, Lake Chad to the east, the Sahara Desert to the north and the tropical rain forest to the south.

Nigeria has a diverse topography. In the south, along the coast, is the



mangrove swamp belt and tropical forest. Moving north, the environment is open savanna with some hilly ranges. This develops into an undulating plateau with hills of granite and sandstone, and culminates with the northernmost borders stretching out to the Sahara Desert.



Zaria is located in the center of northern Nigeria and is more than 400 miles from the sea. It is situated in the middle of the high rolling plains of Hausaland (lat. 11.07,

long. 0744). A striking land form interspersed throughout these plains is large granite hills, often rising several hundred feet, which are frequently referred to as inselbergs. These large granite hills were very significant in the founding of the ancient Hausa cities (refer to discussion on city organization and major components).

THE PEOPLE

Nigeria is composed of numerous ethnic groups, the principal ones being the Hausa, Yoruba, Ibo, Fedo, Fulani, Kanuri, Ibadin, Tir, Itrekeri, Ijaw, Urhobo, Efik, Igbirra, and Ogini.¹

The people in northern Nigeria are generally referred to as Hausa, but it is incorrect to assume that they belonged to a separate race or nation. Hausa is applied to people who speak the Hausa language and adopt the Hausa mode of dress and life in general.² For example, the people who live in the walled city of Zaria are considered Hausa, however, they fall into two main eth-

nic groups: The Hausa, who are the indigenous people, and the Fulani. The Fulani are subdivided into three groups:³ Fulanin daji (bush Fulani), the Agwai (semi-settled Fulani), and the Fulanin gida (house Fulani) who have formed the ruling class of Zaria since the early nineteenth century.

The predominate religion in Hausaland is Islam. However, prior to the nineteenth century, Islam was not the dominant religion in the region. Up until the early nineteenth century, the inhabitants of Hausaland practiced both Islam and their own indigenous pagan religions. This changed during the jihād (holy war) of 1804-1810, when the Fulani (who are Muslims) conquered Hausaland under the leadership

of Uthman Dan Fodio, a Fulani religious leader.⁴ As a result of the jihad, Islam emerged as the dominant religious and political force in northern Nigeria.

The political power of the Fulani rulers came to an end by the early twentieth century when the British established colonial rule over the region. The British forces under Sir F.D. Lugard, later Lord Lugard, took control of Zaria in 1901-1902.⁵ British control lasted until the independence of Nigeria in 1960.

THE ENVIRONMENT

Zaria is located where two di-

stinct air masses meet. One from the north--the Sahara air mass, is dry and continental in origin. The other air mass, from the Atlantic in the south, is moist, cool, and equatorial maritime in nature.⁶ As a result of these air masses, two predominate seasons emerge, the dry season and the wet season.

The dry season, the result of the Saharan air mass, lasts approximately from late October to March.⁷ This is the winter season and the season of the harmattan, an exceptionally dry wind. Since the architecture of Zaria is predominately mud buildings, most building construction occurs during the dry season.

The wet season, the result of the moist, cool Atlantic air mass, lasts approximately from late May to October. This is a rainy season which develops monsoon characteristics during the summer months.⁸ The wet season causes rapid deterioration of the mud buildings of Zaria. Therefore, the structures require constant yearly maintenance.

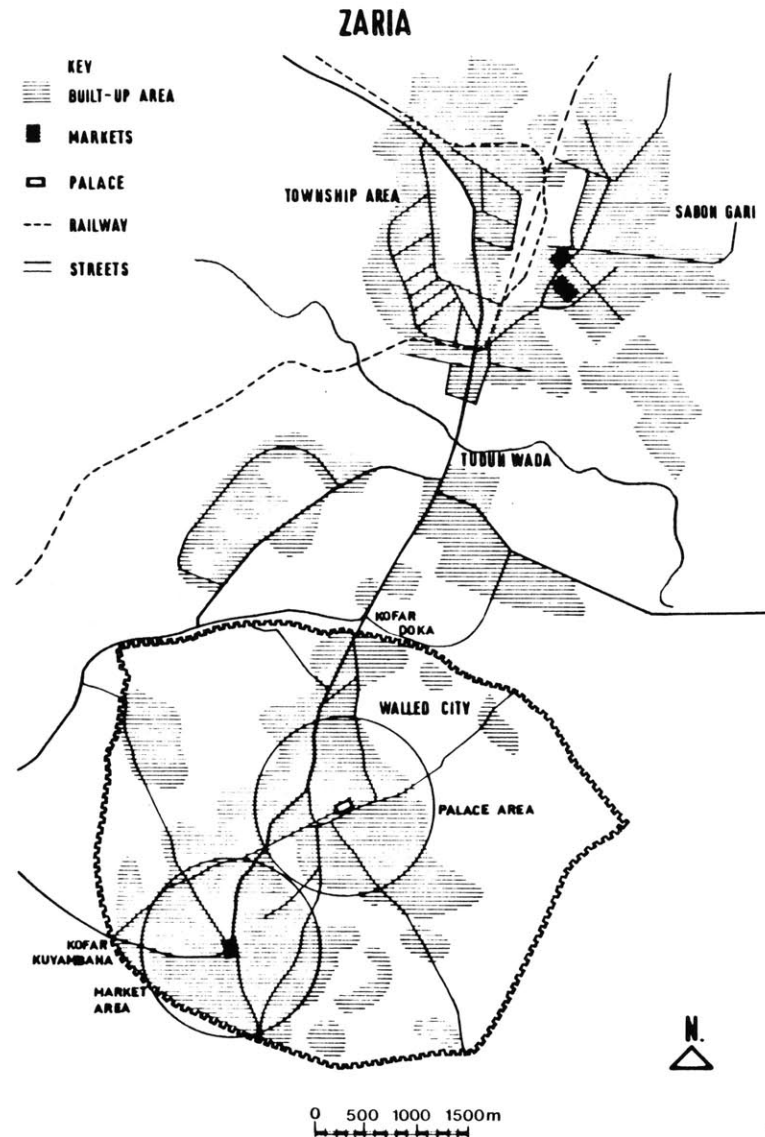
The soil used to build the mud structures of Zaria comes from the red laterite soil which is dominant in this region. This soil has a high clay content. During the rainy season the soil tends to become waterlogged, but during the dry season the soil dries out and tends to crack.⁹ Due to this extreme change in the moisture

content of the soil, caused by the dry season and the rainy season, these buildings must be maintained on a yearly basis. Without this constant upkeep, the buildings would deteriorate rapidly.

In addition to mud, vegetation is a very useful building material in Zaria. The most useful vegetation in this region is the raphia, or fanpalms, which are used widely for roof beams. Their usefulness stems from the fact that they are resistant to termites. Also, tall grasses up to six feet in height, are used for roofing and mat weaving.

GENERAL DESCRIPTION OF WALLED CITY AND
ITS ENVIRONS

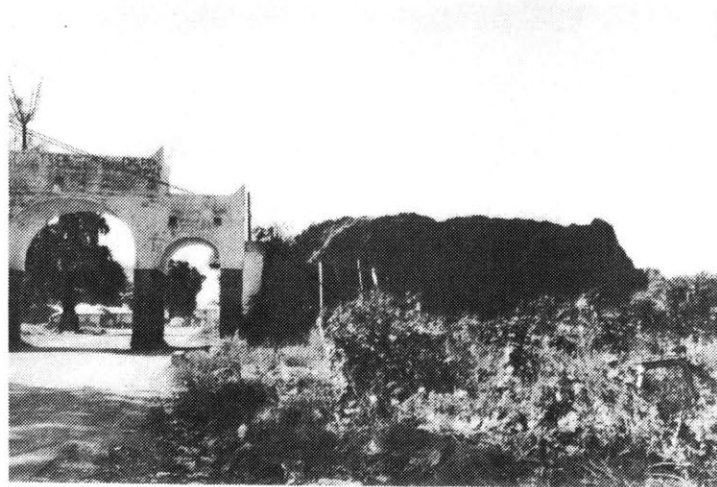
The walled city of Zaria consists of the remains of a wall that surrounds an area containing both open land and mud walled buildings. The open land, which is almost half of the total area within the city walls, is particularly used for farming, with the remainder being uncultivated. The mud walled buildings form a dense settlement where the buildings are connected by narrow winding paths. The city, being built from the red laterite soil, has an interesting continuity between the actual buildings and the earth from which they were built. Outside of the city walls are three other settled areas,



Source: Housing In Zaria, F. Schwerdtfeger

Tudun Wada, Sabon Bari, and Samaru.

The wall which originally surrounded the city was roughly circular in its layout. This wall was constructed in mud and incorporated eight gates. Although the date when this wall was constructed is not known, it is generally believed to have been built by the late eighteenth century.¹⁰ The walls, today, have deteriorated to the point where only large mounds remain and the gates are only large gaps in these mounds. There is, however, a better preserved fragment of the old wall which is still standing at the main gate, Kofar Doka. This fragment is approximately twenty to twenty-five feet tall. The size of this fragment is an indication



that the original wall surrounding the city was undoubtedly formidable.

A large open land area is located immediately behind the main gate (Kofar Doka). This land contains a few farmed areas, but is predominately uncultivated today. In the past, this open land area was necessary for food production, storage, and the accommodation of people who would seek

refuge in the walled city during times of war.

The densely settled areas are roughly in the middle and southern portion of the city. Within these densely settled areas are the palace of the traditional ruler, the emir, the Friday Mosque and the city market. The buildings in these densely settled areas are almost entirely mud walled structures, with the walls averaging from seven to eight feet in height. Behind these walls are seen the tops of conical thatched roofs and trees. These mud walled buildings are generally referred to as compounds and are dwellings of the inhabitants.

The buildings are located along

paved and unpaved dirt winding roads and are free standing units with many narrow foot paths and passages laced between the walls. The majority of these buildings are constructed from the local red laterite soil, thus the total environment is dominated by a reddish brown color. A visual continuity between the buildings and the land is a result. This evokes a picturesque image of the buildings



emerging as natural forms in the landscape. My initial impression of the walled city of Zaria was one of walking through a red clay maze, behind whose walls are seen the conical tops of thatched roofs and trees.

Located just outside the walled city to the north, is a residential area called Tudun Wada. This area was laid out on a grid system in 1914 by the British.¹¹ Tudun Wada was originally founded as a residential area for northern Nigerians who were not native to Zaria.¹² Although laid out on a grid, there are many walled compounds and many of the houses display the traditional building method of mud construction.

The next settlement area after

Tudun Wada is Sabon Gari (New Town), which was the principal European township area which emerged when the railway reached Zaria by 1911.¹³ This area was an attempt by the British to introduce concepts of English town planning.

Zaria Township is purely colonial and illustrates early ideas in planning land use zonation, plot size and street layout. The buildings are either those of the British rural or suburban tradition modified by tropical conditions and colonial needs of Nigerian villages or towns.¹⁴

The most recent of the settled areas is Samaru which lies further

northwest of the other two areas.

Samaru was founded in the early
1920's as an Agricultural Research
Station.¹⁵ Today Ahmadu Bello

University is located in Samaru,
as well as a residential and a com-
mercial area.

TRADITIONAL DWELLING



THE COMPOUND

The built environment in the walled city of Zaria consists primarily of a single building type, the traditional dwelling unit of the Hausa, the gida (house). The gida is generally referred to as a compound, and its major characteristic is an exterior mud wall which prevents visibility to the inside. Inside these walls are the huts of the inhabitants, who are members of an extended family based on agnatic kinship relations. Because of the Muslim practice of purdah which requires married women to be in seclusion, the arrangement of interior rooms, and most importantly, the exterior wall, is for privacy.

The compound does not conform to a standard shape, thus the result is many irregular configurations in the layout of the exterior walls.

The compound wall, katanga, has an average height of seven to eight feet. The common attitude concerning wall height is that it should be tall enough so that "a person on a horse cannot see over it."¹⁶ Walls, however, can be found that are shorter or taller than the average. There are no rules in the city restricting the height of walls and in general, the walls will be as tall as an owner can afford to build and maintain. The tallest compound walls which I encountered in the

walled city were those surrounding the residence of the emir, the emir's palace, whose walls are approximately fifteen feet tall.

The huts which are contained within the exterior wall are the living quarters of the members of an extended family. The extended family is under the charge of a compound head, maigida, who in general, is the oldest son or direct male descendant of the man who founded the compound.

The majority of co-residential units are extended family groups based on agnatic kinship. These family groups can be divided into three main categories; the nuclear family, with or with-

out additional kin such as the compound head's widowed mother or other divorced or single close relatives and composite units of two types, the compound head's family, her married sons and their descendants and collateral agnatic and then dependants. The two latter types are usually divided into a number of households, each forming a separate unit of domestic economy of the cikin gida (see Internal Organization of Compounds), known as sassa. These individual family units are responsible for their own food, clothing and maintenance of their hut or huts.¹⁷

The arrangement of the huts inside the wall will not only reflect the organizational structure of the family, but will be done in such a

way to insure the maximum privacy of the married women. This is significant because of the Muslim practice of purdah, where married women stay in seclusion inside the compound. Rooms and huts along with internal walls, sassa, are arranged to prevent visual access into the private area of the house by strangers. While the exterior wall provides protection and privacy from the outside the rooms and huts along with internal walls, prevent visual access inside the compound by strangers and even among family members.

Another characteristic of the compounds is their seemingly irregular shape. The shapes of compounds are highly individualized, resulting

in many variations. By referring to the shape of a compound, I am actually speaking of the shape or configuration formed by the layout of the exterior wall. The external wall surrounds the collection of rooms, huts and spaces inside the compound and creates an exterior form, since the elements in themselves have no composite form.

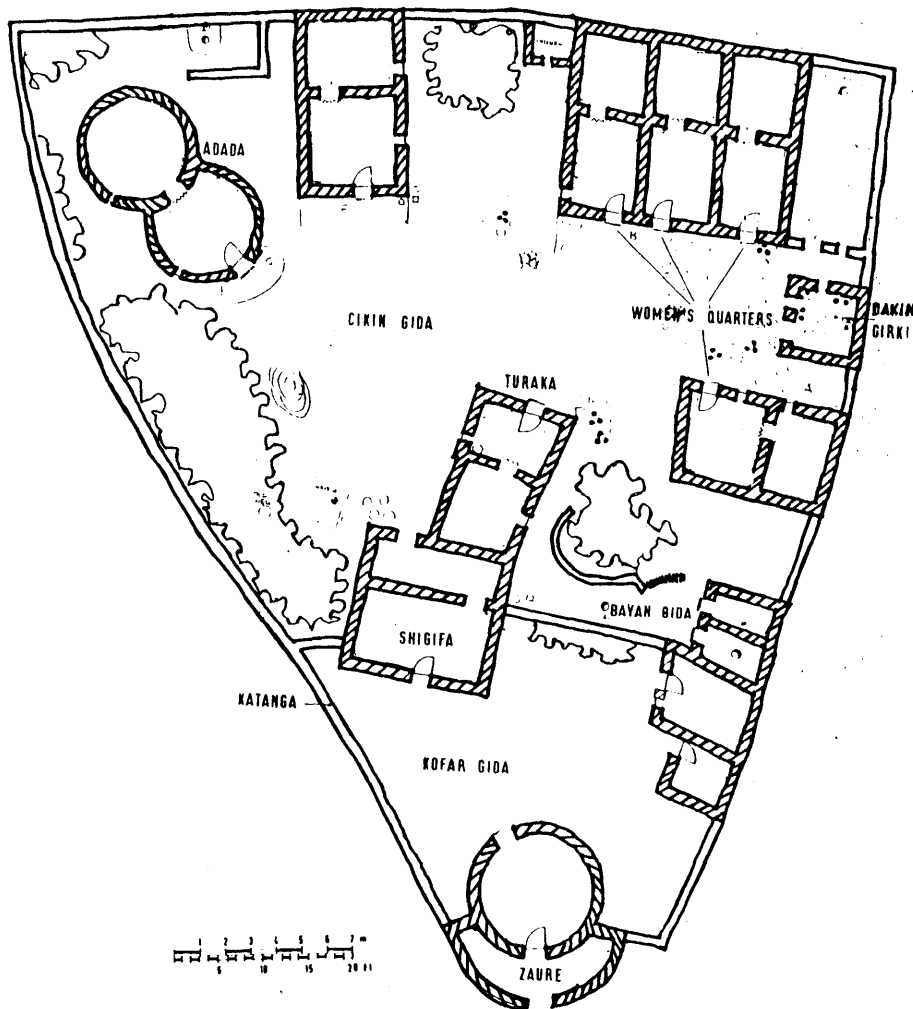
The compounds in the walled city of Zaria in appearance may seem to be simple structures, however, they are the built response to meet the housing requirements of the Hausa society and culture. Compounds are varied, in that each responds to the individual needs of the inhabitants, thus, many variations result from a single building type.

INTERNAL ORGANIZATION OF COMPOUNDS

The interiors of the compounds have many rooms and huts which are the dwelling spaces of the inhabitants, and vary according to family size. The arrangements of these huts, however, is to insure the privacy of the women who are in purdah, and follow some basic patterns in all compounds. The placement of an entrance hut, the zaure, is always on one of the exterior walls of the compound and frequently leads to a small courtyard, the kofar gida. Following the kofar gida is a secondary entrance hut, the shigifa. Only family members or special guests are allowed beyond this point into the main family area, the cikin gida,

which is an open courtlike area containing family member huts. The majority of the women's activities are conducted out of doors in the cikin gida, while those of the maigida are conducted in the zaure. The buildings inside the compound are either circular or rectangular and are simply furnished. The resultant open spaces inside the compound are generally irregular in shape due to the informal positioning of the huts inside.

In order to provide a clear picture of the internal organization, I will use as an example, a compound and its description from a study conducted by Professor Fredrich Schwerdtfeger on the Housing in Zaria.¹⁸



Source: Housing In Zaria, F. Schwerdtfeger

This compound belongs to a mallam, an Islamic teacher. The entrance, the zaure, is the round shaped form at the bottom and has the added feature of a small porch. The mallam conducts his classes and receives his guests in the zaure. It should be noted that to prevent male visitors from having visual access into the compound from the zaure, the door leading to the compound is off center from the entry door. Also, it is common practice to place straw mats over the doorway leading into the compound.

Only a very good friend or an important guest of the mallam is allowed to move from the zaure through a small courtyard, the kofar

gida, into a second entrance hut, the shigifa. The shigifa is usually divided into two rooms, one larger room for meetings and the other for storage. In the small courtyard, the kofar gida, are located small huts for overnight guests, servants, or adolescent boys.

The main living area, cikin gida, is located behind the shigifa. The activities of the compound head's four wives are confined to this area. This area is restricted to only close relatives, women, girls, and boys under the age of puberty. The cikin gida contains the wives' quarters, and the wet season kitchen (dakin girki). During the dry season, the cooking is done outdoors. The com-

pound head's personal room, the turanka, is located near the wives' quarters. Additional family members of the compound of the mallam, his married sons, his brothers and a divorced sister may live in the rooms located to the left of the wives' quarters. The widowed mother of the mallam lives in the round double hut, the adada. Water for the compound is provided by a well, and pit latrines and bathrooms (bayan gida) are located in the lower right area of the cikin gida.

Hausa culture prescribes the activities of the married women, all of which are confined to the cikin gida. These activities include food preparation by the wives for the

family or for sale--in which case the wives will send young girls out to do the selling for them. Other activities are weaving for profit, and conducting petty trade for farm products, which are again sold by intermediaries.¹⁹

The activities of the maigida, however, take place inside the zaure, where he will receive his guests and conduct his business or craft. The mallam of this compound for example, teaches the Koran to his students inside his zaure.

As seen from the plan of this compound, the building forms inside the compound are either circular or rectangular. The rectangular buildings will typically have mud domed roofs which create a very interesting

interior ceiling (see compound construction). The circular buildings have conical thatch roofs. It is the conical tops of these roofs which one frequently sees behind the walls, from the outside of the compound.

These two building types have very simple furnishings consisting primarily of an earthen bed built into the wall, which can be heated from underneath. Most people are accustomed to sitting on the beaten earth floors with grass mats.²⁰

The open space in the cikin gida in this example is amorphous. The configuration of this space is not planned in terms of its final form. Its irregular shape results from the informal relationships

between the huts inside as well as the irregular layout of exterior walls. It is an important space nevertheless, and should be large enough to accommodate present family members as well as future ones.²¹

CIRCULAR AND RECTANGULAR FORMS

The circular form is predominant in the walled city and is frequently used for the entrance hut, the zaure, in addition to being used for the other dwelling spaces inside the compound. There are, however, many rectangular forms used, as evidenced in the compound just presented. The use of the round forms is associated with the architecture of the

indigenous Hausa people, and the rectangular form is, in general, linked to the influence of Islam on the local building forms. The case of Zaria, however, may indicate that this assumption is not always applicable to every Hausa city.

This association between the rectangular form and the influence of Islam is based primarily on the fact that Muslim traders who lived in



many of the Hausa trading cities and throughout the western Sudan, built rectangular flat roofed buildings sometimes with second floors. This style of building is found throughout the Sudan region and is generally referred to as the Sudanese style.

In Kano, an internationally known Hausa trading city which is 110 miles north of Zaria, there were rectangular houses. According to a description by the English Captain Clapperton who visited Kano in the early 1820's:

The houses are built of clay and are mostly of square form, in the Moorish fashion, with central rooms, the roof of which is supported by trunks

of palm trees, where visitors and strangers are received.²²

He also adds:

...within the enclosure (the wall) in which the house stands, there are also a few round huts of clay, roofed with the stalks of Indian corn and thatched with long grass.²³

This observation is also corroborated by the British explorer, Henry Barth, who visited Kano in 1851 and observed that:

All over the town clay houses and huts with thatched conical roofs are mixed together.²⁴

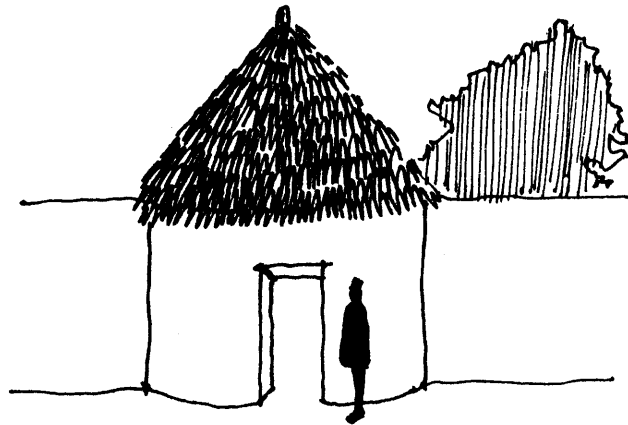
The point to be made is that the Muslim traders and holy men (marabouts) built houses in this rectangular form and that the local people began to emulate this. The ruling classes were the first to convert to Islam and they were the first to begin emulating this new building type.²⁵ When the Fulani conquered the Hausa kingdoms during the holy war, jihad, of 1804-1810, Islam became the religious and political force in the region. It is logical to assume that this strong cultural influence caused many people to modify their buildings.

The specific case of Zaria, however, causes one to question this overall blanket assumption of the

Islamic influence on the built form. In Professor Schwerdtfeger's study on the Housing in Zaria, he states:

...throughout its history, Zaria has never served as an international trading center like Kano, Gao, or Timbuktu. No or very few Arab traders settled here in early times; and this influence of the new religion with its associated development may have lagged behind the more important trading terminals to the north.²⁶

In interviews with several compound heads, masugida (plural), the general response is that some people changed from the round zaure to rectangular ones to be modern.²⁷



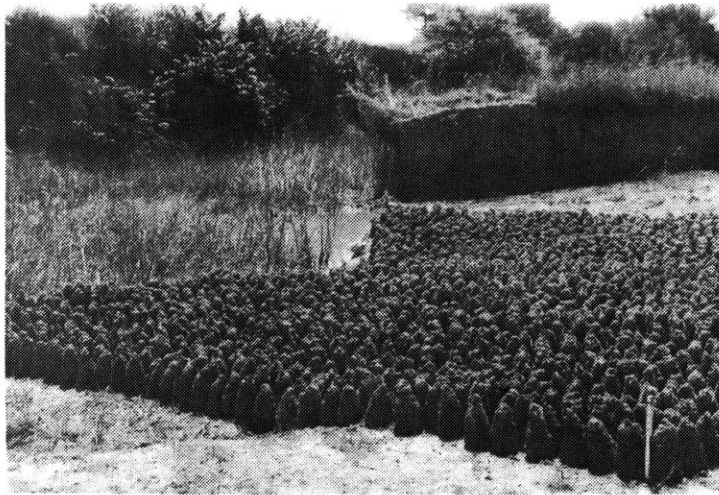
Clearly, more research would have to be done to find out exactly when people began modifying their round huts to rectangular in Zaria. It's very possible that this new building type resulted from the changing needs and requirements of the inhabitants themselves. Nevertheless, this building type was common throughout the Sudan and it is not hard to imagine that as people encountered this

building type elsewhere that they might not have emulated it at home.

COMPOUND CONSTRUCTION

A very interesting aspect concerning the discussion of the introduction of the rectangular building form is that the local Hausa builders used their traditional building technology to construct it.

The traditional method of building in mud starts by forming mud pear shaped balls called tubali. The tubali are about six to seven inches in height and three to four inches in width. Once the tubali have been sun baked they're laid in

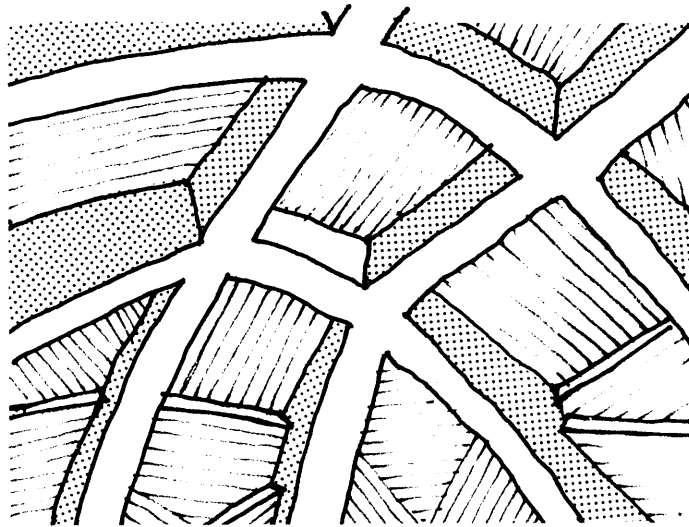


courses each of which are covered by a layer of mud mortar. As the wall gets built up to a certain height and dries, one workman will sit on top of the wall and lay in additional courses as the tubali are tossed up to him from another workman below. This building method by tossing the tubali explains their unusual shape and because the shape of the tubali is adapted to the

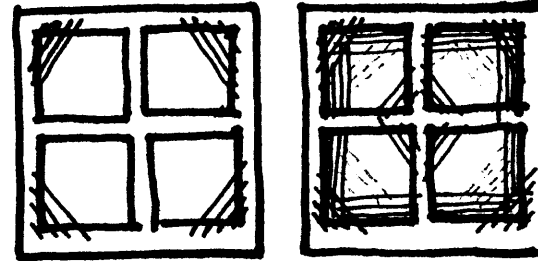
human hand the resultant buildings and walls are endowed with an undulating and tactile quality. Also it's important to realize that all buildings from compounds, the Friday Mosque, up to the immense city walls are all constructed in this manner. Because of the heavy rains during the rainy seasons these structures require constant maintenance.

The roofs for the building are of two types, a thatched roof and a mud roof, which can be either domes or flat. A construction technique using bamboo or another stalk material form a conical frame which is filled in with thatch. The mud dome roof is supported by arches and make the interior of an otherwise simple build-

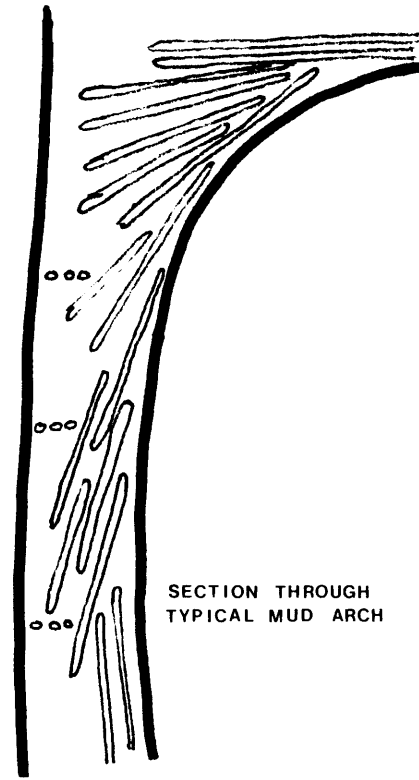
ing quite elegant. The arches are formed with mud reinforced with beams



made from the deleb palm tree, azara beams. The azara beams are sprung from the opposite sides of the walls. The open space between the arches is then filled in by setting the azara beams side by side diagonally across the corners at the top of the wall progressively inwards. This same



ROOF PLAN



SECTION THROUGH
TYPICAL MUD ARCH

method is employed in building flat roofs. The ceiling and walls are finished with either a mud or cement plaster. This construction technique produces an interesting layered affect in the ceiling.

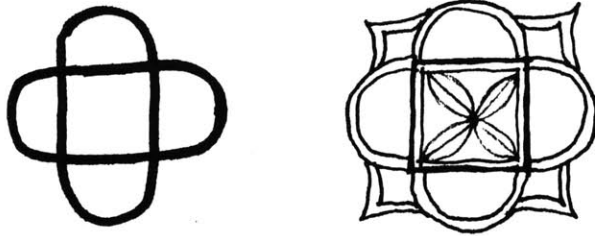
DECORATION

An interesting feature of many compounds in the walled city is decoration of the exterior walls and entrance doorways, which is considered a status symbol and is a sign of wealth. This decoration, called zanen gida, consists of various patterns and images which can be painted, pressed, carved, or molded into the wall. Many compounds also have an interesting architectural feature of

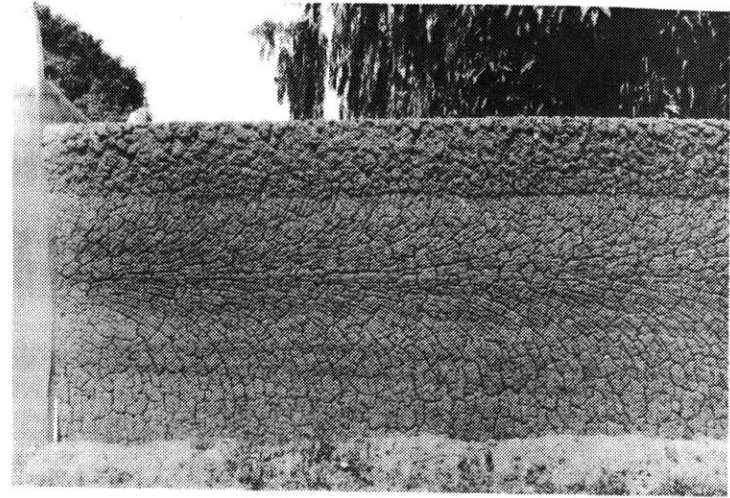
horn-shaped projections along the parapets which are called zankowaye or zanko.²⁹ Traditionally all the decoration on compounds was the work of a local builder called a maigini.³⁰ The decoration, however, is not permanent because some buildings are not adequately maintained and deteriorate due to the rain and in others, the owner of a compound may decide to change the decoration over time.

There is a variety of different types of exterior wall decoration which include finger patterns, pictorial images of objects such as airplanes and bicycles, emblems from the Koran, arabesque patterns and intricate geometric designs. The most popular geometric pattern in Hausaland is the

Northern Knot, the dagi, which is a pattern of intertwined ovals. The dagi can have many intricate variations and is a traditional pattern used in embroidery and ornamentation.³¹



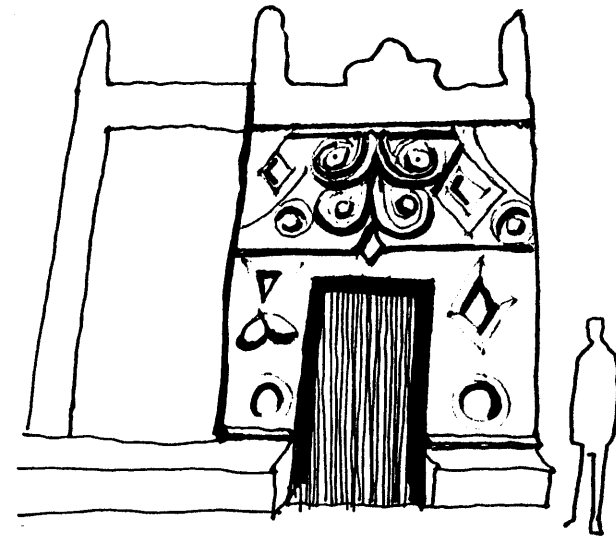
One of the most common decorative treatments of the walls which I encountered were patterns pressed into the walls using the hand and fingers. This gives the walls a textured effect. I also saw compounds which had patterns painted on the walls. Most of these



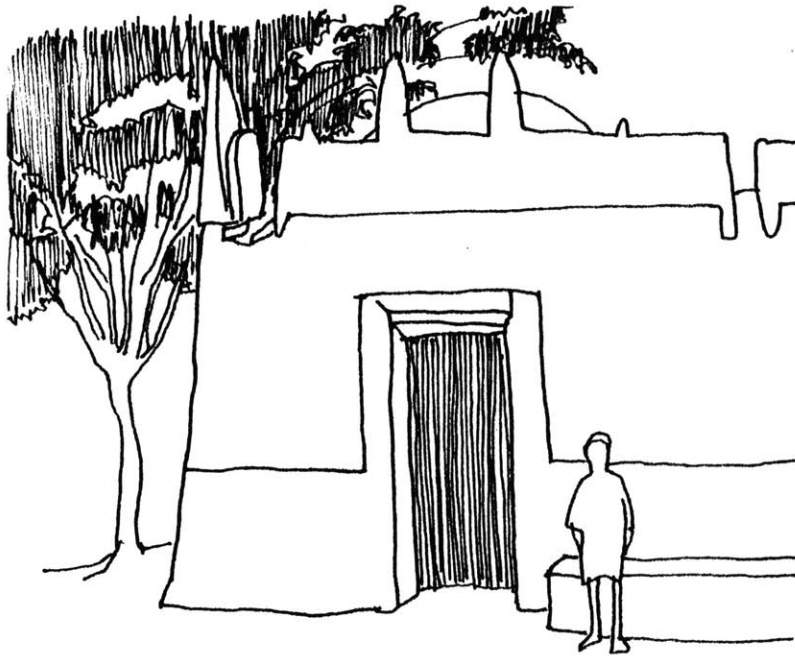
patterns were painted on a cement plaster which was applied to the mud walls. Unfortunately the cement does not adhere well to the mud and many such compounds had pieces of plaster which had fallen out. The other wall treatment which I encountered frequently was wall patterns that had an embossed effect on the surface. Many of these patterns were arabesque and variations of the Northern Knot, the dagi. The embossed effect is achieved by molding the pattern by hand on the wall surface as a mud plaster is applied.

The wall decoration, zanen gida, is the work of the local builder, the maigini, who is hired by a compound owner. The maigini uses his own imagination in making designs, but he takes

into account the characteristics, the achievements and the aspirations of the owner.³² Practically all the decorative art is executed by hand. The maigini uses a mud based plaster to form the designs on the wall, which later will be whitewashed and painted.



Many decorated compounds and others which may have none share an architectural detail of a horn-shaped projection along the parapet. This detail is called



zankowaye or simply zanko. The exact origin of this detail is not certain, but its widespread use seems to be more in the interest of decoration than previously thought of as phallic symbols.³³ The use of the zanko may also be tied to status symbols and wealth indicators since it has been remarked that they demarcate every room of the house so

that from the outside an observer can quickly estimate the importance of the householder.³⁴

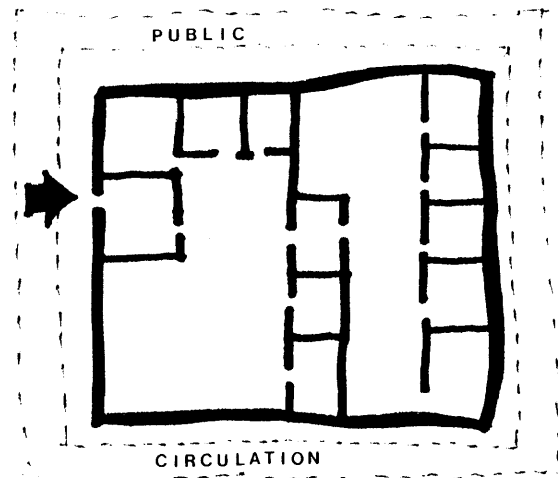
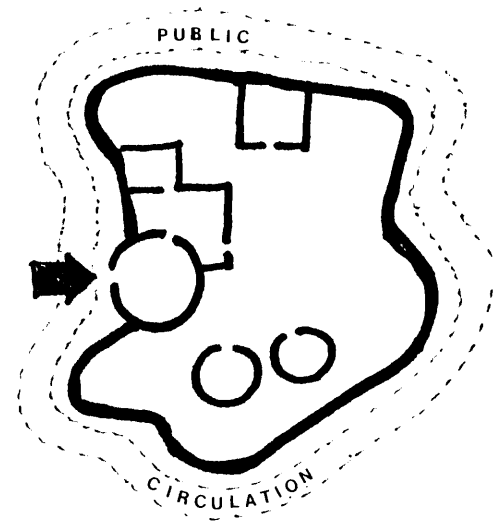
Much of the wall decoration disappears over time. Mud buildings are susceptible to erosion caused by the rainy season. The decorative art and the compound itself requires constant maintenance, which can be costly. When maintenance is not done on a regular basis the decoration disappears. Another



factor for the impermanence of exterior decoration is that the compound owner may decide to change it from time to time. Many of the examples of Hausa wall decoration which are documented in books have changed or disappeared because of the reasons mentioned.

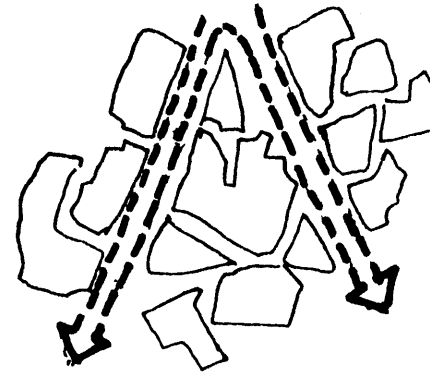
VARIATION OF EXTERIOR WALL LAYOUT

Walls provide the compound with form by enclosing the complex of rooms and spaces inside the compound. As a result of the walls, the compound is a free standing unit where public circulation occurs around it. The front wall is distinguishable from the other walls by the presence of the entrance, the zaure. With the exception of rectangular



shaped compounds where the exterior walls relate to the interior, most compound walls form irregularly shaped configurations and bear little or no relationship to the interior. The irregular layout of compound walls vary widely; however, most are semi-orthogonal shapes. Compounds are not built on surveyed plots and this contributes to their irregular layouts.

In general the layout of compound walls is non-orthogonal because geometry was rarely used in the laying out of compound walls. However, in the densely settled areas the shapes are semi-orthogonal which can be attributed to the compound walls making adjustments for the circulation system of roads and paths, and also to the constraints of



compounds being built close together. Individual plots were not surveyed and a resident told me that the primary motivation of an owner is to build walls around all one's land. In walling in all one's territory, it is also necessary to provide circulation space between compounds.³⁵ The exception to this is in the case of related families living in separate compounds but sharing a common wall between them. By providing circulation space between compounds, the walls along these passages tend to cor-

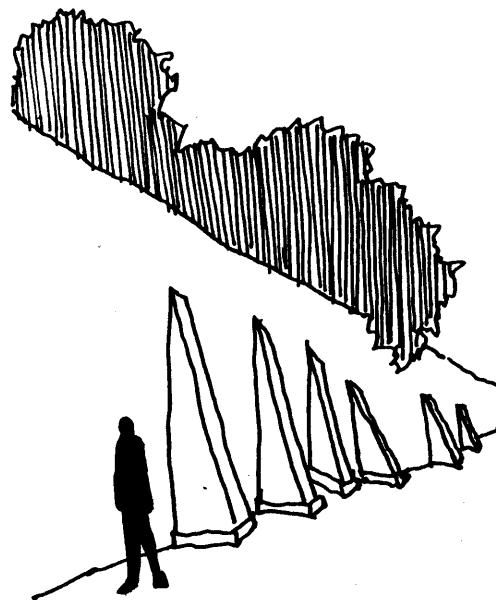
respond with each other in parallel relationships. This results with compounds which are grouped together resembling the interlocking pieces of a jig saw puzzle.

PATTERNS OF WALL TREATMENTS

Although the walls of compounds have a variety of configurations in their layout, many possess some common details pertaining to wall stability and drainage.

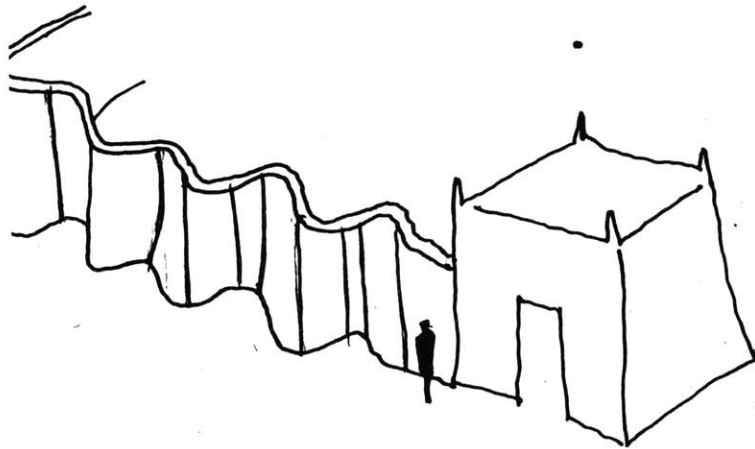
A common pattern in the treatment of the walls of compounds is to provide reinforcement for their stability. Two methods which I noted were the use of wall buttresses and undulating walls. The use of a wall buttress occurred most frequently where segments of the wall run

continuously without direction changes over long distances, or in cases where the walls were quite tall. The walls of the emir's palace are quite tall,



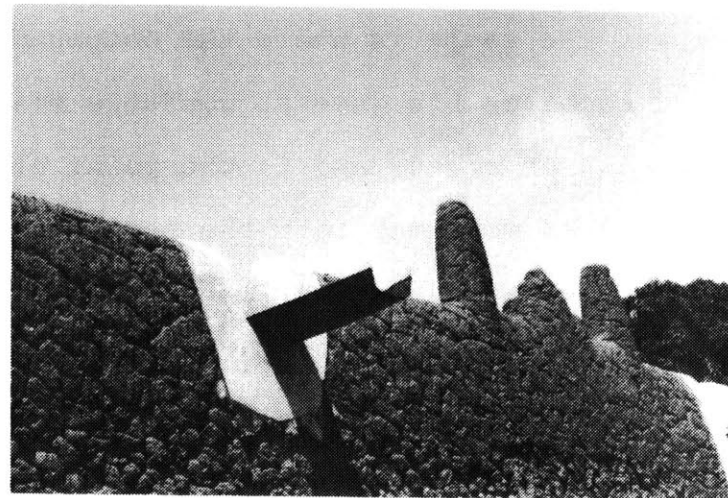
approximately fifteen feet, and are buttressed. Another method of providing stability, in my opinion, is the use of undulating walls. I noticed many walls with relatively straight courses which

were undulating. Although this gives the wall a decorative quality, I believe this treatment of walls in this manner is tied to concerns with increasing the stability of the wall.



Another frequently encountered pattern among the walls of compounds is the use of gutters for roof drainage. Gutters are important in order to drain water away from the building walls and prevent the acceleration of the in-

evitable erosion of the mud walls during the rainy season. Pieces of scrap metal and tin are used to make gutters. Gutters of this type are a common feature on compound walls and along many paths they create a visual rhythm.

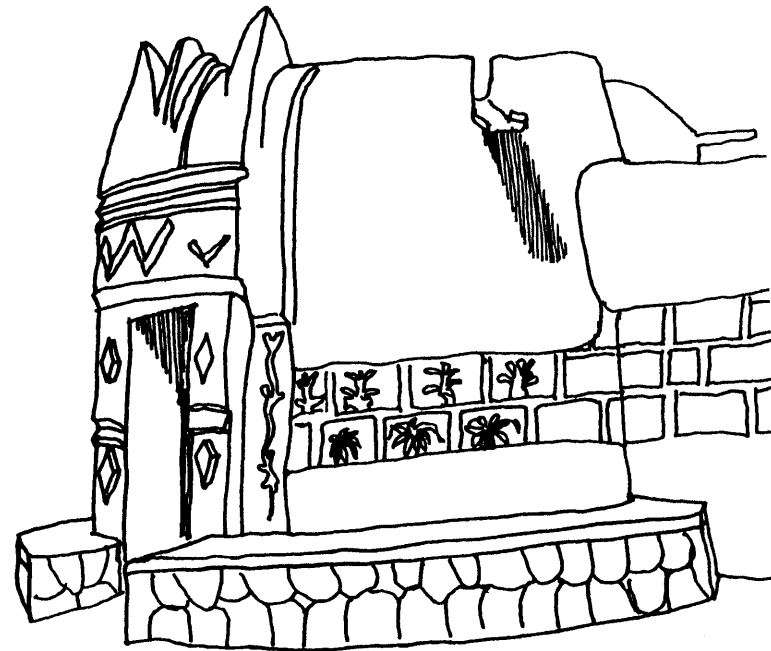


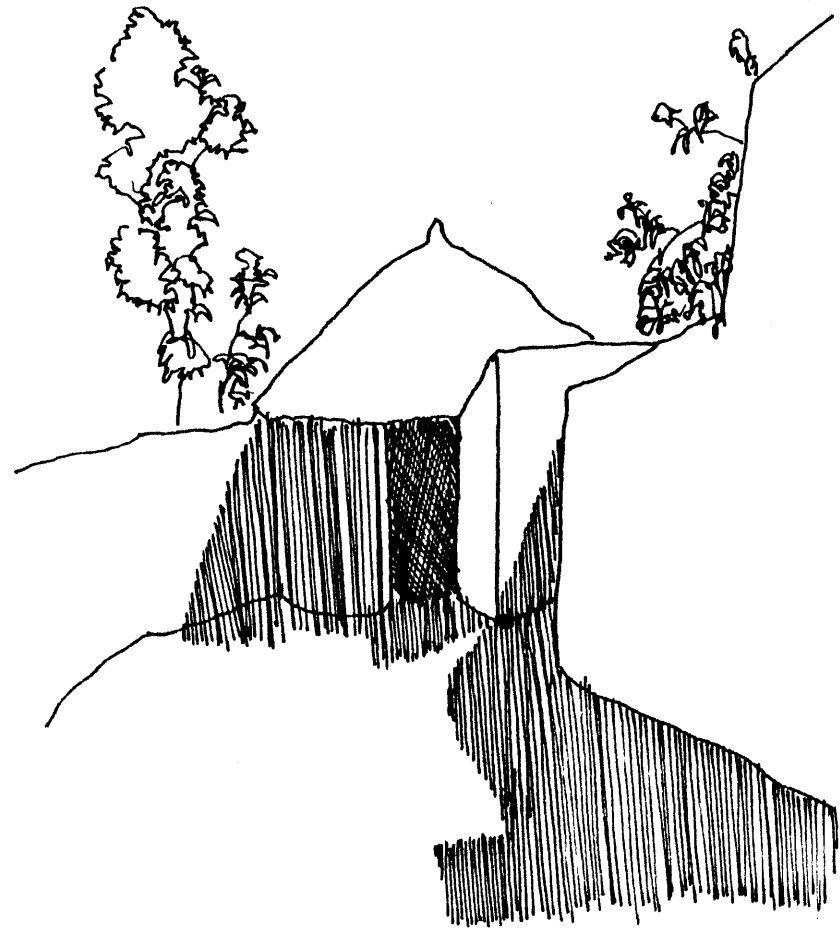
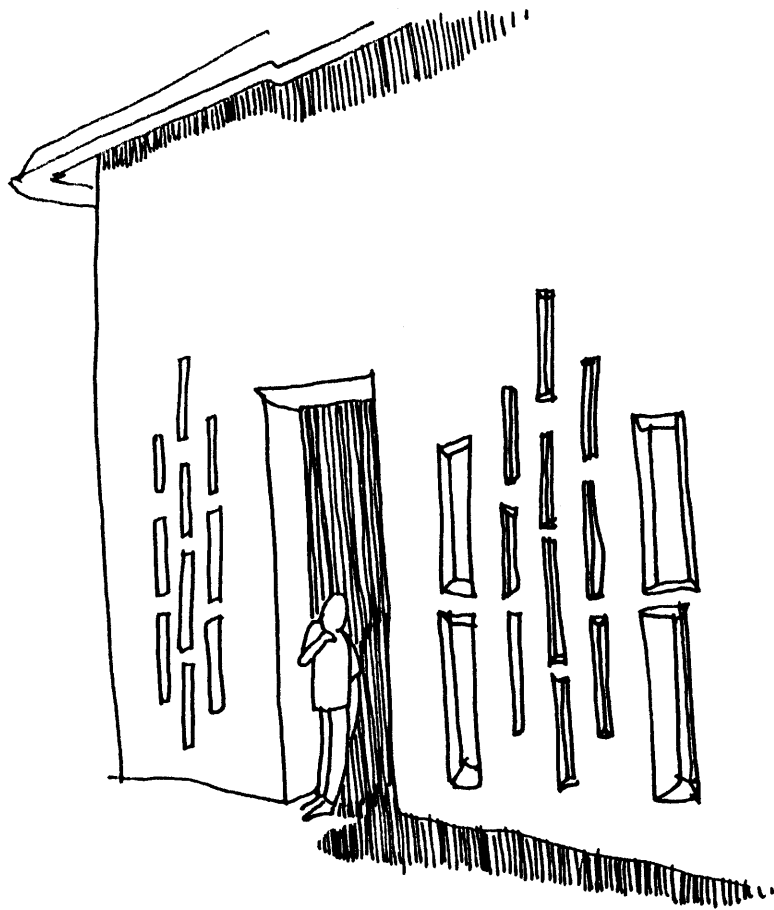
VARIATIONS OF THE ENTRANCE

Compounds, regardless of their shape, share the feature of a zaure, which is the entrance. The zaure, to a certain degree, is analogous to a foyer in a western style house; however, its functions are different. As has been shown, the zaure is where the compound head receives his guests, conducts his business or craft, and is the point of restricted movement into the compound for all except a select group of non-family members.

The zaure is the only element of the compound which is visible from the outside; everything else is shielded from public view behind the walls. The location of the zaure is usually along the wall of the compound which faces a road

or frequently travelled public path which allows convenient access into the compounds for residents. When both the wall and zaure are decorated, a public facade is created for the compound. The shape of the zaure can be either circular or rectangular and the articulation of these forms is the source of much variation.

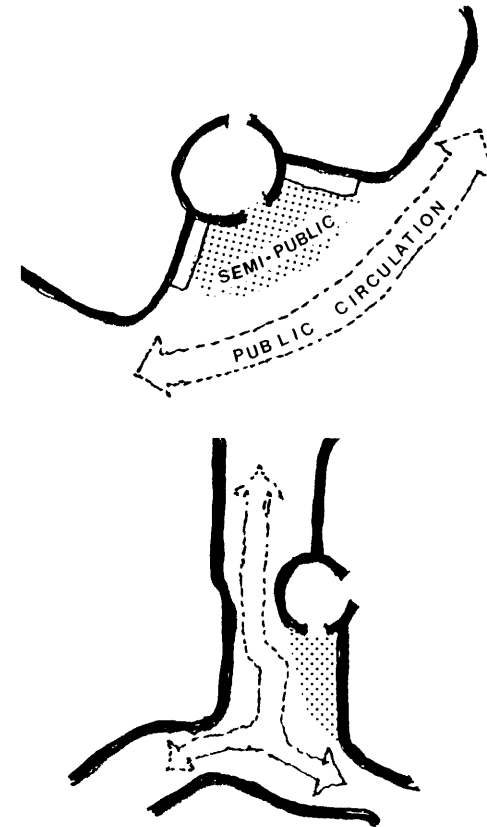




SPATIAL VARIATION AT THE ENTRANCE

The entrances to compounds do not face the road or path, along which they are located, in a standard or consistent manner. Some face directly onto the road while others are set back from it. In both situations, small mud benches are often built into the exterior of the zaure for outdoor seating. These benches are analogous to street furniture and allow the activity of informal gatherings to occur along the public circulation routes between compounds.

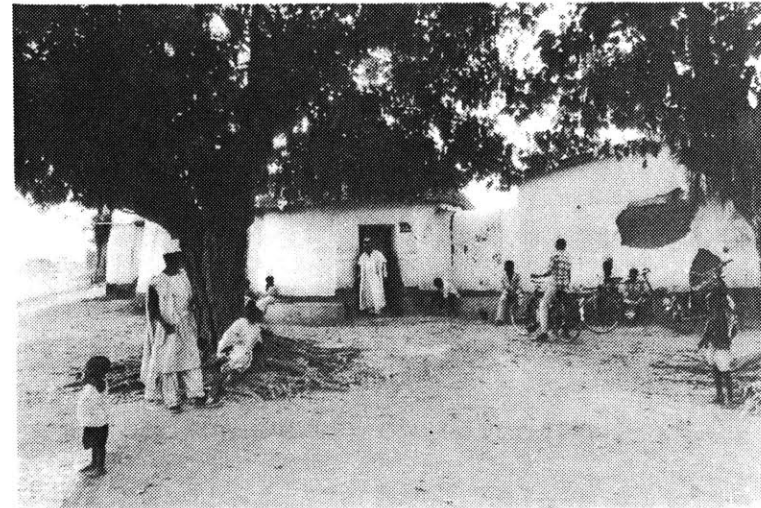
When entrances are set back from the public circulation, however, the activity of informal gathering is further reinforced by having a defined area which also serves as a transition space between



the entrance and the circulation zone. Many different spaces can be formed when the entrance is set back. These spaces are formed by the walls extending outward from the entrance, the zaure, which is set back and in doing so, the walls frame

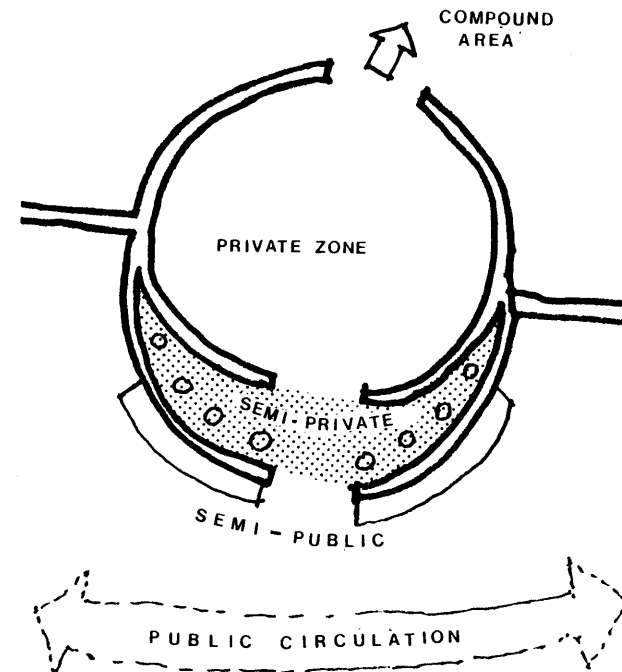
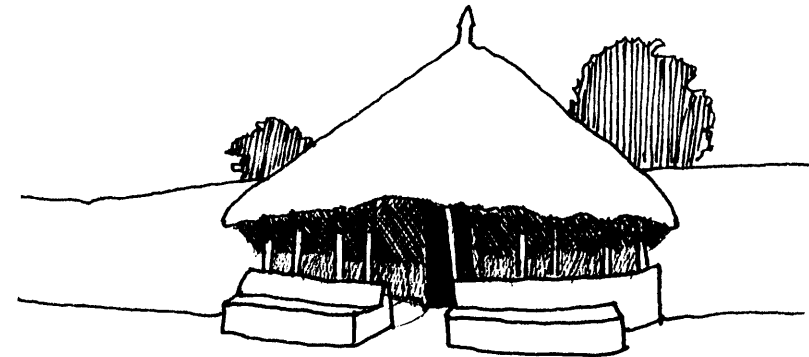
a niche. Depending on the shape of the zaure, and configuration of the wall layout, interesting relationships can occur between these elements and the niche-like space framed by the walls. The entrance spaces to certain compounds, particularly those which are highly decorated, constitute some of the most picturesque places in the walled city.

The entrance spaces are highly individualized and often adapt to specific site conditions. A common entrance situation which I encountered was one where entrances were set back behind an existing tree with the walls framing a space around it. These shady areas are places where people can gather informally in comfort, out of the oppressive heat.



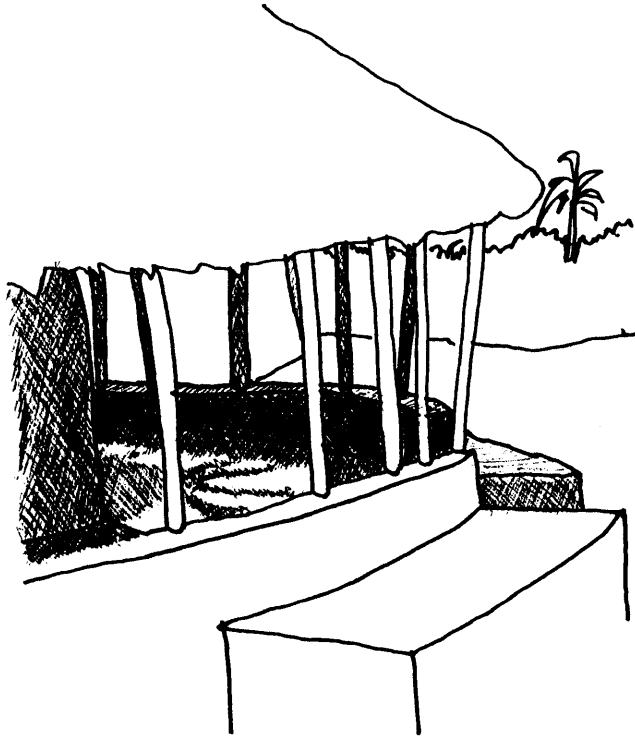
In compounds where the entrance is located directly along the circulation route, there is no progression from public to private via a transition zone. However, some compounds with similar entrance conditions achieve a progression from public to private by the form of the zaure itself.

The zaure shown belongs to the compound of a maigida who was a secretary to a former emir. In an interview that I conducted with him, he stated that he often received many guests of various social rank and title, and that his zaure was designed so that some of his guests could sit on the small benches on the outside, while others would be allowed onto the porch supported by wood columns (kafe), and still others inside



the zaure itself. Only the emir and other dignitaries were received in his

secondary reception room, the shifiga, which is located inside the compound.



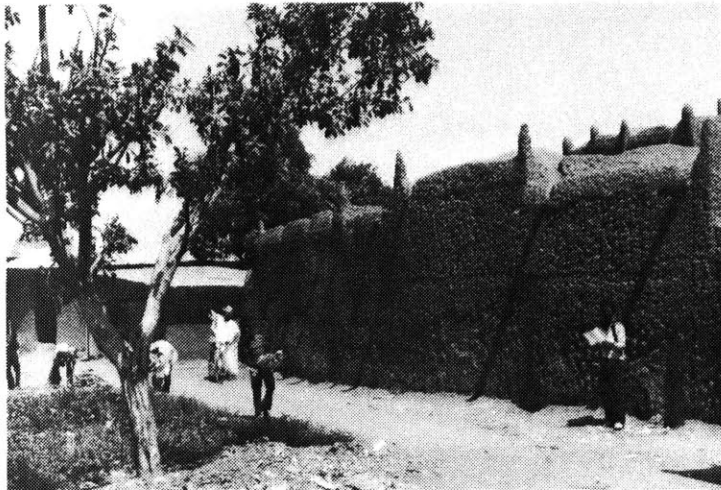
This zaure is not only a striking example of possible variations in the circular form, but it also illustrates that the transition from public to private is not necessarily an abrupt one.

By staging the transition from the most public zone along the road to semi-private in the porch area, to private inside the zaure, a very elegant circular form resulted.

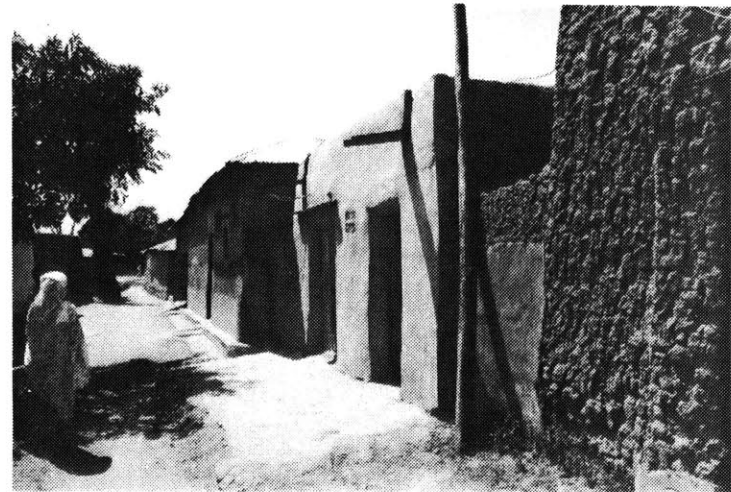
As seen from the examples presented, the compound is not a standardized building form. They vary according to their external wall layout and the walls themselves, the form and the articulation of the zaure, and the spaces in front of the zaure.

There are many individual variations within a framework which can be adapted in various ways. Although a vernacular always has limitations in the range of expression possible, at the same time it can fit many different situations, and create a place at each.³⁷

The diversity found among the compounds animates and enriches the built environment in the walled city. Without the existence of variations of forms and spaces within this walled environment, it would appear dull and lifeless.



CITY ORGANIZATION



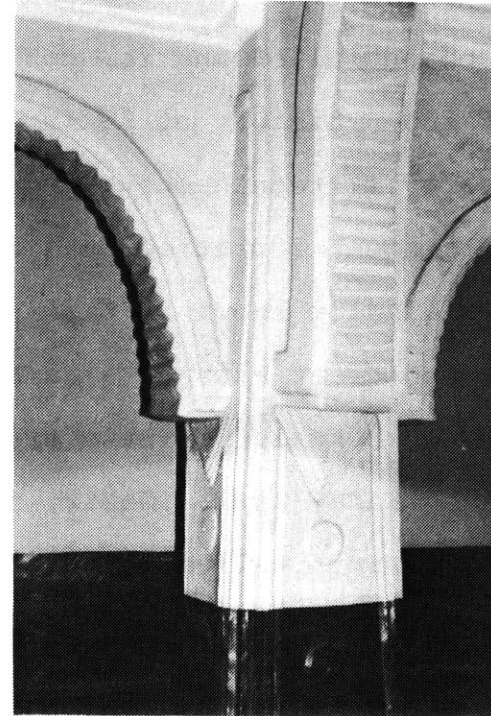
A CITY OF COMPOUNDS AND ITS EVOLUTION

The walled city of Zaria is a dense settlement of compounds and small mud buildings which serve as mosques. With the exception of the Friday Mosque, the main mosque of the city, these buildings of Zaria were traditionally the only building type prior to colonialism.

Although there was little differentiation in the building types, one should not assume that Zaria was not a city. It was a powerful city which acquired great wealth and prestige. The resultant form of the city reflects its organic growth which allowed many formal and spatial variations to occur.

Like the compound, the Friday Mosque was constructed in mud. The Hausa

builders adapted their mud technology to construct this new building type in the city. Built in the early nineteenth century, the mosque is a rectangular building with interior bays supported by



mud columns and arches. Today, the mosque has a new outer structure but

the original mud interior remains. The details and craftsmanship evident in the interior which stands today, is a testimony to the ingenuity of the local builders and illustrates the capability and the potential of mud for construction.

The known history of Zaria goes back to the early fifteenth century when it was a settlement fortified by a wall. Zaria, originally known as Zazzau, was one of seven great Hausa states known as the Hausa Bakwai.³⁸ These states were Daura, Kano, Zaria, Gobir, Katsina, Rano, and Biram. Walled cities were characteristic of these states as well as other settlements in Hausaland.

Fortified cities were known as birane (birni, sign.); hence, Zaria is also referred to as Birnin Zaria. The

birane cities evolved from an early Hausa settlement pattern of compounds clustering together "for the purpose of communal and shifting agriculture."³⁹ According to a speculative treatise on the early state formation in Hausaland by Abdullahi Smith, a recognized authority on the history of West African Islamic states, it was these clusters of compounds which developed over time into the birane cities.⁴⁰

This development process, according to Smith, began when these small clusters of compounds began to form larger groups called unguwoyi (unguwa, sing.). Within these groups, officials were appointed to oversee the communal resources-- such as the sarkin noma, the king of farming, and sarkin ruwa, the king of

water. When a settlement grew larger it became a gari (garuruwa, pl.) or town.

The garuruwa developed through the clustering of unquwayi in fertile areas or through the increase in population resulting from trade, industrial development connected with ironworking or cloth-making. The political authority over a gari was vested in the sarkin gari, the king of the town.

In cases where a sarkin gari was able to extend his authority and control beyond his own gari and subjugate other garuruwa, his title would become sarkin kasa, king of the country. The sarkin kasa lived in walled towns, the birane, which provided protection for those living within as well as outside the walls in the surrounding countryside.

What is known of the early history of Zaria is that two birni type settlements existed on the plains of Zazzau (Zaria) at the beginning of the fifteenth century, one at Turunku (21 miles south of Zaria) and one at Kufena (adjacent to Zaria). Both settlements had large scale fortifications encircling the largest inselbergs of the plain and by the end of the century it is reported that the ruler, Bakwa, gained control over Kufena. It was after this event that a new permanent fortified city was built at the eastern end of the birni at Kufena and named Zaria after one of Bakwa's daughters.⁴¹

During the sixteenth, seventeenth and eighteenth centuries the wealth and prestige of Zaria increased through

trade, craft industries and taxation.⁴²

It was also during this period that the political authority of the sarki via a complex network of feudal relationships expanded well beyond the plains of Zazzau to territories further south.⁴³

The independent rule of Zaria by a sarki came to an end when Fulani jihad swept through Hausaland and conquered it in the early nineteenth century.

The resultant form of the city is an agglomeration of compounds. As the city grew the number of compounds increased, but the form of this city does not reflect that this growth followed a pattern which was determined by an urban design or masterplan. The built environment consists of the compounds, of various shapes and sizes, crowded

together in a non-orthogonal circulation system of winding roads and paths.

The walled city of Zaria is essentially an organic city. The resultant forms, which appear to have no order, came about as the compounds adapted and made adjustments to one another as the area became more dense. With the exception of the roads leading to the palace/mosque area, the city gates and the market, the winding paths between compounds were not planned but evolved as areas became built up.

The starting point is the house, the shelter. This element has to comply with a large number of parameters and constraints, from the span of a beam to the position of the surrounding buildings, the



street traffic, the orientation of the wind, the purpose of the building itself, etc. . . . There is no overview of the aspect of the city environment. Each element copes individually with the imme-

diate constraints. The concept of a dialectic built--unbuilt or house-street, does not exist yet.⁴⁴

The organic growth of this city, however, had its positive rewards in that it grew out of the inhabitants satisfying their individual housing needs which resulted in formal and spatial relationships which are varied and many, in my opinion, are quite beautiful.

The walled city of Zaria consists of three elements--the remains of a city wall which surrounded the entire settlement, an area of open land with a few scattered compounds, which is immediately inside the walls, and a densely settled area of compounds roughly in the center of the city. These elements and their relative positions are characteristic of the organization of many of the birane-type cities in Hausaland.

THE CITY WALL

The present wall which dates back to the late 18th century has a circumference of approximately 18 miles. Unfortunately, hardly any of this wall remains, and today what is left primarily are large mounds. Nevertheless, its roughly circular layout (visible from the air) was an expansion of an earlier wall of the original settlement. The original settlement was located at the base of a large granite hill (inselberg) known as Madarkaci Hill. The remains of the wall standing today are believed to have originally been part of a much larger wall network.⁴⁵

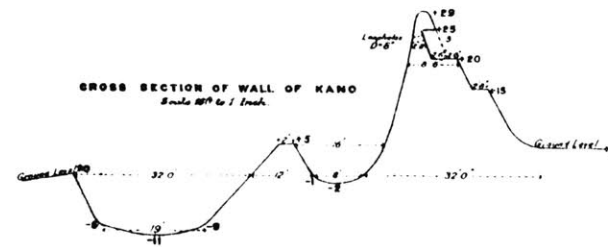
City walls were necessary for the protection of the inhabitants during times of war. But they were also im-

portant during peacetime. The walls allowed for the control of trade and toll collection at the city gates (kofa), of which there were eight. The north one, Kofar Doka, was the main gate.

The walls were constructed in mud and were very massive, ranging from twenty to thirty feet. From descriptions and drawings of the wall in Kano (well known Hausa city 110 miles north of Zaria) one can begin to imagine what the Zaria wall must have been like.

There are many accounts of Kano's walls. The most notable are by Henry Barth, the British traveller and explorer and British Captain Clapperton; however, the most accurate description was given by Lord Lugard, head of the British Expeditionary Force in the early

twentieth century. Lugard was assigned to the northern region of Nigeria to establish a British administrative grip over the area. While in Kano, Lugard surveyed and did measured drawings of its walls and in his Annual Report for 1902, he provided a description.



. . . The wall was eleven miles in perimeter with thirteen gates all newly built. Subsequent measurement at several points by the Public Works Department proved the walls to be from thirty to fifty feet high and about forty feet thick at the base, with a double ditch in front. The loopholes four feet

from the crest of the wall (which was here four feet thick) were served by a banquette and provided with mantlets at intervals, being crenelated between them. The ditch or moat is divided into two by a dwarf wall triangular in section which runs along its centre. The gates themselves were flimsy structures of cow hide, but the massive entrance tower in which they were fixed was generally about fifty feet long and tortuous so that they were impenetrable to shell fire. Some of them were most cleverly designed in re-entrant angle so that access to them was enfiladed by fire from the walls on either side, while the ditch itself was full of live thorns and immensely deep.⁴⁶

Because Zaria, like Kano, was a powerful city-state, it is not unreason-



KANO CITY GATE

able to speculate that its walls would be similar to those in Kano. However, one can only speculate because there has been little research done on the walls of Zaria or its history.

THE OPEN SPACE

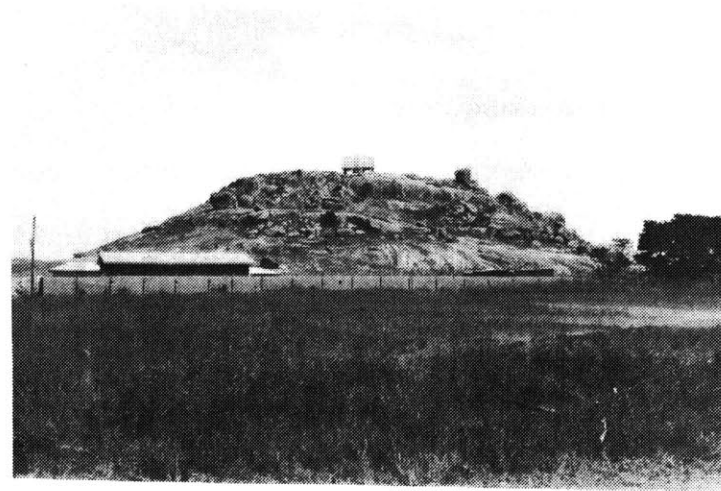
The open space surrounding the densely settled area of the city consists primarily of uncultivated land

with some scattered compounds, farms, and flood plain areas (fadama) which were sources of water. Unlike medieval European cities, the open land was not intended necessarily for city expansion, but was reserved for food production, storage, and to provide space to accommodate people from the outside who sought refuge there during times of war.

Long sieges, it is assumed could be survived because the walls encircled large tracts of agricultural land, permanent sources of water and stored food supplies.⁴⁷

Also located in the open space surrounding the dense settlement area are immense granite hills, inselbergs. One of the largest ones, Madarkaci Hill,

had an important role in the founding of Zaria. The settlement originated here because it was regarded as the sacred dwelling place of the spirits, called

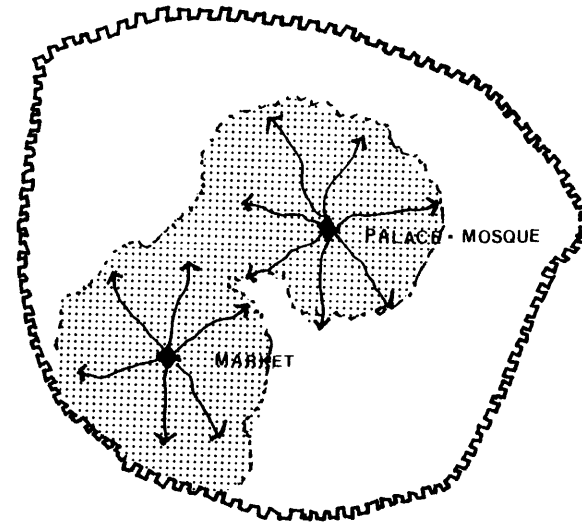


isokoki, who controlled the fate of men.⁴⁸ This was the likely pattern in the founding of other Hausa cities. Kano, for example, also incorporated large granite hills within its walls.

THE DENSELY SETTLED AREAS

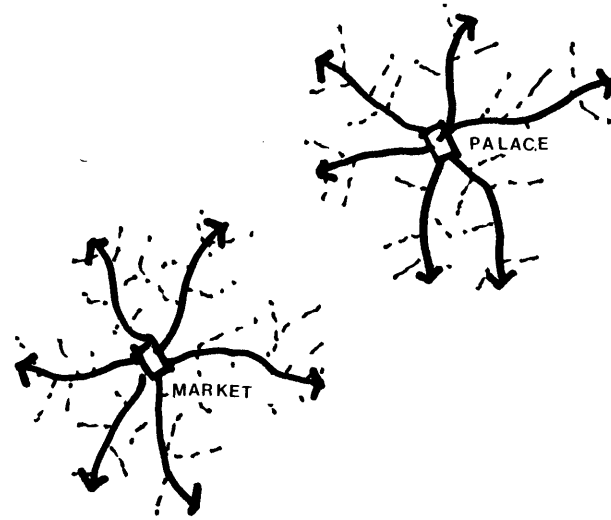
The majority of compounds are located roughly in the center of the city; however, they actually form two distinguishable areas. One surrounds the palace and mosque and the other surrounds the market. These areas became densely settled as people began to build compounds on unsurveyed plots which were traditionally allocated by the emir. Within these dense settlements are scattered many excavated land areas called burrow pits. The burrow pits were used by the inhabitants to obtain the earth used to make the mud for the construction of compounds. Interwoven between the burrow pits and compounds is a circulation system of narrow winding paths. Along these passageways one will

encounter many unpredictable spatial and formal relationships which have their own unique beauty. A small cluster of compounds in one of these areas will be presented to illustrate some of these relationships.

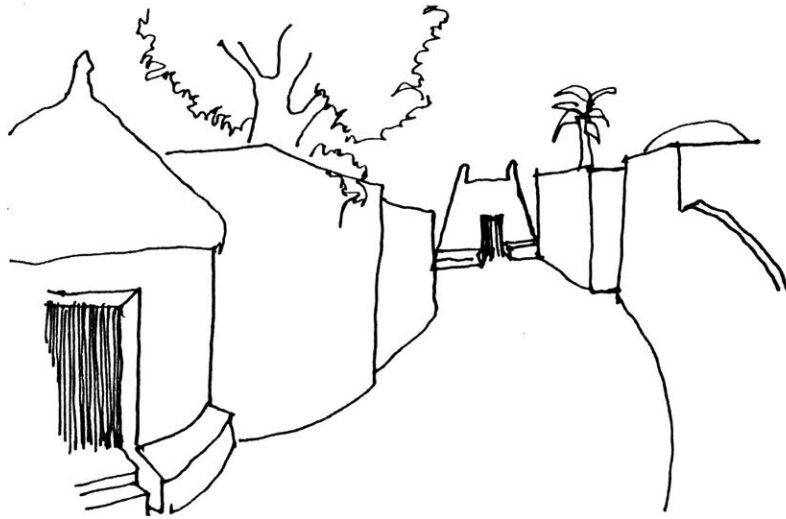


"The majority of compounds in Zaria walled city, connected by narrow winding footpaths or tracks, cluster around the two most important institutions, common to all traditional Hausa towns, namely

the palace and the central mosque which together form the political-religious center, and the market, the socio-economic center."⁴⁹ These two clusters are essentially radial in organization. The institutions in both clusters form the nucleus from which a network of major paths and roads radiate outward to the outlying areas. These routes are the major directional forces in these densely settled areas. These major arteries were not laid out and undoubtedly evolved from footpaths because they meander between the clusters of compounds at various points along its course. Branching off of them are a series of winding paths. Many of these paths are actually a secondary circulation system.



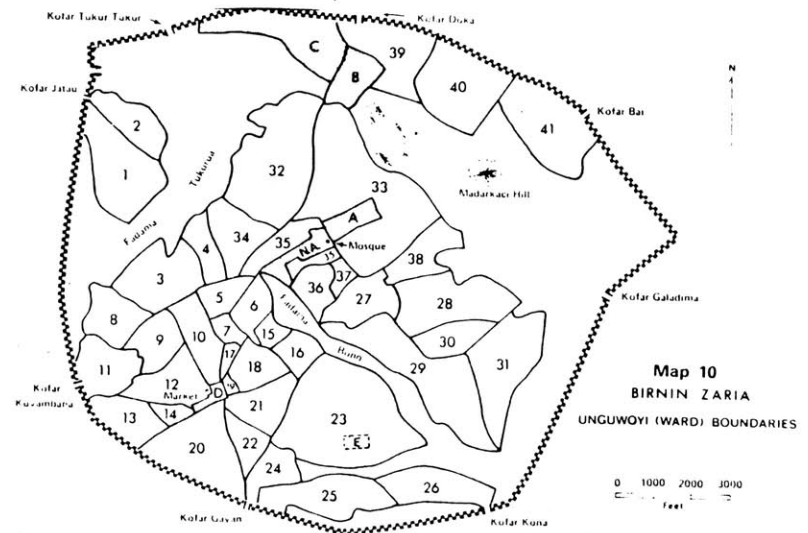
Along many of the winding paths, which branch off the major routes, are located the entrances to compounds. Entrances, in general, are usually located on the side of the compound wall which faces a frequently used path. This is for the convenience of the residents to enter directly from the path. I define these paths, which have the entrance to compounds along it, as secondary circulation routes. The other



narrow passages between compounds are leftover spaces.

The densely settled areas became concentrated with compounds when the plots were filled in. These plots, unsurveyed with only general boundaries, were traditionally allocated by the emir, because land was not privately owned. The size of the plot was based on an individual's wealth or ability to build on the plot.⁵⁰

The location of plots are throughout the walled city in wards or precincts, the unguwayi (unguwa, sing.) of which there are 41 today. The allocation of a plot in the city by the emir undoubtedly was influenced by the profession or trade of the owner, because historically, certain groups have occupied particular wards of the city.



Source: P.W.D. Zaria Plan No. 1487, and Clifford, 1923, SNP 678, 1923

The ruling Fulani families, the religious leaders and the employees of the local administration are concentrated in the palace area. Land for building was first given by the emirs to these families, whose rights of occupation, use and succession continue indefinitely, unless the family dies out, in which case its land returns to the emir. Thus ownership of land in the European sense does not exist, although in the last thirty years the practice of buying and selling land has increased, particularly in the market area, where traders, craftsmen and mallams (Koranic teachers) live.⁵¹

The control of space was primarily in the hands of the emir and his administrators, and they did not allow all areas to be filled in with compounds.



Kofar Doka, for example, is a large open area facing into the palace and mosque and contains no compounds except along its periphery. This is also true of the market which consists of open stalls with the compounds clustering around it, but not in it.



KOFAR DOKA WITH EMIR'S PALACE AND MOSQUE

Source: Dept. Urban & Reg. Planning A.B.U.

Scattered throughout the densely settled areas are excavation sites known as burrow pits. The earth used to make the tubali for the construction of nearby compounds was excavated from these areas. Burrow pits create many large open spaces between compounds in the dense settlements. When the burrow pits are no longer used they become filled in with vegetation, but unfortunately they pose health and sanitation problems because of the pools of stagnate water they create.

Many burrow pits acquire names and serve as landmarks for the local people. A resident told me that burrow pits are often named after an important or well known individual who lives nearby. For the explanation of how they serve as

landmarks, the resident said that when he wanted to explain to someone how to find his compound, he would first tell the person the name of the burrow pit which was closest to his compound and then give directions from there.⁵²



The burrow pits evolved over time as they were needed in areas which became built up with compounds and have no standard size or configuration. These

large irregularly shaped open areas are a major spatial contrast to the narrow passageways of the public circulation network. Usually burrow pits are surrounded by the walls of nearby compounds, with paths along these walls. The spatial sequence of the circulation on many of these winding paths goes from an enclosed system between the walls of individual compounds to an open one, having a compound wall on one side and a burrow pit on the other. This spatial variation breaks down the monotony of moving continuously along walled passages.

In some areas the relationships between the burrow pits, the surrounding walls and the paths are very picturesque. The interesting aspect of these relation-

ships is in how these elements come together so naturally and result in beautiful compositions. These unique and varied occurrences, as illustrated in the case of the entrances to compounds, are unplanned and are a consequence of the organic growth of the city.

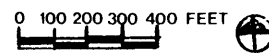
OBSERVATIONS IN A SMALL CLUSTER OF COMPOUNDS

Location and Description

The compounds to be examined are situated in the outer fringes of the dense settlement which surrounds the palace and mosque. They are located approximately one mile out along a road which radiates from the palace and mosque area out toward one of the former



Source: Barbara Urbanowicz, Ahmadu Bello University

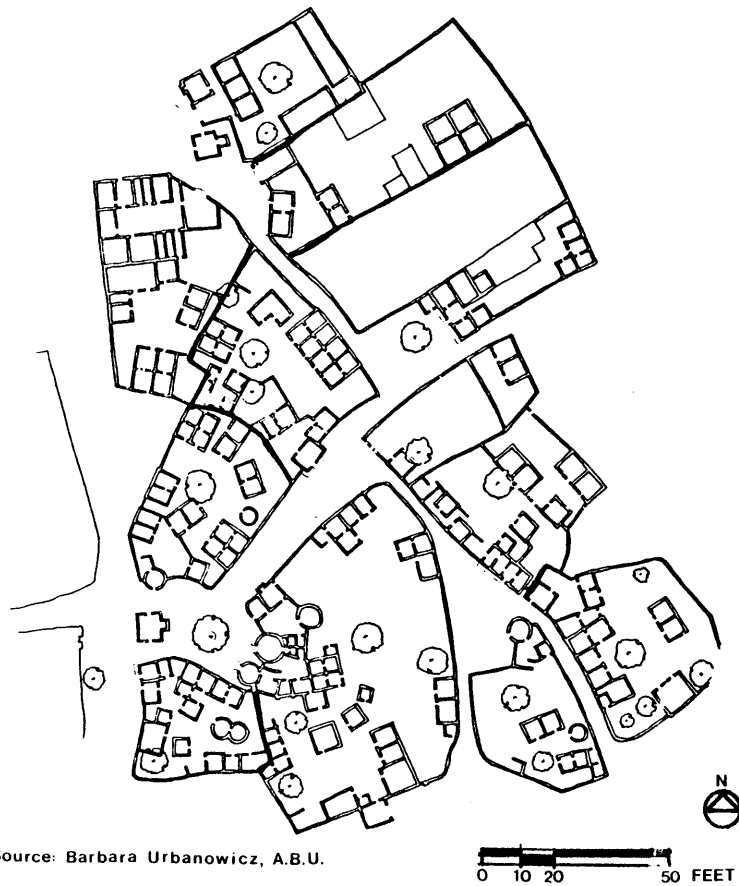


southern gates of the city near the market. This small cluster consists of five compounds which are separated from another small group of compounds by the road. Two of the compounds out of the

five border the road and located between them is a small building which serves as an informal mosque. Behind these compounds are three others, one of which also has a small mosque located in front of it.

The exterior wall layout varies among these compounds; however, they all have sections of their walls which are relatively straight. These walls are useful in that they allow the predominately rectangular shaped rooms on the interior to be built into them. The wall height among these compounds averages between seven to eight feet, with the exception of the compound on the lower left where some of the walls are ten to twelve feet.

Another aspect concerning the ex-



Source: Barbara Urbanowicz, A.B.U.

terior walls in this cluster is the use of decoration. The two compounds which border the major road have decoration on the sides on their walls which face the path that is between them. This decoration consists primarily of designs that are painted on cement plaster which is a veneer over the mud walls.

The entrances to these compounds consist of both round and rectangular zaures. Several of the entrances are set back away from the circulation space which they face. This is a frequent occurrence among compounds in clusters. Decoration is also used on some of these entrances and is found on the two compounds whose walls, as mentioned, are also decorated.

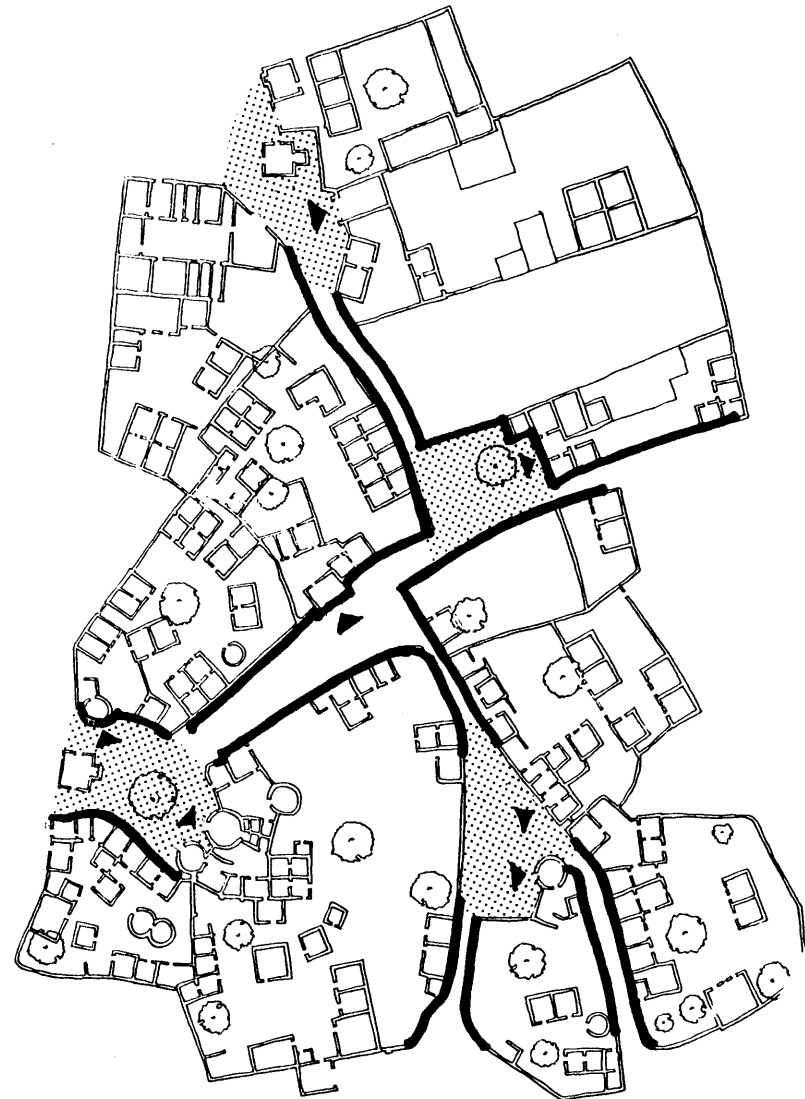
All the compounds are large, over

5000 square feet, with the exception of the small wedge shaped one (approximately 1200 square feet) which stands between two large compounds. By looking at the interior layout of the larger compounds, it is seen that they possess internal walls which sub-divide the compounds into separate units. In general, when a common wall divides a compound into different units, it usually indicates that separate households have been established among extended family members. This is verified in the case of the compound which borders the road on the lower left. In the larger portion of this compound resides a mallam (Islamic teacher) and his family. In the smaller portion which faces directly on the road is the residence of the mallam's brother.

Each unit has its own entry which is also true in the other large compounds.

Correspondence Among Walls

Several of the walls in this cluster of compounds have a noticeable correspondence between each other. This correspondence occurs on the walls which border the circulation space between the compounds. These walls have roughly parallel relationships with one another, while the other sides of these walls bear no relationship to each other. The parallel relationships of these walls indicate that the maintenance of a common circulation space was important among these compounds.



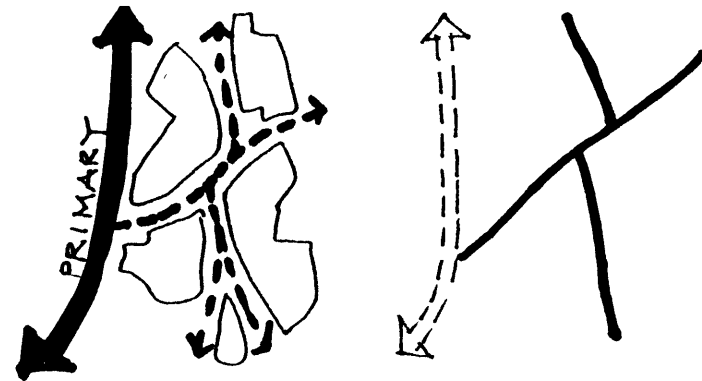
Circulation

The circulation space is woven between the compounds and is a branch off of the major road which passes by this cluster. Also, many of the entrances to the compounds are located along these routes, which indicates that they are frequently used by the residents here.

These are the two characteristics which illustrate what I defined earlier as secondary circulation routes. These routes and the compounds which border them are usually distinguishable when looking at a map of the walled city.

As a result of the way that these compounds came together and the manner in which their walls correspond, the circulation space between them has an

order. The circulation space is roughly orthogonal, consisting of two shifted cross axes. The orthogonal characteristic



of this circulation cannot be considered a planned occurrence, but was more an outcome of use of relatively straight walls along these routes. These walls come together in an informal way and produce varying spaces between the compounds.

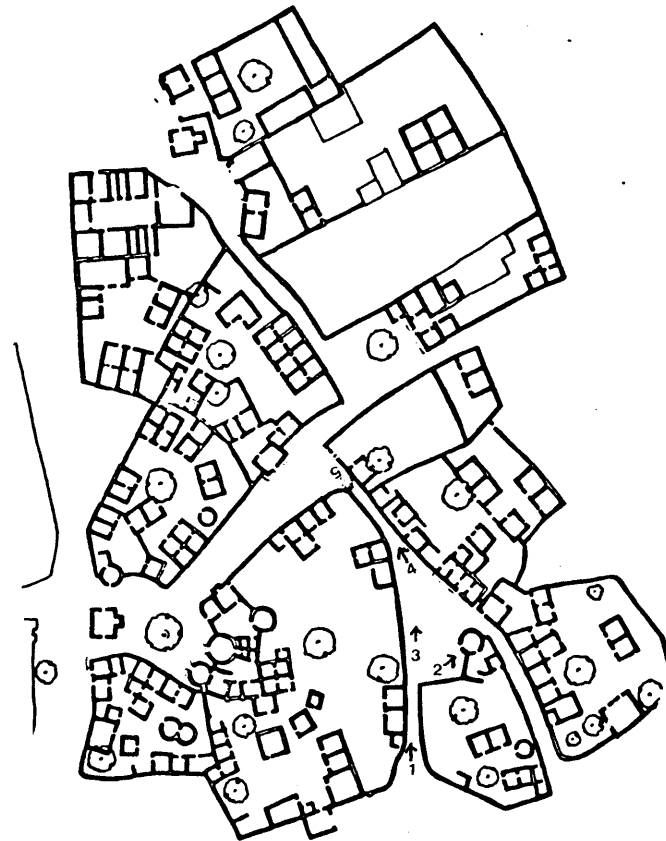
Spatial Sequence

The spatial sequence of the circulation consists of walled passages of varying widths, between the compounds, which lead onto larger spaces. These larger spaces mark the entrances of these compounds and they follow an interesting pattern of being located at the end points of the walled passages. The space formed in each of these locations has a different configuration; however, each is a natural response to the wall layout of adjacent compounds.

Views

There are different views to be found along the paths which consist of walls and the spaces which are formed

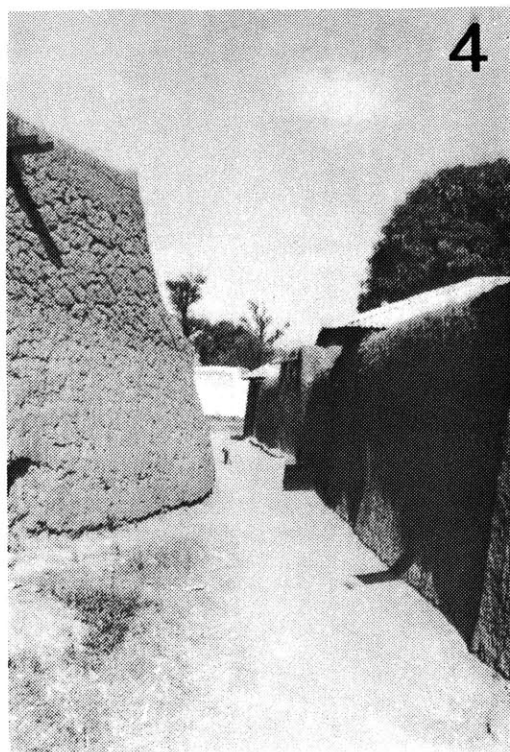
by them. Some of these views are contained and the only thing that is seen



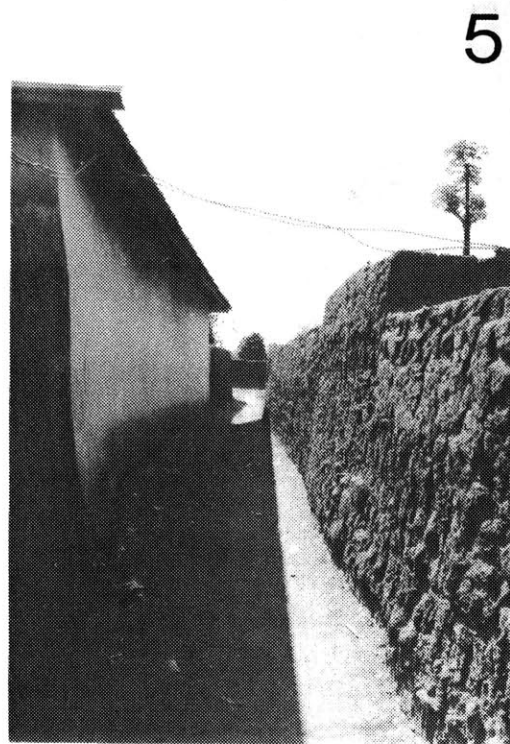
is a wall which is directly in front. Other views are more expansive and extend beyond the walled paths into the



surrounding area. These are not planned views or vistas, and yet some are picturesque because the walls can frame interesting views of a segment of a wall or space which lies ahead. These framed views expand into their actual context as they are approached. The most pic-



turesque view that I encountered was one where the walls framed a view of a large tree which had in the background a curved decorated wall. This view was seen by looking southwest along the wide path



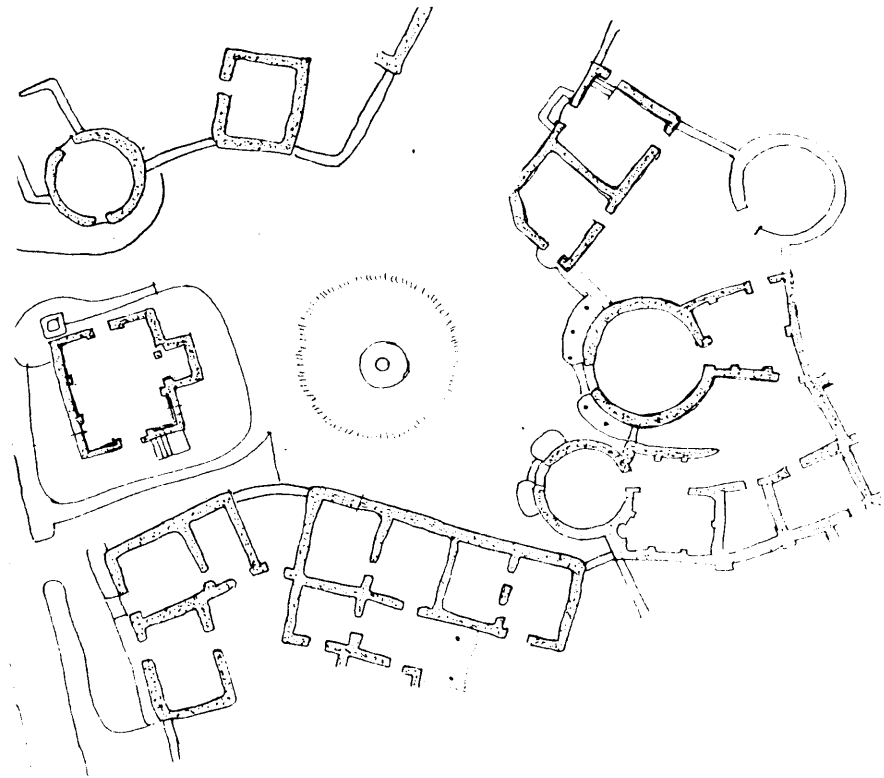
which separates the two compounds which have part of their walls bordering the main road.

Entrance Space in Detail

In the space which surrounds the tree and decorated curved wall is located the entrance to the compound of the mallam. This space and the entrance correspond to the entry patterns and building forms which have been presented. They also illustrate the individuality that occurs in the design of these elements, and the beauty which can be achieved.

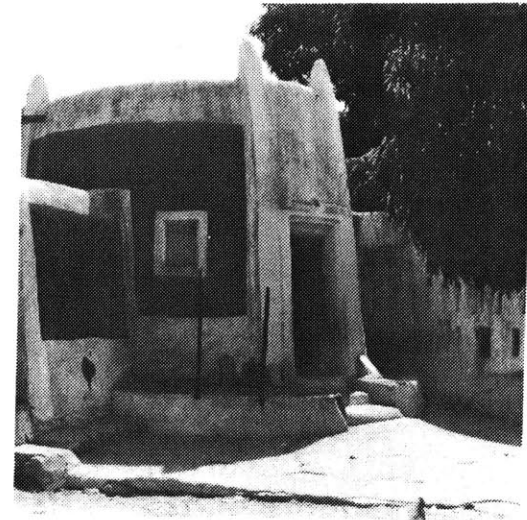
The space in which the tree is located is oval shaped. This shape is formed by the compound walls of the mallam and his brother curving around the tree and this gesture is continued by the walls of the compound across from them. This space is an example of how

walls adapt and form harmonious relationships with each other. This space is a node, around which are located the entrance into the mallam's compound, the entrance to the neighboring compound, and the small rectangular building which is an informal mosque. It also serves as



a junction between the major road and the secondary circulation system which branches off it.

The entrance to the mallam's compound consists of two circular zaures. These zaures have decorative openings in their walls, and they are also distinguished over their entrance doorways along the parapet by zanko. The zanko are the horn shaped projections which are often used as decoration on many compounds. On the exterior of each zaure are mud benches which are built into the wall for outside seating. The use of two entrances into the compound may be attributable to the need of the mallam to have one zaure serve primarily as classroom space while the other can be used by family members.

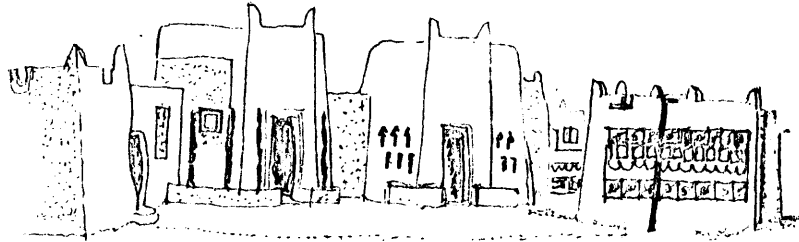


This entry corresponds to the pattern of the entrance being back from the circulation space, which occurs in many compounds in the walled city. In this particular case, it appears that the tree was the reason for the entrance being set back. Trees are important for providing shade and people often gather beneath them to seek relief from the heat which is often oppressive.

The walls are curved around this tree and in doing so, they frame a transition space between the entrance and the circulation route. The curved wall which is located behind the tree is particularly eye-catching because it is decorated. This decoration consists of graphic patterns that are painted on a cement plaster over the mud wall.

This entrance and the space which surrounds it illustrate how the inhabitants often adapt their compounds in response to natural features such as a tree in this example, and also to the shape of neighboring compounds. The forms and spaces which result from the adaptations differ among compounds and in this small cluster, one can see that none of the entrances are alike. The built result in this example is an individualized gathering place which was a response to the local site conditions. These informal gathering places occur in front of the entries to many compounds located on the winding paths in the walled city of Zaria. This particular entrance illustrates that a unique beauty can be achieved from the harmoni-

ous relationships between building forms of the entrance, the walled space which surrounds it, and the decoration of the wall itself.



Source: Barbara Urbanowicz, A.B.U.

CONCLUSION



There is incongruity in the architect applying the special criteria of professional architecture to built forms which were not the product of architectural specialization. Though we may enthuse over the qualities of space, the massing of forms or the expression of structure in vernacular shelter, these are abstract concepts which are not conditioning, let alone determining factors in the designs of the buildings. But it can be said that they are appropriate qualities to identify if they are present; they are a source of delight and also inspiration; they underline principles essential to the thinking of the modern movement and their extraction is justified.

Paul Oliver: Shelter and Society

The built environment of the walled city of Zaria consists of the traditional dwellings of its inhabitants, as it has for many centuries. These dwellings are mud walled buildings, called compounds, and they are the physical manifestation of the Hausa society which is based on agnatic kinship relations. The exterior walls of compounds provided protection for those living inside and reflect the Muslim practice of purdah, the seclusion of married women. The compound is a free standing unit within which all the activities of the family take place. The location of rooms, spaces, and interior walls dictate movement within the compound and define where the activities of the family members can occur. The importance of use

of space inside the compound predominates over formal considerations and this allows the compound to be a highly adaptable building form.

As a result of the adaptability of compounds, interesting formal and spatial variations can occur among them. The exterior walls of compounds have a variety of configurations and decoration. These walls often create interesting formal relationships with the entrance to compounds, the zaure. In front of many of the entrances to compounds are spaces which serve as transition zones between the entrance and the public circulation, which often allow for informal gatherings. In some compounds there is a harmonious relationship between the zaure, the exterior wall and

the transition space formed by the walls. When all of this occurs against a backdrop of exterior wall decoration, very beautiful individualized places result.

In many ways the city is a large compound. It is similar to a compound in that it was originally surrounded by an immense wall. Just as the compound is a self-sufficient, self-contained unit, the city also sought this by incorporating within the wall adequate open land for the storage and production of food during times of war. In a similar analogy, the shapes of rooms and spaces inside many compounds lack formal considerations in their layout, and in the layout of the city, there

appears to be little formal consideration in the arrangement of compounds.

The walled city of Zaria is an organic city. Its form did not result from an urban design or masterplan. It evolved from the compounds clustering together to create dense settlements. From looking at the map of this city, there appears to be very little order in these arrangements. However, there is an underlying political and economic structure in this society. The use of common conventions concerning compounds and circulation have created an order in the walled city.

The political structure of the city was vested in the authority of the emir,

who controlled the land and allocated plots. The economic structure of the city was the market. The organization of the compounds in the city form roughly two dense settlements, one surrounding the palace of the emir and the Friday mosque, and the other surrounding the market.

A visual order in the environment results from the use of mud for the construction of compounds. There is a continuity between the compounds and the red laterite soil from which they are built. The total environment is dominated by a reddish brown color and this evokes a picturesque image of the buildings emerging as natural forms in the landscape.

The walls of compounds reinforce the human scale of this city by having an average height of seven to eight feet, with the height of some walls reaching a maximum of approximately fifteen feet. These walls are irregularly shaped and direct movement along the circulation network which is woven between them. The walls along these routes often correspond to each other in parallel relationships. Unlike an order of a city which results from a street system laid out on a grid, the order in the walled city stems from the walls of compounds.

The circulation space which surrounds the walls of compounds is diverse in its directions and dimensions, yet

there is an underlying order. There are two types of circulation space which I have identified--primary and secondary circulation routes. The primary circulation consists of major roads and foot-paths which radiate from the palace/mosque area and the market, through the dense settlements which surround them. The secondary circulation routes consist of the paths which branch off the primary routes. These routes are frequently travelled by the inhabitants of a particular area and are identifiable by numerous entries to compounds being located along them. Secondary routes are in contrast to other passages between compounds which are often empty, filled with vegetation, and are essentially left over space. Just as interesting relation-

ships may occur at entrances to compounds, very interesting formal compositions and juxtapositions of spaces occur within the circulation system.

This analysis has attempted to show that an order can exist in an environment although it lacks an urban design or masterplan. The vernacular architecture of this city composed of compounds responded to the cultural and usage needs of its inhabitants. The building form of the compound was adaptable and allowed for much individuality. As a result of this, the environment is enriched both formally and spactially, with variation.

The application of the vernacular architecture in the walled city of Zaria to contemporary buildings, particularly in northern Nigeria, is not direct, and has its limits. It should be remembered that with the exception of the mosque, the compound was traditionally the only building form in the walled city. In the context of a developing society where banks, offices, hospitals, governmental and other institutional buildings are needed, the building form of the compound has no direct application. However, if one considers the qualities of usage, adaptability, and variation of commonly understood forms within a culture as desirable goals in contemporary buildings, then the compounds do have a contribution to make.

In terms of housing, the compound does provide important analogies and form references. Compounds are an example of responsive housing which allowed for the individuality and use requirements of the inhabitants to be expressed. Although the social context from which compounds emerged is changing, contemporary housing should reflect the traditions of a culture. Issues concerning privacy, location of rooms, and circulation are ones which seldom change over night, and are important considerations in developing new housing.

The capability of mud as a building material should also be explored as a potential building material, especially for housing, where it has been traditionally used. If one only considers

how the mud construction was adapted to construct the Friday mosque in the walled city, then the idea of using mud does not seem absurd for contemporary housing.

It is clear from the complexity of modern buildings and city infrastructure that one cannot recreate the past by constructing replicas of compounds, nor is there any value in doing so. However there is also no value in rejecting the past. The compounds have an order and a logic of their own. Their exterior walls provided a framework from which variation through individual expression could occur. This adaptability resulted in a humane environment in the context of those who lived in the walled city.

If for no other reasons than these, the compounds should be valued, for they achieved the kinds of qualities which are desirable today in contemporary architecture.

END NOTES

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- ²Hogben and Kirk-Greene, The Emirates of Northern Nigeria, London, 1966.
- ³Schwerdtfeger, F., Housing in Zaria in Shelter in Africa, Paul Oliver, editor, London, 1971, pp. 58-79.
- ⁴Ajayi, J. F. A. and Crowder, M., History of West Africa, London, 1971.
- ⁵Schwerdtfeger, F., *ibid.*, p. 61.
- ⁶Hore, P. N., Weather and Climate in Zaria and Its Region, Occasional paper #4, Ahmadu Bello University, Zaria, 1970, pp. 41-54.
- ⁷Hore, P. N., *ibid.*
- ⁸Schwerdtfeger, F., *ibid.*
- ⁹Schwerdtfeger, F., *ibid.*
- ¹⁰Smith, Abdullahi, Notes on History of Zazzau under the Hausa Kings in Zaria and Its Region, Ahmadu Bello University, Zaria, Nigeria, 1970, pp. 82-101.
- ¹¹Urquhart, A. W., Morphology of Zaria in Zaria and Its Regions, *ibid.*, p. 124.
- ¹²Urquhart, A. W., *ibid.*
- ¹³Schwerdtfeger, *ibid.*, p. 62.
- ¹⁴Urquhart, A. W., *ibid.*, p. 128.
- ¹⁵Urquhart, A. W., *ibid.*, p. 127.

¹⁶This was the most frequent response to my question concerning wall height.

¹⁷Schwerdtfeger, F., *ibid.*, p. 71.

¹⁸Professor Schwerdtfeger teaches architecture and conducts research at Ahmadu Bello University in Zaria, Nigeria.

¹⁹Schwerdtfeger, F., *ibid.*

²⁰Schwerdtfeger, F., *ibid.*

²¹For more information on who shifts in the family composition are revealed in the physical form of the compound see Housing in Zaria by F. Schwerdtfeger in Shelter in Africa, Paul Oliver, editor, pp. 58-79.

²²Clapperton, Narrative Travels and Discoveries in Northern and Central Africa 1823-1824, Boston, pp. 38-39.

²³Clapperton, *ibid.*

²⁴Barth, H., Travels and Discoveries in Northern and Central Africa 1849-1855, London 1857, p. 123.

²⁵This was the general pattern of Islamization in many Sudanic kingdoms. See Basil Davidson, History of West Africa, NY 1966. For specific information on Islam in Hausaland see relevant articles in History of West Africa, Ajayi and Crowder, editors, NY, 1972.

²⁶Schwerdtfeger, F., Housing in Zaria in Shelter in Africa, Paul Oliver, publisher, p. 62.

²⁷Today, in order to be considered modern, people build with concrete block which is a sign of status.

²⁸Kirk-Greene, A., Decorated Houses in Northern Nigeria, Kaduna, Nigeria, 1963.

²⁹Kirk-Greene, A., *ibid.*

³⁰Kirk-Greene, A., *ibid.*

³¹Kirk-Greene, A., *ibid.*, p. 7.

³²Kirk-Greene, A., *ibid.*, p. 7.

³³Schwerdtfeger, F., *ibid.*

³⁴Kirk-Greene, A., *ibid.*, p. 12.

³⁵Schwerdtfeger, F., *ibid.*, see footnote 17, p. 79.

³⁶The maigida's former title was madauci and people in the community still address him as such.

³⁷Rapoport, A., House Form and Culture, New Jersey, 1969.

³⁸Hogben and Kirk-Greene, *ibid.*

³⁹Smith, A., *ibid.*, p. 82.

⁴⁰Smith, A., *ibid.*

⁴¹Smith, A., *ibid.*

⁴²Smith, A., *ibid.*

⁴³Smith, A., *ibid.*

⁴⁴Raynaud, P. L., The Role of Design in City Form: Organic and Planned Towns, MIT M. ARCH Thesis, 1980.

⁴⁵Urquhart, A. W., *ibid.*

⁴⁶Moody, H. L. B., The Walls and Gates of Kano City.

⁴⁷Uruqhart, A., Planned Urban Landscapes of Northern Nigeria: A Case Study of Zaria, Ahmadu Bello University Press, Zaria, 1977, chapter 3.

⁴⁸Smith, A., *ibid.*, p. 91.

⁴⁹Schwerdtferger, F., *ibid.*, p. 62.

⁵⁰I acquired this information from an interview with a resident of the walled city, November 1980.

⁵¹Schwerdtferger, F., *ibid.*, p. 62.

⁵²This was the response to my question on how one could give directions to find people's compounds in the city.

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