Civil and Environmental Research
ISSN 2224-5790 (Paper) ISSN 2225-0514 (Online)
Vol.3, No.13, 2013

Learning from Traditional Architecture: The Example of Somba

ADEDOKUN Ade
JOSEPH AYO BABALOLA UNIVERSITY,
IKEJI-ARAKEJI,OSUN-STATE

ABSTRACT

One of the primary purposes of man's shelter is protection against adverse or undesirable climate environments, which also includes adaptability and ability to mould its material content to provide comfort. Indeed, shelter is a basic' requirement of human existence from physical stresses imposed by the environment and climate variations provide the most common set of stresses on homeotherrns. Adedeji (2004) argued that housing issues affect the life of individuals as well as that of a nation; hence both nature and society ascribed great importance to the role it plays to bring about human comfort.

All over the world, urban centres are expanding by migration and natural population increase. This is especially true of the tropical countries where the proportions of urban centres are increasing fast. The poor population of this region is pushed into the urban centres because of the lure of the city. Once in the city, they face problems of inadequate of unavailable housing and where available, these buildings (usually mid latitude European styles) do not really or meet the desired need of the people. The other poor ones left behind in the rural areas are also faced with the pressure of abandoning their traditional way of life including their architecture in preference for imported architecture and styles. In the process, because of the inferiority complex, many no longer have homes. There is also a breakdown or loss of traditional skills in traditional house design.

1.0 INTRODUCTION

The re-current nature of housing needs and the unending desire for good housing tend to confirm the widely impression that there is hardly any society that has been able to cope satisfactorily with its housing requirement (Modupe, 1986). In a recent study (Adedokun, 1997) observed that traditional architecture among various West African tribes show a lot of sensitiveness to the climate in particular and environment in general. He also concluded that traditional building materials are generally obtained at no cost indicating affordability by most people. On such positive note, its advantageous that traditional architecture be further studied to learn a lesson for the benefit of rural traditional African settlements primarily inhabited by poor people.

One of such rural settlements inhabited by poor people are the Togo-Atacora highlands of northwest Benin Republic. One of the principal tribes occupying this region are the Sombas. They have successfully adapted to the environment through architectural designs and traditional have houses, which architecturally were designed to use mainly raw materials, which are found in their environment.

A lot of their architectural design practices are worthy of emulation even for modem architecture. Unfortunately, a limited study had been done to examine their traditional architectural designs, document them and evaluate them for the purpose of adapting them to modern designs.

The present study is therefore designed of document some of these practices of traditional architecture of the Sombas. The paper in particular examines the peculiar characteristic of the Somba architecture with reference to their housing design, materials and the organizational aspects of the housing construction towards incorporating them into modern deigns.

2.0 THE STUDY AREA

The Somba people live in the Togo-Atacora region located to the northwest of the Republic of Benn. Characterized by denuded fold ranges, the Atacora region is highland areas oriented north-north-eastwards to south-southwest, and varying in height between about 200m to more than 600m. The region is massive and ringed with deep valleys and abrupt edged plateaux, which extend to the neighbouring countries of Togo and Ghana (near the Awkwapim Hills of Ghana).

The climate of the region is generally the Guinea and Sudan Savanna types with rainfall between about 800mm and more than 1200mm. The highest rainfall occurs to the south while the lowest occur to the north.

The rainy season is mainly between April and October to the south and May and September to the north. The soils are generally of ferruginous types, while as already noted above, the vegetation is generally Savanna types, degraded in many areas.

The region is generally drained by tributaries of the Niger, for example, the Pendjari, which takes its source from the Atacora region and flows north.

The Somba people are among the diverse groups of people occupying the Atacora region, who have succeeded in providing themselves solutions to the problem of shelter and comfort from the stress caused by the characteristics of the environment. In particular, they have developed housing types based on some traditional architectural practices, which have assisted them in finding solutions to aspects of environmental problems as

related to their sensation and comfort. In this paper, some aspects of these architectural characteristics are discussed.

3.0 METHODOLOGY AND DATA COLLECTION

Data for this paper were obtained through questionnaires given to students of architecture at the University of Lagos, who come from the Republic of Benin and particularly those who are from the northern part of the country. Some of these students also went back to their region to obtain information, which were used for their class programmes, and useful information was obtained. Visits were also made to the Cultural Attaché to the Beninois Embassy where oral interviews were conducted with the appropriate officials to obtain information on the peoples located to the northwest of the Benin Republic. A number of useful literatures were also collected from the Embassy and other published works.

4.0 THE SOMBA TRADITIONAL ARCHITECTURE

The basic form of the Somba architecture is the circular pattern. Perhaps, this form is for special reason used for their tradition, which is not known to the present writer. In addition, the form possesses continuity and centrality; giving preference to any direction.

The Somba house represents the basic elements of architecture, i.e. the point, line and plane. Structurally, the building is an arrangement of homogenous elements with a circular plan.

The Somba people live in scattered settlements along the slope of Togo-Atacora highlands. They have no nucleated villages or town; rather they are dotted along the slopes of the mountain. Their basic form of the architecture is the castle-like fortress, circular in pattern, and linked together by curvilinear wall. The pattern resembles a group of circular village/towns linked together by a curvilinear wall. The walls of the towers are closed towards the outside, except for little wall between them that forms a solid parapet wall. The round towers juts above the roof terrace. The granaries are positioned on top of the terrace and the only spaces with thatch roof while the other rooms have flat roofs. The rooms are sometimes covered with thatch during the rainy season. The granaries are large pots moulded individually and placed on the cylindrical towers and are reached from the top.

4.1 Housing Design

The Somba dwelling defines two spatial concepts. One these is defined by each tower, while the other is generated by groups of towers and their linking walls (see plan). One of the ground level, the first tower defines the entry and work area for the housewife, while on the terrace level is the sleeping room for the owner's mother and his younger children. This tower is the largest 'living area' in the house. The other towers are linked together to form a central hall. A large platform containing altars for many of the family's ancestors is placed opposite the entry (Fig.3), which tends to serve as a guard to the doorway; since the survey revealed that the Sombas believe in the powers of the ancestors to protect them. The stable area is located on one side, and on the other side is the passage-way to the upper floor through the kitchen-stairwell. The terrace on the upper level is a multi-purpose family space used at various times for cooking, dinning, relaxing and sleeping. Granaries sit on towers 2 and 3 on this terrace. By the use of a simple change of level to the kitchen stairwell, the domestic animals are restricted to the lower level. A functional spatial organization is thus created. It has areas for family activity, and religious worships and also functions as a barn to house the animals and store the staple foods.

4.2 Housing Materials and Construction

The shortage in building materials for housing is further exacerbated by the fact that building materials are also required in other construction sectors such as the maintenance of civil engineering works. (Akinluyi *et. al,* 2013). The demand for building materials for housing therefore competes with the demands made by other construction works. (Akinluyi *et. al,* 2013).

The most building materials include cement, and cement related components, and corrugated iron roof and the choice of building materials is limited by a country's state of the building material industry; it is also true that other, very critical, variables such as cultural context, the quality of the built environment, legal and political institutions as well as the level of urbanization, influence the
choice of building materials. (Akinluyi and Adeleye, 2013).

The Sombas use banco, tree trunks and branches, stones, millet straw, etc, as their building materials. The terrace on the first floor is reached by a ladder made of wood, tied together, thus demonstrating the articulation of spaces on different levels. They intelligently solved the problem of draining the terrace by sloping the terrace slightly; using varying sizes of girders and beams.

The idea of thatching the granaries are done probably to compensate for the possible cracks on the wall of the granaries, and to keep rain off the walls because of the perishable items kept in them.

The Sombas build their granaries in form of simple geometric shape of a cone, by moulding the banco and using thatch made of millet stalks tied around it (Fig.4). The shape of the granary forms a framework for the pitched roof. The thatch used is not however, a durable material: it can only last for a short period of time because of the effects of heat and insect attack. Furthermore, it is highly susceptible to fire.

The banco used in the construction of the Somba house has a low silt content, which means that they are in varying proportion of sand and clay. Whereas the materials are not useful for agriculture, they are very useful for building. The clay, for instance, makes the soil sticky and the sand gives them strength for construction. Banco is an extremely versatile material and strong in compression. There is even no problem in constructing a storey building. Indeed, any of the basic shapes can be expressed in mud. This is probably the reason for the circular plan of their houses. Mud also gives a wide variety of roof forms, for example, flat roof vaults.

Tree trunks and branches act as the post and the tensile girders and beams, which support the terrace and activities on the terrace. The stones act as aggregates for the terrace construction. For the construction of the house, the family usually seeks the advice of recognized master builders. Building activities take place after their harvest season.

4.3 Architectural Functions and Organization Aspects

In the traditional Somba region, the castles stand far apart from one another. This is as a result of the size of the fields and the individualistic behaviour of the Sombas. The entrance of the castles is usually oriented towards the west in the direction of their traditional enemies, the Losus. This orientation, which is peculiar to all of the Somba people, gives an interesting formation of the different homesteads with their entrance tower facing the same direction. The orientation diminished the possibility of surprise attacks from the rear. The Sombas, according to existing literature claim that their ancestors express displeasure when the orientation is changed. This western orientation also has a very important function; it shields the entry space from the winds bringing eastern rain. These winds, from the climatic point of views are those, which accompany line squalls and disturbance lines of West Africa.

An interesting aspect of the Somba architecture is the emphasis on the function of a space in relation to its scale. The spaces have been designed in terms of two levels of human scale. The entry tower, the central hall and the kitchen stairwell are built to the human scale in the standing position, while the sleeping rooms are built to the human scale in the sitting position (see Fig.3). Another effective function, which the small scale of the sleeping room gives, is the sense of intimacy and it is usually warm during the chilly harmattan nights. The circular linking wall gives the Sombas a wider viewing area, and a sense of security. Within the building, the location of the kitchen tower is very important to determining the location of all the rear towers; the kitchen tower is either north or south of the entrance. Their conveniences are usually separate from the main dwelling, which are usually towards the back.

4.4 Unity

In the Somba region, the house as earlier said represents the basic elements of architecture, namely, the point, line and plane. The architecture also satisfies the structural requirements like equilibrium, stability strength, functionality and economy. Structurally, the building is an arrangement of homogenous elements with a circular plan arranged linearly.

The circular plan or figure possesses continuity and centrality, giving preference to any direction with the emphasis on the function of space in relation to its scale. A further unity is achieved functionally by the positioning of the master's bedroom located very close to the only entrance to the terrace, which forms a focal or central point to the other rooms. The rooms are never in direct communication between themselves. Instead, they communicate through the open space on the terrace, which often becomes the identifying element of the social role. Thus, the terrace, on three levels and for different functions, unites all into one primary whole.

4.5 Social Services

The relations between the room and courtyard in precise and unchangeably times and manner determine the most important relationship of the house. The bedroom is the pre-emanating private place, where an individual secludes oneself from others while the link with others is mediated by the courtyard as a course, a place of meeting, of work and relaxation.

They built beautiful homes, which look like miniature chateaux, by joining a series of towers with linkage walls without windows. They build a roof terrace as a central living area. The houses look like fortresses from outside. Thus, defense and independence are reflected in the social organization of the Somba people. They live in scattered settlements of a distance not less than 150m apart from each other and are dotted along the slope of the mountains — a fortification that affords them to see their enemies from afar in preparation of surprise attack.

The architecture of the Sombas can be seen as the product of their environment, especially with regards to climate, soils and vegetation. Climatically, the characteristics of rainfall affect the soil and vegetation, and consequently the materials used for the buildings. For example, wood and thatch of millet stalks abundantly available to them harmonize with their surrounding. Their granaries with thatch roof protect possible cracks on

the walls because of the perishable items kept in these granaries. Flat roofs are equally covered with thatch to keep off the water percolation during the rainy season.

The banco used for the walls of their dwellings have good insulating properties, by retaining heat during the hot days and keeping the interior cool and releasing heat at night when it is cold. The insulating materials of the wall and the use of space in relation to its human scale in its sense of intimacy also provides warmth during the chilly nights, and ventilation and lighting during the hot day.

Ventilation and lighting provided by the use of small openings at the topmost part of the wall is very efficient because light penetrates more into the small rooms. The problem of drainage is intelligently solved by sloping the terrace slight using varying degrees of girders and beams.

The individualistic life-style of the Somba has resulted in their dwellings standing apart from one another with orientation and entrance towards the west to shield the entry space from the winds, bringing eastern rainfall from the east as already noted.

Their love for their domestic animals make them provide space for them within the interior of their houses to stay during the wet season. Several years ago, the Somba region was an impassable area inter-spaced with the typical castles, (their houses) with millet fields and plantation, which grow so exuberantly during rainy season. Thus, the village disappeared beneath the plants that the area seemed uninhabited and deserted. But still, within the millet fields and under their castles, the Sombas lives with their animals and practice their farming.

There exist through the terrace, a strong spatial and visual continuity between the indoor space and the outdoor space. This is obviously an antidote for being able to see an enemy from a far distance. It also enhances good visual relationship by allowing for a wide range of view so that passersby to and from the market and the farm could be seen and interacted with. Their building orientation towards the west besides shielding from eastern rain is also to view their traditional enemies.

5.0 LEARN1NG FROM THE SOMBA TRADJTIONAL ARCIUTECTURE OF THE SOMBA

Aesthetically, the Somba house is beautiful. The building materials are almost incidentally the basis of decoration. The aspects of unity are reflected in Somba architecture, which are also characterized by self-unity, harmony, vitality and balance. The granary itself is an obvious visual entity having self-unit because of its remarkable conical shape. The materials used, i.e. the clay and wood, harmonizes with the surrounding. The jotting of the conical thatch roof granaries on both sides of the entrance in its front view bears balance and is a part of its aesthetics.

An interesting aspect of the Somba architecture is the emphasis on the function of space in relation to its scale. The spaces have been designed in terms of two levels of human scale. The entry tower is built to the human scale standing, while the sleeping rooms are built to the human scale in the sitting position. An effective function of this scale is in its sense of intimacy and usual warmth during the chilly night and well ventilated and lighted during the hot day.

5.1 Social Services

The relations between the room and courtyard in precise and unchangeably times and manner determine the most important relationship of the house. The bedroom is the pre-emanating private place, where an individual secludes oneself from others while the link with others is mediated by the courtyard as a course, a place of meeting, of work and relaxation.

5.2 Aesthetics

Aesthetically, the Somba house is beautiful. The building materials are the basis of the heading decoration. The aspects of unity are reflected in Somba architecture, which are self-unity, harmony, vitality and balance. The granary itself is an obvious visual entity having self-unity because of its remarkable conical shape. The materials used, i.e. they clay and wood harmonizes with the surrounding. The jotting of the conical thatch roof granaries on both sides of the entrance bears balance and is a part of its aesthetics.

5.3 Functionality

An interesting aspect of the Somba architecture is the emphasis on the function of space in relation to its scale. The spaces have been designed in terms of two levels of human scale. The entry tower is built to the human scale standing, while the sleeping rooms are built to the human scale in the sitting position. An effective function of this scale is in its sense of intimacy and usual warmth during the chilly night and well ventilated, and lighted during the hot day.

In modifying, the form should retain its place for reasons, apart from which are uniqueness, design considerations and structural fulfillment, of it acting as a point of intersection for the past and the future.

In recognition of comfort, openings should be made to facilitate effective ventilation of interior spaces. And these openings should be located on the sides. The single entrance to both floors should still be retained so as to control one main.

Thus, a lot can be learnt from the traditional Somba architecture, especially as regards the low-cost local technology and using the locally produced obtained from the environment. However, the characteristics of the architecture require adaptation and possibly modification. For example, window openings should be made to facilitate more effective ventilation of interior spaced, and these openings should be located on the sides. The concept of centrality is also a significant concept, which need be retained in modern architecture. But the doors and windows openings must be built with devices that enhance security.

REFERENCES

Adedeji, Y.M.D (2004). *Sustainable Housing for Low-Income Industrial Workers in Ikeja – Ilupeju Estate: Materials Initiative Options*. Paper presented at the School of Environmental Technology, Federal University of Technology, Akure.

Akinluyi, M. L& Adeleye, O.O (2013). The Building Industry In The Housing Programme: Technology, Materials And Labour Towards Adressing Housing Shortage In Nigeria. *Global Journal of Arts Humanities and Social Sciences.* Vol.1, No 3, pp.58-70. Published by European Centre for Research Training and Development UK (www.ea-journals.org).

Denyer, S. (1978): African Traditional Architecture. Heinemann.

Modupe, O. (1986, April). *Housing Provision in a Depressed Economy*. Paper presented at the then Ondo State Polytechnic Owo, Nigeria.

Oluwatoyin H. (1992): Traditional African Environments. Touche (Nig.) Ltd., Lagos.

Schwerdtfeger, F. W. Traditional Housing in African Cities. John Wiley, p. 24