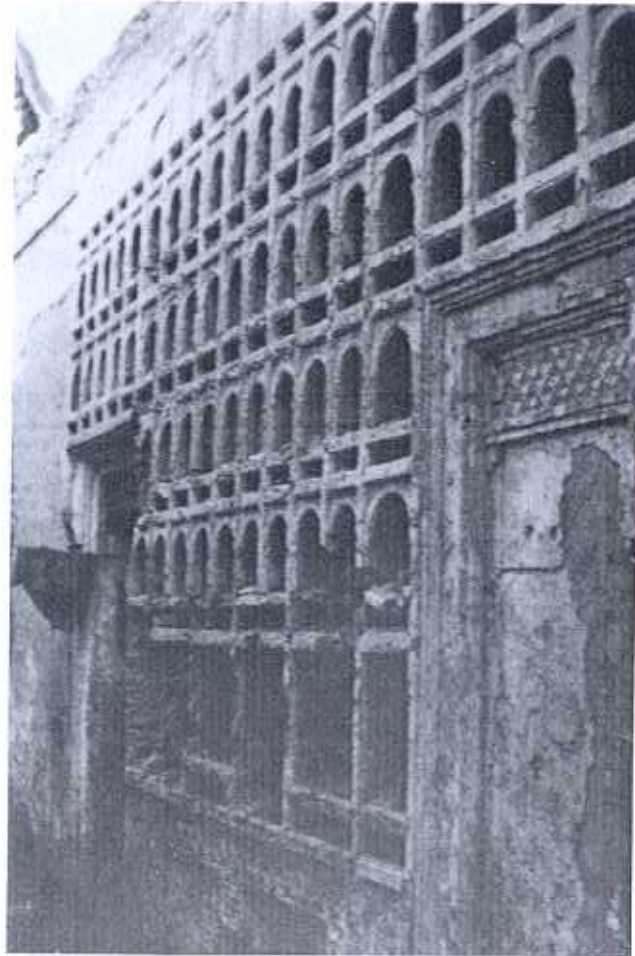


The conservation of the African architectural heritage. Part I

AMINI MTURI*



*Amini Mturi is Director of Antiquities, Tanzania.

FIG. 1. The ruined wall of a house in Shela, Kenya.

The emphasis in this and a succeeding article is on the architectural heritage of Africa south of the Sahara, with special reference to the conservation policies which have been adopted to date in an attempt to secure its protection. We also discuss the limitations and shortcomings of these policies, and the problems encountered by those responsible for formulating and implementing them.

Conservation philosophy in Africa

If we consider conservation not only as the protection, preservation, restoration and presentation of monumental remains of past cultures and civilizations, but also as the conservation of the total built environment, its planned and controlled change and the integration of conservation with the socio-economic development of the community—then architectural conservation in Africa south of the Sahara is a new phenomenon. To date, the main thrusts of policies have been:

- i. Selection, listing or scheduling, and the preservation and presentation of monuments, by which we mean both monumental remains of past cultures and civilizations, as well as buildings of historic and architectural significance.
- ii. The reconstruction and reassembling of representative examples of vernacular or traditional architecture in folk, open air or village museums, mostly on the outskirts of urban areas and rarely within the rural built environment in which such architecture is still a living reality.
- iii. The protection and preservation as historic or national monuments, of buildings which are of historic and architectural significance in urban areas, but without relating them to overall urban planning and development processes.

The African architectural heritage

Africa possesses a rich and diversified heritage which, historically, goes back many thousands of years as we may see in the monuments of the Meroe civilization, the rock-cut churches of Ethiopia and many other famous monuments. However, it is not the intention of this article to discuss such ancient monuments, but rather to emphasize the extant architectural heritage which consists of:

- i. Those architectural forms still being built and used.
- ii. Those which belong to the most recent past and influenced some of the extant architecture such as the ruined monuments on the east coast, whose Swahili characteristics influenced the buildings of the eighteenth- and nineteenth-century coastal towns. These latter are still extant, but their historic and architectural quality is being

threatened increasingly either by modern developments or by social and economic stagnation and decline.

- iii. Buildings of historic and architectural significance situated in urban areas.

The architectural heritage which is deemed worthy of conservation can be grouped into two main areas: the first is the vernacular or traditional, and the second is the colonial or foreign. However, this latter category can be subdivided into the local architecture with discernable local development and evolution, which was also influenced and enriched by foreign architectural elements and construction techniques, and the colonial or European architecture which is found mostly in urban areas. This second category displays two further divisions: the first integrates local and foreign characteristics, while the second involves the wholesale transfer and implanting of European architectural forms.

In order to explain more fully, each of these categories will be described in greater detail.

Vernacular or traditional

This is the indigenous architecture, which includes the mud or adobe buildings mostly found in the Savannah areas or Sudanic belt of West Africa and parts of Central Africa. It was a characteristic feature of the



FIG. 2. Town houses at Djenné, Mali.



FIG. 3. Houses in the south district of Lamu, Kenya.

urban centres of the West African kingdoms and empires of ancient Ghana, Mali, Songai etc. (Fig. 2). Another form is the architecture of the larger part of Africa south of the Sahara, which makes use of local materials, especially mud and wood, for wall construction and various types of thatch for roofing (Fig. 3). Although vernacular buildings differ, as one would expect, from place to place, there are a number of common features which give it a homogeneous entity, especially in terms of the following characteristics.

Materials

With the exception of mud or adobe and sun-dried bricks which are used in the architecture of the Savannah areas or Sudanic belt, the building materials which dominate African vernacular buildings are wood and thatch. Wood, mostly as poles, is used for wall construction in the framework, which is filled and plastered with mud as in any wattle and daub structures, although straw has been used also for wall construction. Wood also provides rafters and posts for roofing. Thatch is (or was) a universal roofing material, different types being used depending on availability (which is determined by the environment). Various wild grasses and reeds are used, but in some places, as in the banana-growing areas, leaves are used for thatching. Coconut palm woven fronds, known locally as *makuti* (Fig. 4), have long been used on the East African coast, and millet straw has proved useful in some situations.

Planning and design

Rectangular and circular forms predominate (Figs 5, 6), and these are found all over Africa from north to south and east to west. The circular seem more widespread than the rectangular, though the latter are

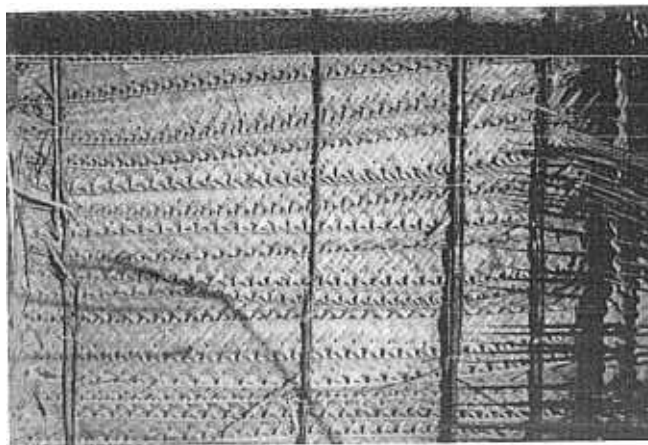


FIG. 4. A *makuti* screen in a Kenyan house.



FIG. 5. A house in Zaria, Nigeria.

gradually replacing them in many areas. The buildings may be grouped into three main types:¹

- i. Those composed of rigid elements. The walls of buildings belonging to this type are made of upright posts dug into the ground, to which



¹ Andersen, K.B., *African Traditional Architecture; A Study of the Housing and Settlement Patterns of Rural Kenya*, Nairobi 1977.

FIG. 6. A round-hut from Uganda.

horizontals are tied in parallel pairs. The framework is filled with mud or brushwood, or a combination of the two, and in most cases plastered both on the inside and outside with cow dung, ashes or different types of clay.

- ii. Those composed of flexible elements which are planted into the ground at one end, with integral walls and roofs. The structure is then covered with thinner saplings and grass or with dung or mud.
- iii. Those composed of flexible elements which are planted into the ground at both ends. The framework is made up of thin branches which are tied together and then covered with grass, leaves, mats or skins.
- iv. The roofs are flat or conical, pyramidal or segments of a cone or beehive type; usually they are supported by a central pole, and made of closely spaced and heavy rafters tied together to form a strong support for the thatch, which is applied in different ways. It might be tucked into the framework, or applied in layers fastened to the framework and tied together by means of thin reeds or sticks.

Spatial arrangement of buildings

The spatial configuration of different housing units in the compound is another distinctive feature of African architecture. Buildings, besides being functional structures, are also an expression of the life styles of the people who build and live in them. A widespread phenomenon of vernacular architecture is that different buildings are constructed to serve specific functions or activities, and these are grouped to form homesteads or compounds. Thus within a compound we find individual housing units for the head of the family and for the wives (usually in a polygamous family each wife has her own house); there will be boys' and girls' quarters, sometimes a shrine, granaries, and specific areas for such activities as cooking and the preparation of foodstuffs such as grinding and pounding. The compound is usually not preplanned, but it grows and expands as the household expands both in terms of members and activities. For example, a compound might start as a single housing unit for the head of the household and his wife, divided into subunits for specific activities and using the roof space as the granary. On taking a second wife, a new house will be built; and if the children have grown up boys' or girls' quarters will be added. A common or central granary might also be added, while the roof space of each individual house is used for the storage of grain and other foodstuffs required for day-to-day use.

Colonial or foreign architectural forms

The second major category of the African heritage is what has been described as foreign influenced, and two main architectural forms have been suggested.

Local architectural forms with recognized foreign or external influences

The main characteristic is that these forms were influenced historically by external factors, which were probably instrumental in their initial development; but gradually they became integrated with local elements, especially in the use of materials, construction and decorative techniques, so much so that the final product is not a reproduction or copy of any homogeneous group of architectural forms from abroad. Swahili architecture and Sudanese mud architecture are the best examples.

In the case of the Swahili architecture of the east coast, it has been argued that although a number of features are comparable and similar to those found in the Islamic architecture of Iran, India, Syria and Iraq, for every correspondence noted the buildings of the Islamic region show numerous features completely different from those of the Swahili architecture, and are derived from a fundamentally different background and approach. Because of this, it has therefore been maintained that the east coast style is to a large extent indigenous.² This is strengthened by a clearly discernable local evolution and development in the architecture, especially in the planning, design and decoration of the mihrabs in the mosques, and in the development of decorative techniques which, from

² Garlake, P.S., *The Early Islamic Architecture of the East African Coast* (Memoir No. 1 of the British Institute for History and Archaeology in East Africa), Oxford 1966; Mturi, A.A., *The Designation and Management of Conservation Areas in Tanzania* (Unpublished dissertation, Institute of Advanced Architectural Studies, University of York), 1982.



FIG. 7. Cut and dressed coral at Gedi, Kenya.

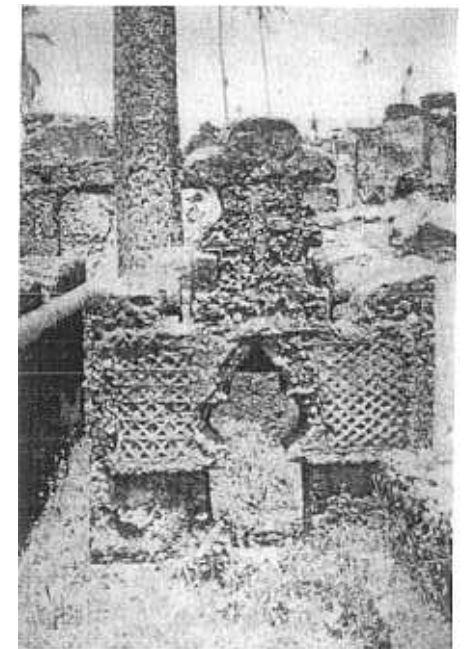


FIG. 8. A tomb at Kaole, Tanzania.

the eleventh to the seventeenth centuries, were predominantly of applied mouldings of cut and dressed coral (Figs 7, 8); during the eighteenth century, the most common decorative technique was carved plaster.

Swahili architecture is dominated by two building materials—coral stone or coralline limestone, and mangrove poles. Coral provides the main building material for the fabric as well as the lime used as mortar and plaster for rendering, wall finishing, and floor and roof screeding. Coral is used either undressed or dressed, or cut, dressed and closely fitted together (especially in the construction of mihrabs, columns, and for applied or decorative work). The mangrove provided timber for rafters, beams, roofing poles and lintels. Although vaulted structures—barrell and cloister vaults and hemispherical domes—were known and used for roofing, especially in mosques, the majority of buildings have flat roofs surrounded by a low parapet wall. The flat roofs are made of coral lime concrete, poured over roughly cut rectangular blocks spanning the rafters. The top of the roof as well as the underside of the ceiling is rendered with lime plaster, in the former case as a waterproof layer. As well as the closely fitted and dressed coral stone, the main decorative techniques are carved mouldings and plaster (Figs 1, 9), pilaster recesses,



FIG. 9. A craftsman carving plaster in a building in Lamu, Kenya.



FIG. 10. Trefoil arches in a coral-constructed building in Lamu, Kenya.

arch decoration, inserted coral bosses and ceramic inserts. Arches, constructed of dressed coral stones, have been used in the *mihrabs*, main doorways and windows, and structural arcades between the bays of vaulted buildings. The simple or drop arch is the most common, but stilted drop arches were used during the sixteenth century. Trefoil arches, used as purely decorative features, appeared during the seventeenth century (Fig. 10); and distorted foliate and transverse arches are common in mosques of the eighteenth and nineteenth centuries.

In terms of planning and design, the use of mangrove poles with a maximum span of 1.80–2.80 metres determined and restricted the design of buildings, and it has been argued that this was probably the most important single factor in the development of the architectural style. Because of this limitation, the buildings are permutations of narrow, long rooms combined in various ways according to their size, nature and function. For example, domestic buildings including palaces are usually a series of dwellings arranged around sunken courtyards, each dwelling being composed of parallel long rooms opening into the courtyard (Fig. 11). Mosques are either square in plan (Fig. 12) if transverse beams are used, or long and narrow if the beams are placed longitudinally.

During the eighteenth and nineteenth centuries, new ports and towns grew and prospered along the east coast north of Mozambique, following the defeat of the Portuguese by the sultanate of Oman. The architecture of these towns was based on the Swahili form which had developed along the coast, and was characterized by buildings fronting on to narrow, winding streets. The buildings, mostly two storeys high, contained shops on the ground floor street frontage, and residences on the upper floor. This development is foreshadowed in Kilwa Kisiwani where, during the late sixteenth and early seventeenth centuries, upper storeys were added to existing buildings. Although some Omani and Indian elements are noticeable in the architecture of this period, the main features including the use of coral and mangrove, construction techniques, roof types and design are still Swahili. Towns of this period, including Lamu and Old Mombasa in Kenya (Fig. 13), Bagamoyo, Mikindani, Kilwa Kivinje and Pangani in Tanzania, are still extant, and their distinctive, easily recognizable quality of townscape owes much to the Swahili character.

Mud is one of the universal building materials, and it has been widely used throughout history. In the vernacular architecture of Africa south of the Sahara it has taken the form of adobe or sun-dried bricks. Burnt brick is a relatively new development in Africa. The mud architecture of the Sudanese belt, which made use of both adobe and sun-dried bricks, is indigenous; but due to the trans-Saharan caravan trade and the introduction of Islam, it was influenced by North African Islamic architecture. This is especially noticeable in the mosques (Fig. 14), though even so the designs are basically African. Obvious Islamic elements are the pointed arches, minarets, pinnacles and turrets. The idea of vaulting is probably

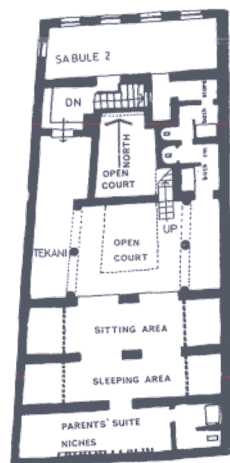
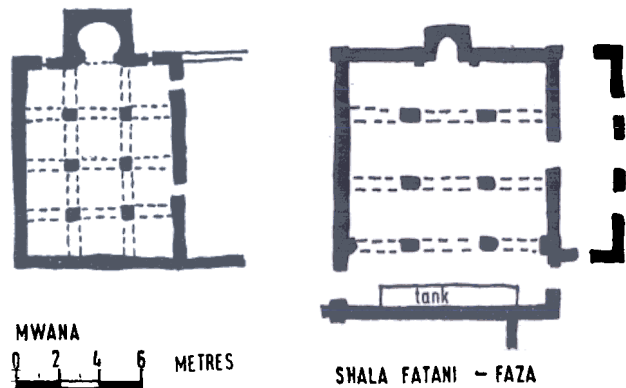
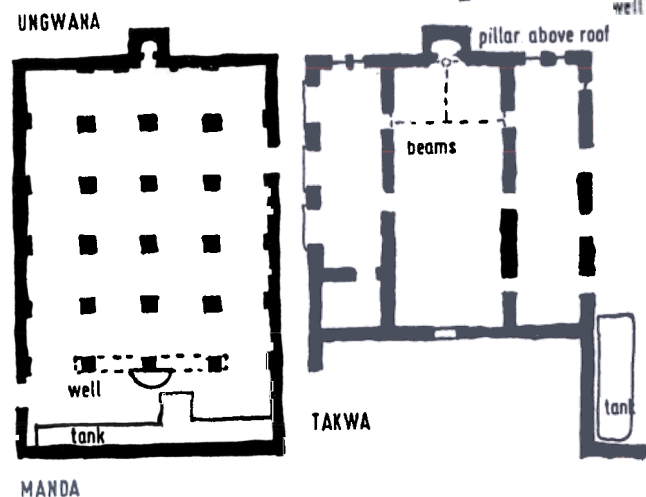
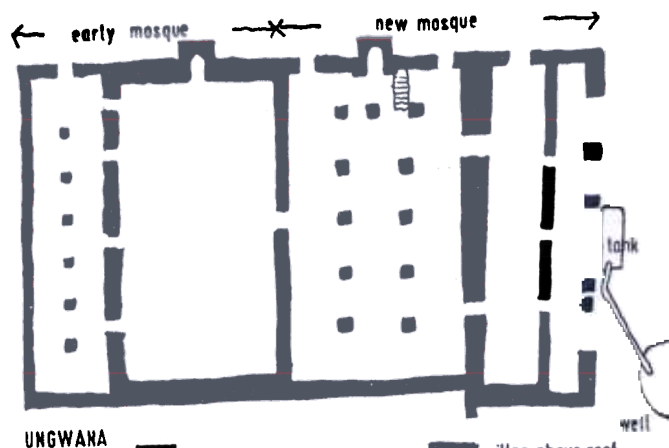


FIG. 11. (above) Plan of a house in Lamu, Kenya.

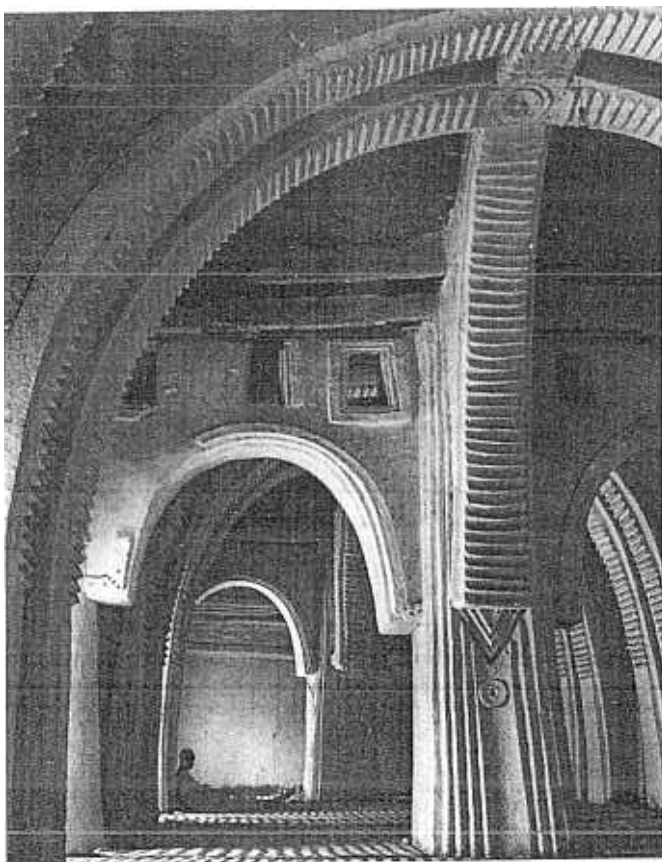
FIG. 12. (left) Plans of mosques in Lamu, Kenya.



FIG. 13. A street in old Mombasa, Kenya.

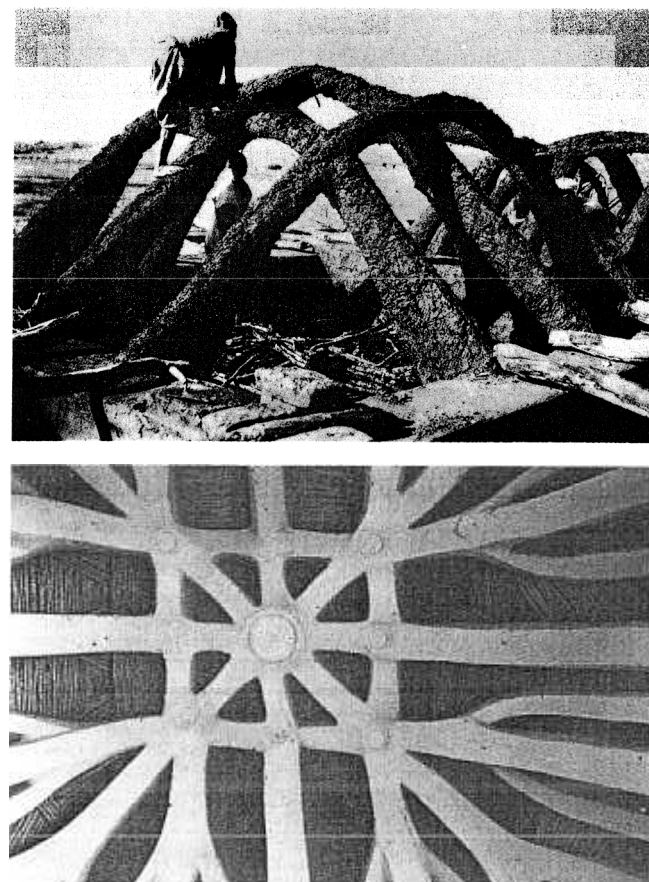
foreign, but the design and construction was indigenized so that the skeleton of the vaults is made of flexible branches of slender tree trunks, tied together and covered with well-prepared clay (Fig. 15). The vaults start at floor level and join at a central point on the ceiling. In some cases, they assume the shape of a baobab tree, with branches stretching in separate directions from the thick, short trunk to support the roof. Secular buildings (principally palaces and residences of the well-to-do) (Fig. 16), as well as mosques, show similar characteristics. The buildings are rectangular, mostly constructed of sun-dried bricks, although

FIG. 14. Interior of the mosque in Zaria, Nigeria.



salt-mud bricks were also used in Niger. Among the notable features are the decorated facades, which incorporate clay motifs or graffiti (Fig. 17). The former, mostly geometric and also showing Arabic influence, were in relief and are found generally above doorways, entrances and windows; corncob decorations are also found. The graffiti decorations were executed on a smooth wall while it was still damp, the patterns being formed by roughing up the interstices while the smooth parts were painted in chalk white or in colour. The motifs include incised figures, geometric and floral patterns. In some buildings the plastered walls, either external or internal, are painted with human and animal figures. Another decorative technique is the use of mosaics of inlaid stones and cowrie shells.

FIG. 15. Vault construction in the Sultan's Palace at Dosso, Niger.



European or Colonial architecture

This might be described, for lack of a better term, as externally influenced architecture which can be divided into two groups. The first is local with a discernable character in terms of materials, construction and decorative techniques, planning and design, but the development of which was influenced and enriched by foreign architectural elements and construction techniques. The best documented examples of this are some of the buildings erected by the Germans in Tanzania; these borrowed heavily from Swahili architecture.³ For example, the arched doorways, windows, arcades etc. of Boma buildings in Bagamoyo (Fig. 18) and Mikindani, and the Ocean Road Hospital in Dar es Salaam, are typical of Swahili coastal

³ Casson, W.T., 'Architectural Notes on Dar es Salaam', *Tanzania Notes and Records* No. 71, 1970, 181ff.; Linstrum, D., *The Conservation of Historic Towns and Monuments* (The Commonwealth Foundation, Occasional Paper XXXVIII), London 1976; Watson, T.N., *Conservation of Bagamoyo* (Serial No. FNR/CC/CH/79/190, Unesco Report), Paris 1979; 'Areas of Concern: Bagamoyo, Tanzania', *Monumentum* (1982), vol. 25, no. 1, 9ff.



FIG. 16. Secular buildings in Zaria, Nigeria.



FIG. 17. A decorated house facade in Kano, Nigeria.

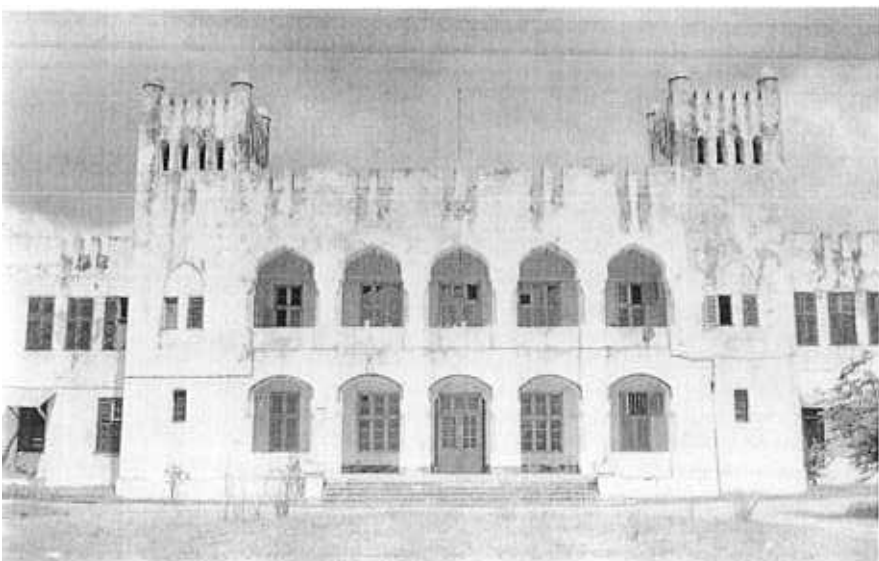


FIG. 18. The German Boma building, Bagamoyo, Tanzania.

buildings. However, the Germans introduced Teutonic and Classical elements, and the architects employed produced a sophisticated hybrid with considerable character, giving Tanzanian Colonial architecture of this period a unique quality. Foreign architectural elements may be found also in other buildings, such as the first Roman Catholic church in Bagamoyo (Fig. 19), which used local construction techniques but nevertheless possesses a French character.

The second group of buildings based on foreign styles (excluding the modern ones influenced by the International Style) are a wholesale importation, not only in terms of design (usually based on architectural forms current in the Colonial countries) but also in terms of materials and construction techniques. Such buildings would not be out of place in Europe, and they are unmistakably Gothic, Romanesque, Baroque etc. Generally found in urban areas, such buildings often relied on imported materials; for example, the bricks for the Portuguese forts in West Africa were imported from Portugal, and some prefabricated elements were used in the German buildings in Dar es Salaam.

In a second article, which will be published in the December issue of *Monumentum*, we shall be describing the present policies and legislation, and presenting proposals for the future.



FIG. 19. The first Roman Catholic church in Bagamoyo, Tanzania.

Résumé

L'accent est mis dans ces deux articles sur le patrimoine architectural de l'Afrique au sud du Sahara et se réfère tout particulièrement à la politique de conservation qui a été adoptée jusqu'à présent dans l'espoir d'assurer sa sauvegarde. Les obstacles qui s'opposent à l'application de cette politique par ceux qui en ont la charge sont également étudiés ainsi que ses insuffisances.

Dans le premier article, les points essentiels de la campagne de sauvegarde sont les suivants:

- i. Sélection, établissement d'une liste et d'une classification, préservation et présentation des monuments.
- ii. Reconstruction et assemblage d'exemples significatifs de l'architecture vernaculaire ou traditionnelle dans des musées populaires, de plein air ou de villages.
- iii. Protection et préservation des monuments sans les relier au processus général de développement et d'urbanisation.

Font partie du patrimoine:

- i. Les formes architecturales encore utilisées pour des bâtiments neufs ou non.
- ii. Les formes architecturales qui appartiennent à un

passé très récent et qui ont influencé une partie de l'architecture actuelle.

- iii. Les bâtiments à valeur historique et architecturale des zones urbaines.

Chacune de ces catégories est décrite plus en détails. A propos de l'architecture vernaculaire, l'auteur parle des matériaux de construction traditionnels—boue, bois et chaume—et des méthodes de construction des habitations traditionnelles circulaires ou rectangulaires. Il décrit ensuite les formes de l'architecture coloniale ou étrangère dans lesquelles se reconnaissent les formes locales consciemment modifiées par l'influence étrangère ou extérieure, par exemple dans l'architecture de boue swahilie ou soudanaise. Il insiste d'avantage sur cette dernière en étudiant les qualités des principaux matériaux utilisés—pierre de corail et bois de mangroves—ainsi que les formes particulières que ces matériaux imposent. Il examine aussi la décoration de ces constructions et leur rapport avec d'autres cultures. A propos de l'architecture de boue de la ceinture soudanaise, il attire l'attention sur la pénétration de l'Islam et sur l'influence de l'architecture islamique de l'Afrique du Nord qu'on peut retrouver dans les mosquées, ce qui n'a rien de surprenant, mais aussi dans les maisons d'habitation.

En dernier lieu, il décrit ce qui peut être appelé

l'architecture de l'époque coloniale qui reflète des influences extérieures mais qui utilise un plan, des matériaux, une construction et une décoration indigènes et dont le développement fut influencé et enrichi par des éléments étrangers; il pense en particulier aux bâtiments construits par les Allemands en Tanzanie, appelée alors Afrique Orientale Allemande. Restent les bâtiments qui ne doivent rien aux traditions locales ni dans leurs formes ni dans leurs matériaux ni dans leurs techniques de construction.

Dans le deuxième article il étudie la conservation de ces divers bâtiments et il donne une vue d'ensemble sur la situation actuelle dans les pays africains au sud du Sahara.

Resumen

El énfasis de este artículo y del que seguirá recae sobre el legado arquitectónico de África al sur del Sahara, especialmente con referencia a la política de conservación que se ha ido adoptando hasta la fecha como tentativa de protegerlo. Examinamos también las limitaciones e inconvenientes de dicha política, así como los problemas con que se han enfrentado los responsables de formularla y ponerla en práctica.

En este primer artículo, los objetivos principales hasta el momento se definen como:

- i. Selección, inclusión y catalogado, y conservación y presentación de monumentos.
- ii. Reconstrucción y reedificación de ejemplos representativos de arquitectura autóctona o tradicional en museos etnológicos, al aire libre o en pueblos.
- iii. Protección y conservación de monumentos independientemente de procesos generales de planificación y desarrollo urbano.

A continuación, el legado se define como consistente en:

- i. Formas arquitectónicas todavía edificadas y utilizadas.
- ii. Las que pertenecieron a un pasado reciente e influyeron en parte de la arquitectura en existencia.

- iii. Edificios de significado histórico y arquitectónico situados en zonas urbanas.

Cada una de estas categorías se describe entonces en mayor detalle. Al examinar la arquitectura autóctona, comentamos materiales tradicionales de construcción, barro, madera y barda, y los distintos métodos empleados en la construcción de los tipos circulares o rectangulares de viviendas tradicionales. Pasamos a continuación a las formas coloniales o extranjeras de arquitectura, en las cuales apuntamos que se hallan las formas locales con influencias reconocibles externas o extranjeras, y de las cuales son los mejores ejemplos la arquitectura de barro swahili y sudanesa. Nos concentramos en ésta, hablando de las cualidades de los materiales principales, cornalina y postes de mango, y de las características formas de construcción que resultan de su empleo. Hacemos referencia también a la decoración de tales construcciones y a las relaciones estilísticas con otras culturas. Al escribir acerca de la arquitectura de barro de la franja sudanesa. Llamamos la atención sobre la introducción del Islam y la influencia de la arquitectura islámica del norte de África, aparente en formas domésticas, así como en, como era de esperar, en las mezquitas.

Por último, describimos lo que puede definirse como arquitectura de la época colonial con influencias exteriores. Esta puede dividirse en lo que resulta local con características aparentes respecto a materiales, técnica constructora y decorativa, planificación y diseño, pero cuyo desarrollo se vio influido y enriquecido por elementos arquitectónicos y técnicas de construcción extranjeras. Llamamos especialmente la atención hacia los edificios levantados por los alemanes en Tanzania durante la época en que fue África Oriental Alemana. La segunda división de esta categoría es la de edificios basados en estilos extranjeros que fueron de importación total, no sólo por lo que se refiere al diseño, sino a los materiales y técnica.

El segundo artículo tratará de la conservación de este tipo de edificios y de la situación actual en países africanos del sur del Sahara.