An Introduction to
Indigenous African Architecture

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L’habitation africaine est plus qu’un fait géographique, davantage qu’un fait social. Elle constitue une remarquable manifestation religieuse. Elle est un phénomène total. La vie matérielle, familiale, sociale, spirituelle, des individus et des groupes s’y déroule dans le cadre d’un symbolisme présent à tous les moments de l’existence dans toutes les parties de la maison et jusque dans les détails les plus infimes. 1

Introduction

Until quite recently, the Western world accorded no place in its architectural schema to Africa—with the exception of Egypt. The subject of African architecture was, and indeed still is among many, not considered worthy of recognition. To be sure, the existence of “shelter” in Africa has been admitted by all—all human beings require some kind of shelter—but the studied neglect or denial of a discrete, viable architecture in Africa can be illustrated with innumerable references. Since the lacuna itself is most revealing for this introduction, some of the reasons for it merit our attention.

Several years ago, a leading American popular journal sent a team of photographers to Africa to document a feature article on the great epochs of African history with monumental architectural illustrations. Upon returning, their first comment was, “All we could find were a bunch of mud huts!” 2 The reaction they voiced was merely the echo of an attitude which prevailed a century ago when three prominent explorer-travellers, each reporting his experiences and impressions from different parts of West Africa, all used an identical drawing to illustrate indigenous housing. 3 Thus, although the reality in the three regions was vastly different, the reportage reflected the European mental image of the times: all were identical.

Equally expressive of this general attitude (although perhaps more directly stated) is the initial response by students to a course in African architecture: “I didn’t know there was any!” The student response unfortunately is not unique. It reflects the thinking which prevailed until quite recently in the academic world expressed in articles by such respected scholars as Julius Gluck and E. A. Guitkind. 4 African architecture has been characterized as “primeval,” as “urban—architecture—architektur—an architecture devoid of “sacrality” —meriting only a description of building technology and techniques. African architecture, it has been suggested, lacks “a feeling of space as we understand it,” and “Africans have never made an attempt to use space itself as a building material.” Even the most sophisticated ethnographic surveys of the cultures of Africa often failed to transcend “material culture” in their descriptions of the forms and structures of buildings. 5 The traditional approach which explains or


Fig. 1. A recently constructed Bozo saho or boys' age-set house at Kolenze, Mali (photo: author).
defines African architecture in terms of the primitive or in terms of building technology per se also leads logically to a limited perspective which can only speak of shelter. That this attitude still prevails is evident from a recent collection of essays entitled Shelter in Africa.

These approaches have severely restricted the development of a true understanding of the African architectural phenomenon. They account, in great measure, for the failure of the Western world to admit its very existence. But more than mere oversight and ignorance, they are the progeny of a marriage between conceptual fallacy and Western ethno- and egocentrism. Traditionally, the Western world circumscribed architecture in terms of permanent, monumental, public structures which could be documented in time and space. Courses in architectural history were (and still are) divided by subject matter into a chronology which began with the written word. Preliterate or nonliterate societies were, until recently, not considered respectable residents on the typological plateau of "civilization" established by Western thought, because the written word was used as a critical measure. During the second half of the nineteenth century the Western world, inspired by Darwinian theories of evolution, engaged in numerous attempts to establish an evolutionary model for the range of disciplines which comprise world knowledge. The various efforts to classify the races and cultures of mankind and its achievements into an evolutionary model were paralleled by typologies which classified architectural efforts into an evolutionary sequence. Viollet le Duc's The Habitation of Man Through the Ages and the Paris Exposition Universelle of 1889 became the models for Sir Banister Fletcher's "Tree of Architecture" and Bemis and Burchard's The Evolving House.

The study of the visual arts in the Western world has traditionally been divided into sculpture, drawing, painting, and architecture. Consequently, when the arts of Africa began to attract world attention at the turn of the century, not only was the architecture of Africa further divorced from the other visual arts, but it was in turn robbed of its meaningful elements. The feverishly increasing pace of colonial expansion in West Africa coincided with a search for new forms of expression in the art world. It was hardly coincidence that the fauvist movement which initiated twentieth-century Primitivism was born in France, since at the turn of the century France was more actively involved in African colonization than any other Western nation, and by 1900 she was in control of the major sculpture-producing regions of the African continent. Increasing numbers of "artifacts" and curios pilfered and pillaged during the decades of colonial expansion appeared in European museums and bistros, inspiring Picasso, Modigliani, and others. But, while one might carry off sculpture and decorative art for display to the Western world, architectural elements are more difficult to transport. Early in the nineteenth century, the museum-piece collecting, archaeological mania, focussing on the classical world, successfully carried off such segments. Despite their weight, Egyptian obelisks, Greek architraves, and Roman columns, severed from their sites, could be transported. In an architecture composed primarily of vegetal or earthen materials, as was the case in Africa, only wooden elements were removable: carved wooden columns, plaques in wood or metal, decorative roof pinnacles, doors, doorposts, doorframes, and locks, all architectural components, were removed from their contextual surroundings and reclassified as sculpture.

The absence of transportation facilities on the African continent further contributed to misinformation and misinterpretation. Although wooden, metal, terra-cotta, and even stone elements might be carried down from the inland savannahs to the Guinea Coast and shipped by boat to Europe, their size was limited to what could be carried by man since transport, until well into this century, still depended upon human portage. In fact, until the turn of the century, few Europeans had even penetrated beyond the coastal rain forests. The European image of West African architecture was thus heavily conditioned by observation of only a narrow strip of tropical coastline. The savannah city exotic societies, presumably affording a contrasting diorama to the glorious achievements of Western civilization and technology which the Eiffel Tower symbolized.

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6. Paul Oliver, ed., Shelter in Africa (New York, 1971), is a collection of essays on the architecture of various African peoples. The irony of the term "shelter" is most striking on the dust jacket of the book, where the title is superimposed on a color photograph of one of the most spectacular examples of West African architecture: the intricate arabesque bas-relief façades bursting with symbol and meaning on Hausa building façades in northern Nigeria.

7. Eugene E. Viollet le Duc, The Habitation of Man in All Ages, trans. by Benjamin Buckall (Boston, 1876); Sir Banister Fletcher, A History of Architecture on the Comparative Method, 14th ed. (New York, 1948), p. iii; A. F. Bemis and John Burchard, The Evolving House, 3 vols. (Cambridge, 1933). Fletcher's classic text on architectural history on which every aspiring architect of the first half of the twentieth century was weaned, condescendingly accorded three pages in a thousand to the whole field of vernacular architecture, and hardly many more to the entire non-Western, nonclassical world.

The Exposition Universelle of 1889, while better known for its Tour Eiffel, also boasted a large-scale exhibition on the bank of the Seine River, entitled "The Evolution of Architecture and Habitation." Its subject matter included examples of the "primitive" level of earlier stages in evolution from the newly colonized, far-flung...
of Djenné in Mali for instance, a mediaeval entrepôt on one of the tributaries to the Niger River equal in import to Timbucktu, was not accurately located on a European map until 1893 when the French conquered the city. When earlier explorers such as René Caillié, Heinrich Barth, and Anne Raffenel did traverse the interior, their interpretive drawings and renderings could only convey egocentric impressions, since photography as an accurate reporting tool was still in its infancy, and the use of photographs in publication was a late nineteenth-century development.9

In the early twentieth century, interest in African arts went hand in hand with the European art world’s search for a new theory and new forms of artistic expression. The increasing interest in African architecture today can also be explained in part by a revolution in architectural theory and the current reevaluation of concepts and definitions for the discipline. In contrast to the traditional classical stance which severely restricted the field to singular, monumental edifices, recent architectural thinking has begun to reflect the broader frame of man-built environments generated by current concern with the total spectrum of man’s relationship to the world around him. The essence of recent interpretations, pioneered by architectural critics, historians, and practitioners such as Allsop, Rudofsky, Rapoport, Alexander, Jencks, Baird, and Norberg-Schulz, rests on the basic assumption that architecture includes the total man-built environment and its quality derives from “man’s identifying himself with what he builds, using it as a means of self-expression...”10

By considering a universal frame in which man’s de-limitation and enclosure of space not only defines his physical needs but justifies his raison d’être as well, then all aspects of the man-built environment may be viewed in the context of aesthetic expression and the boundaries of architectural definition can be extended and redefined. Such an approach permits us to view the African materials in true and accurate perspective, to accord them a recognized place in the universal framework, and to discard the narrow, denigrating boundaries which previous typologies have imposed upon us.11 Indeed, it is no coincidence that the authors cited above, almost without exception, have illustrated their theoretical position not only with examples from the field of vernacular architecture in general, but from the African world in particular.

An understanding of African architecture requires specific examination of the physical, technological, socio-cultural, and politico-economic environments which constitute concrete reality. But it is also essential that one consider the process whereby man, as a thinking, symbol-making animal, abstracts those realities into a meaningful and ultimately religious or symbolic schemata of architectural philosophy. Phrased another way, the physical environment provides the raw material of concrete space, the technological environment provides man with the tool kit to manipulate available material resources, and the socio-cultural, politico-economic environments provide the framework for restructuring the natural environment into a man-made one. The distinction between shelter and architecture rests precisely on differentiating between real, concrete space and philosophic, existential space. Ultimately, it is the changing pattern of their interrelationship over time which constitutes the fabric of architectural history.

The Concrete Environment

Sub-Saharan Africa encompasses the widest diversity and range of physical settings. By extension, the architectural forms created on its landscape are equally diverse and complex. Imagine for the moment a longitudinal axis following the Greenwich meridian from Accra, Ghana, through Timbucktu, Mali, in West Africa. The trace would cut across a series of horizontal climatic belts: humid rain forest near the coast, a derived woodland savannah inland gradually becoming a grassland savannah and finally turning into a semiarid desert (Fig. 2).

The climate of the humid coastal rain forest belt, where there is little temperature change between day and night or even between wet and dry seasons, calls for a shelter with a maximum of cross ventilation to ensure bodily comfort. To achieve such a design, the indigenous coastal builder will strive to incorporate some variant of louvered or natural openings into the house he builds (Figs. 3–4). Bamboo walls simulating openwork screens are designed


11. It is important to distinguish the question at issue from building technology per se as well as from technological resources available in structuring the environment, both of which do follow an evolutionary development.
to encourage air circulation. Floors are often raised high off the ground on platforms to catch the ocean breezes. The traditional rectangular building form found in the rain forest is, by virtue of its easy adaptation to a cardinal orientation, more suited for the exploitation of cross breezes. Early British and French colonial settlers and administrators, recognizing the merit of indigenous solutions to climatic comfort, emulated them by raising their expatriate mansions high above the ground and by developing a wall system composed of louvered doors and screened verandahs. Many examples can still be seen in Abidjan, Accra, Lagos, and Dakar.

The inland savannah climate by contrast is composed of a brief annual rainy season and a long, dry season during which the dessicating desert harmattan winds blow down from the Sahara. The daily temperature change may be as high as 30 to 35° Fahrenheit. Savannah climates require a solution which can cut the cold and biting winds and at the same time provide a cool respite from the intense heat of the midday sun. The earthen roundhouse with its insulating walls can accumulate and store the heat of the day for evening comfort (Fig. 5). The circular form, in contrast to the rectangular, helps to concentrate thermal radiation in a central, enclosed, interior space. Rather than strive for maximum ventilation, the savannah builder will shun window openings and limit the single door opening to the smallest possible dimension so that the thermal properties offered by the thick earthen walls will be maximized.
Fig. 5. A Tallensi compound at Tongo in the savannah of northern Ghana (photo: author).

The same climatic diversity also generates differences in light intensity. The tropical forest cover acts as a light filter, subduing the brilliant rays of the sun, filtering them into a play of deep shadows so that the sharp corners of rectangular forms are less disturbing to the eye. The majestic, towering forest growth, emerging from the lush tropical undergrowth, also modifies the heat. On the other hand, the absence of dense stands of timber and forest vegetation in the savannah permits a more intense sunlight. The intensity is further accentuated by the sand crystals suspended in the atmosphere during the dry season and by the barren, reflective surfaces of the landscape. The softly rounded, curvilinear surfaces and rough textures of earthen walls typical of savannah architecture eliminate the harsh, irritating contrast between light and dark created by perpendicular intersecting planes, and convert it to softly graded shade and shadow.

Climate conditions the growth of vegetation—the natural resources of building materials. Along the coastal belt of rain forest the availability of palm and bamboo dictates the rectangular, carpentered building forms. Trees grow straight and tall, lending their branches to easy alignment and to forms composed of straight vertical and horizontal elements. Such is the case along the Guinea Coast of West Africa, among the Fanti, Ewe, Mende, Adja, Fon, and Wolof peoples.12

Earthen walls, when they are used in the humid tropics, require an armature; otherwise, heavy rains and perennial humidity would wash them away. Consequently, in the transitional belt between forest and savannah, the traditional building wall is made of wattle and daub. The vertical wattles of bamboo or palm frond, tied horizontally, are packed with an earthen daub. Such is the case for traditional Ashanti, Baule, Ibo, Urhobo, and Yoruba housing.

As one moves out of the rain forest into the woodland savannah, tree growth is stunted and irregular. Agricultural practices of “slash and burn” further deform and gnarl the trunks. Building timbers are unsuited to rectangular building forms and as one moves further north, timber becomes scarcer. Not only is earthen construction

12. While it is true that the peoples along the Guinea Coast of West Africa were in contact with Europeans and European building practices for many centuries, and their architecture may have been influenced by European geometry, it seems more plausible to suggest that their rectangular, carpentered forms were dictated by the available vegetal materials. Consequently, it was easier for them to incorporate European spatial configurations into an already existing template. European contact merely served to enlarge their architectural repertoire.
more suited to the demands of climate, but the dryer climate itself permits the use of earthen materials without supporting structural reinforcement. Curvilinear earthen walls are then capped with either flat, trodden earth terraces or with thatch bonnets to become the ubiquitous solution to the sedentary agriculturalist’s savannah domicile. The rectangular, carpentered, rain forest prototype is replaced by an earthen, curvilinear, savannah roundhouse prototype, found equally among the Malinke, Gurunsi, Mossi, Dogomba, Somba, Hausa, and Musgu peoples (Fig. 6).  

In the northern reaches of the savannah grassland, the stunted tree growth is gradually replaced by acacia brush with its thorny mesh and short, spindly branches. The acacia cannot be adapted to a structural frame, unless it is gathered into bundles or fases and used as ribbing for the nomadic tents which the Fulani, the Songhai, and the Tuareg utilize in their transhumance. Finally, in the Sahara desert, the mobile architecture of truly nomadic peoples, such as the Tuareg, is composed of woven textiles and leather. Such tensile structures reduce, to an absolute minimum, the number of timber struts and poles required for shelter and structural stability (Fig. 7).

Geologic formations have also contributed to structuring African architectural form. The clayey, lateritic soils of the rain forest and woodland savannah gradually give way, in the north, to a Saharan sandcover. Clayey soils are the material par excellence not only for pottery, but for the earthen banco construction of the savannah roundhouse. On the other hand, sandy soils lack cohesiveness, and the

13. Eduard F. Sekler, “Structure, Construction, Tectonics,” in Structure in Art and in Science, ed. Gyorgy Kepes (New York, 1965), p. 94, has suggested that the eggshell-like conical houses of the Musgu people in northern Cameroon represent “an almost perfect realization of a structural principle in terms of a most appropriate and efficient construction while at the same time, a clearly related unequivocal tectonic expression.”

Fig. 6. Musgu housing in the northern Cameroon (from J.-P. Beguin et al., L’habitat au Cameroun [Paris, 1952]). The elaborate built-up entrance is an expression of both structural requisite and spatial cognition.

Fig. 7. Tent structures. A: Songhai mat tent (after G. Braseur, Les Etablissements humains au Mali [Dakar, 1968]); B: Fulani mat tent (from a photograph in the Musée de l’Homme, Paris); C: Tuareg skin tent (after J. Nicolaisen, Ecology and Culture of the Pastoral Tuareg [Copenhagen, 1963]).
further north one travels, the deeper one must dig below the surface sands to find a soil of adequate consistency. Again further north, the natural adhesive and hardening agents, such as cow dung and vegetal juices, also become scarcer. Granitic outcroppings, oxidized laterites, and limestones gradually replace the clayey earth as a preferential building material in some areas. Not only were the mediæval urban centers of West Africa, the ancient entrepôts of trans-Saharan trade, and the seats of the ruling dynasties in the great African empires built of stone, but so is the currently inhabited Dogon housing nestled against the granitic escarpment of Bandiagara, Mali (Fig. 8).

One of the difficulties in building with stone is that the tool kit available to the builder in regions where building stone abounds is not adequate for dressing the stone, i.e., for trimming and cutting it into regular building blocks. Therefore, the stone can only be laid as a rubble masonry, depending upon a heavy bed of earthen mortar to take up the rough, random faces. Such is also the case with the oxidized laterites and granites. The coursed, “squared stone” construction found in the ancient capitals and trade centers such as Koumbi Saleh, Tegdaoust, Walata, Tichit in Mauretanin, and even Timbuctoo was made possible by the locally available, stratified sandstone which, easily split, left even, flat surfaces for regular ashlar coursework (Fig. 9).

Finally, even the geography itself will have an influence on both the materials of construction and the forms derived from them. Peoples living close to the riverine systems such as the Konkomba and the Sorko (Bozo) who have settled along the banks of the Niger, the Oti, the Volta, and the Bani rivers utilize the shells and fishbones as a hardening agent in their earthen mortars. The river shells are ground into a limelike substance and mixed with earth lending not only a concretelike hard and impervious surface to their earthen walls but providing a smooth, fluid surface for easier wall and surface decoration.

The different physical environments demarcated by these horizontal belts also account, in measure, for the range of economic pursuits practiced by their inhabitants, pursuits which in turn influence, even dictate, particular architectural forms. For example, in the rain forest, the subsistence crops are tubers: cassava or manioc and yams. Tuber crops do not require either annual storage or storage facilities in the form of a container; they can be stacked. In the savannah, however, the agricultural staples are cereals: maize and millets. Long-term storage which will house and preserve the annual crops from one harvest to the next is essential to life. Hence, the earthen granary, characteristic of savannah architecture, is rarely encountered, if ever, in the humid tropics. Indeed, the care and expertise called upon for its construction transcends that of almost any other traditional architectural form (Fig. 10).

In contrast to the sedentary agricultural pattern generated by the savannah, the semidesert of the sub-Saharan belt provides ideally suited grazing lands for pastoral activities, in part dictating the presence and function of various mobile architectures, such as those of the Fulani, the Songhai, and the Tuareg. Their materials of construction reflect the paucity of vegetation. The leather skins, the woven grass and fiber mats, and the large textiles used to construct the tents are designed for easy portability. Compactly and portability are critical, and the importance of singular structural members, both poles and skins, is expressed by the lavish care which attends their creation (Fig. 11).  


15. Jean Gabus, Au Sahara (Neuchâtel, 1959), illustrates the detailed carving of wooden tent supports and discusses the symbolic meaning of the designs woven into the tent mats and embroidered

Fig. 8. Dogon stone construction at Sanga, Mali (photo: author).

Fig. 9. Stone construction at Tichit, Mauretanin (from Dj. Jacques-Meunié, Cités anciennes de Mauretanie [Paris, 1961]).
Fig. 10. Basket granaries inside a Bambara compound near Djenne, Mali (photo: author).

Fig. 11. Interior of a traditional tent built by the Wogo, a Songhai related people, at the Musée du Niger, Niamey (courtesy: Musée du Niger).
It has been suggested that an African residence is no more than the physical projection in space of the social organization of the family which inhabits it. By extension, the location of family compounds and homesteads on the landscape, forming nucleated or dispersed settlements as well as urban centers, is itself a sociogram of the kinship groups which have established their territoriality on the terrain. The plan of a West African compound will reveal to the careful observer not only the size of the occupant group as a whole, but the precise hierarchical and jurisdictional relationships which exist among its members, male and female, young and old. The distribution of cooking spaces will reveal the relationships between wife (wives) and husband, between children and parents, defining areas of responsibility and territoriality as well as ownership of or jurisdiction over crops and livestock. The disposition of room units will reflect not only the relationships between residents but their relationship as a whole to the extended homestead which they farm (Fig. 12).

The compound residence is also unique in its kinetic quality, reflecting the changing relationships which the domestic cycle of family life undergoes during its lifespan. As the viable family grows with the acquisition of spouses and offspring, the compound expands by the addition of new, enclosed, or clearly demarcated extensions in space. Nonpermanent building materials are particularly well suited to accommodate such change over time. Eventually, as members of the extended family unit leave, die, or establish new economic and/or social ties elsewhere, these changes are again easily accommodated by physical alteration. Room units will be abandoned, left to crumble back to earth; the personal spaces will realign themselves to accommodate the changing human relationships.

The physical and social environments which have been considered above in turn structure the prevailing systems of building technology. The technological environment is itself conditioned by the “available tool kit.” It is their tool kit which enables people to utilize the available natural resources. As has been suggested elsewhere in reference to Roman architecture, technology can also become the hand-maiden to new architectural imageries. Building technologies therefore, in combination with building materials, are directly related to the creation of architectural forms. Under building technology, one ought to consider not only the tools themselves but the specialization of skills, the division of labor, and distinctions between individual and communal building processes. Their relationship to each other is critical to an understanding of the development of African architecture.

The building process in sub-Saharan rural Africa is a communal process. The construction of a new domicile or compound involves not only the owner but members of his extended family as well as the community at large. But the owner is the master builder only for his own compound; the building skills are in the hands of all participants, so that the owner of each new compound will in turn be his own architect. In the savannah, for example, the earth is brought by the men and boys from the adjacent borrow-pits; water is carried by the women for mixing the earth into proper workable consistency; and kneaded mud is then formed into spherical, conical, or cylindrical balls and handed up to the owner—the "architect-mason"—who sets them, coil fashion, in place. The prescribed division of labor between men and women is not mere chance, but reflects the more basic division of labor which characterizes many rural African societies. Jurisdiction over the

Fig. 12. Plan of a Konkomba compound, northern Ghana (after L. Prussin, Architecture in Northern Ghana [Berkeley and Los Angeles, 1969]). The shaded areas indicate the territorial jurisdiction of each of the four wives, and the alphabetical sequence indicates the growth of the residential complex in space and time.


The structural strength of a round drumlike form derives from the continuity of its circular wall. Consequently, there are few openings, for structural as well as climatic reasons. Again, windows are nonexistent and the small round or oval doorways are cut into the wall after it has been erected, because otherwise the wall would collapse. The flat, earthen terrace-roofs built by the Kassena, Talensi, Lobi, Gurunsi, Somba, and other Voltaic-speaking peoples serve to further strengthen the wall system. However, the flat, earthen roofs are possible only in areas where strong timbers, needed to carry the heavier, earthen roof load, are easily obtained.18 The more common solution is a conical thatch roof which utilizes the grasslands vegetation and requires fewer, lighter members.

Although banco construction continues to be the norm for rural housing in the savannah, it is often used concurrently with an earthen brick, cast in a rectangular mold and dried in the sun. The cast, sun-dried brick has replaced both banco construction as well as spherical handmolded bricks in the traditional West African urban centers such as Segou, Djenné, Timbuktu, and Gao. As a basic building unit, the spherical brick dictates a curved wall: it is technically impossible and conceptually illogical to create a rectangular building form with spherical brick units. On the other hand, the introduction of a cast, carpentered brick leads to an entirely new spatial concept: cubism. Whereas the rectangular building forms of the rain forest might very well have resulted from or been dictated by vegetal materials, the rectangular buildings which appeared with increasing frequency in the savannah urban centers resulted from the introduction and diffusion of a new form of building block from Islamized North Africa, via the centuries-old trans-Saharan trade (Fig. 13). It is no coincidence that it is precisely in those urban centers created by the trade that the carpentered brick is the norm.19

Although the cast earthen brick is becoming increasingly more common, it remains a sun-dried brick. Very rarely does one find kiln-dried bricks in West Africa: their use was and continues to be limited to the urban milieu.20 The absence of kiln-dried bricks can perhaps be accounted for by limited environmental resources, the nature of the specialization of labor in rural Africa and the absence of any need for concrete permanence. To fire an earthen brick requires an abundant fuel supply, but as has already been suggested, fuel is in scarce supply precisely in those areas where earth is the primary building material. The limited fuel supply is more critical for the blacksmith’s smelter than for housebuilding which by its very nature makes no demands for longevity beyond the normal lifespan of the house residents. The single major advantage of kiln-dried bricks is their permanence.

In those instances where bricks and other, secondary building elements are kiln-dried, they are made and fired by the women potters, who in turn are also the wives of the

18. Flat terraced roofs not only create problems of roof drainage but necessitate a system of parapet walls. Among some peoples, the flat roof carries meaning above and beyond that of function, and is socially prescribed for particular members of the extended family.


Precise building prescriptions for the rectangularity of structures are set forth in Khalil ben Ihsaq, *Muhktasar*, a set of Malekite commentaries on the Koran. Malekite law prevails in all of West Africa.

20. It should be noted that the absence of kiln-dried bricks is in sharp contrast to the abundance of terra-cotta pottery and sculpture which archeological investigation has begun to uncover in Africa. The only area which has so far revealed a concentrated use of kiln-dried brick is the Chad region, the site of a number of urban concentrations developed by the Kanem-Bornou empire. J.-P. Lebeuf, *Archéologie Tchadienne* (Paris, 1962).
blacksmiths. Again, just as it is the women who carry the water needed in yar bundi construction, their socially assigned responsibility for domestic fuel collection accounts in some measure for their specialized role in pottery making—and by extension, the firing of bricks. The domestic foundation of this labor specialization persisted so strongly that, despite numerous attempts by the French to introduce and encourage the use of brick kilns in order to obtain a more durable building unit, they were unsuccessful in almost all instances. The French-introduced brick kilns apparently threatened the balance of the traditional division of labor. Furthermore, they were associated in peoples’ minds with either the blacksmith’s smelter or the potter’s kiln, both symbols of a tightly structured, supranaturally endowed caste system. In the eyes of the prevailing, indigenous social order, permanence was far less critical than potential social disruption. On the other hand, the newly emergent urban society, which also carried within itself the seeds of a specialized building skill, was able to integrate the new technology into its system without disruptive consequences.

The division of labor and the traditional patrilineal, exogamous family structure which prevails in much of sub-Saharan sedentary agricultural life has further ramifications for the creation of architectural forms. In patrilineal societies, not only do the men build communally, but it is also they who exercise jurisdictional rights over the residence, rights validated through genealogical and ancestral ties. Construction expertise is transmitted socially along the male lineages. Alternatively, it is the women, both those who marry into the community and those who eventually leave it upon marriage, who individually apply the finish to walls, and then the surface design. Again, this division is an extension of their domestic responsibility. As a consequence, although traditions of building construction tend to be conservative and change very slowly, the decorative surface elements of the architecture are more sensitive to changing imageries, because the women are involved in more frequent and diverse social interaction resulting from exogamous marriage patterns.

In contrast to the sedentary savannah peoples, the norm among a number of nomadic peoples such as the Songhai-Dyerma, the Fulani, and the Tuareg is a matrilineal society. Once again ownership of, and control over, the domicile dictates the shape as well as the rate of change in the architectural imagery of it. The tent is owned by the matriarch of the family unit. Although the men will install the post(s) which establishes the center point of the tent, the women not only weave the mats and textiles which make up the tent “walls,” but it is they who also erect the tent structures. In some instances, such as among the Wogo, a Dyerma-related people in Niger, where a sedentary life-style has gradually begun to replace the traditional nomadism, the tent itself is literally encased in earthen walls erected by the men of the community. A transfer of ownership occurs, so that while the tent itself, in the form of a canopy bed, continues to belong to the wife, the stationary earthen shell is the husband's property.

The gradual specialization of skills and the increasing division of labor which occurs in the process of urbanization find concrete expression in the use of specialized building tools. The indigenous rural builder makes use of the same tool for both his daily agricultural activities and housebuilding. The same adze is used to ridge and furrow his fields and to break up the clods of earth used in constructing his house. The same clay pots used to carry and store water for cooking are used to carry water needed to mix the clayey mortar. The hands are the tools which form and shape the spherical, conical, or cylindrical building blocks. But in those instances where an acknowledged group or caste of builders practice their métier, such as the bari of the Inland Niger Delta or the maduga of northern Nigeria, one also finds special tools used only in building construction. The yar bundi, the baramin, and the sasire are the mason’s hallmark. These specialized tools, travelling hand in hand with a discrete building skill, are components of a newly emergent technological environment. The cast, carpentered brick referred to above, for instance, depends upon both new tools and new skills. Rectangular earthen construction, in turn harbinger of a new architectural imagery, could not have developed without the carpentered, rectangular brick (Figs. 1 and 14).

The discussion so far has focussed on what are essentially elements of concrete, measurable reality in space and time. Although the focus of our attention has been West Africa, the West African reality is representative of much of the continent. In order to understand the architecture of Africa, however, it is also necessary to consider some of the philo-

21. In cities of the Inland Niger Delta, such as Goundham and Djenné, the women potters make and fire small paving bricks, water spouts, and clay pipes as well as the large clay pots used to line wells and water closets.

22. Ernst Fischer, The Necessity of Art (Baltimore, 1963), p. 153, has suggested that “forms which evolve from collective work processes—forms which are social experience solidified—tend to be extremely conservative.”

sophic aspects of space, aspects which, by investing the concrete, physical reality with meaning transform it into a meta-language, whose symbols communicate to user and viewer alike.

Existence

Since time immemorial, man has thought of the world as being centralized. Legends and myths of origin throughout the world attest to a belief in the "center" as a point of birth, a point of origin.24 The center takes on a sacred quality; it is an ideal. To reach the center is to become initiated, to achieve a consecration. The center is the point from which man acquires his position as a thinking being in space. The belief, equally widespread in Africa, is often expressed concretely as a tree or pillar symbolizing a vertical world axis.

Among the peoples who inhabit the Cross River area between southeastern Nigeria and the southern Cameroon, the center of the internal courtyard of the family domicile was marked by a pair of carved wooden pillars, obaschi, chained to each other, symbolizing the primordial union which marked the beginning of the world. The communal meeting house or egbo often had a carved post or ekwom

resting on a mud base located in the center of the space. This house was always built first when the village was settled, and the carved post was used as a point of reference to lay out the length of the village. Direction was established from the center (Fig. 15).²⁵

According to Marcel Griaule, the Dogon in Mali structure their territorial organization in accordance with the cosmologic principle that the world developed in the form of a spiral, emanating from a center formed by three ritual fields which were assigned to three mythical ancestors. The Dogon village, itself a symbol of man, sits in the center of the spiral and is considered as an anthropomorphic entity.²⁶ The plan of the compound is itself a representation of man, each of its architectural components representing elements of the human body. The architectural form of the Dogon granary is believed to embody the concrete ordering of the world: it serves as a model for the definition of geometric volume, representing the realization of an ideal.²⁷ Since the sustenance and continuity of life depend upon the successful construction of a granary, it is imbued with meaning of the highest order.

Among the Tallensi as well as the Tayaba, the granary is located in a man’s compound, the center of his universe.²⁸ Internal walls radiate like the spokes of a wheel from its central, fulcrumlike position in space, demarcating the sacred male domain from the profane, women’s subcompounds. The granary, giver of life and fertility, guarantor of continuity, is itself imbued with a life force by means of sacrifices and libation ceremonies. In this same context, a number of peoples, such as the Fali in the northern Camer-

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oon and the Lobi in the northern Ivory Coast, actually represent the granary anthropomorphically with feminine attributes. Within the pregnant female "body" a smaller clay pot, symbolizing the unborn child, is placed to house the seminal seed for the next year’s planting (Fig. 16).

Islam, which over many centuries has slowly permeated indigenous African thought, also embodies the concept of center as an ideal. The Sacred House or ka’aba at Mecca is seen by Muslims as a place of origin, as the center of the universe, and it is the ultimate goal of every devout believer to make the pilgrimage to Mecca, the hajj, during his lifetime. A devout Muslim should always face Mecca when he performs his daily prayers and the quibla wall of every mosque, in which the mihrab (wall niche) is located, must be oriented toward Mecca (Fig. 17).

For many African peoples, the center of the universe is the Earth itself, in which their ancestors reside and from which their ancestors came. Thus, among the Tallensi there are no myths of migration from elsewhere. Among the Bobo as well as the Bambara, there are numerous semisubterranean shrines and cult houses which are attributed to the ancestry, reinforcing a belief that man emerged from a "hole" in the ground. Finally, it is the ardent desire of every man to ultimately return to his place of birth and origin, the abode of his ancestors, i.e., his "center." That return validates his existence, since the Earth is sacred.

The concept of the Earth’s sacred quality is particularly relevant for the savannah, where the Earth itself is the primary building material. Those who handle it are considered in a particular light, and are endowed with special magical powers. Such is the case not only for the blacksmiths and their wives the potters, but for the builders as well. In many instances, the special skill of erecting an earthen wall is interpreted as a gift from supernatural forces. Traditionally, masons were not specialists by virtue of their empirical expertise, but by virtue of special powers granted to them by the deities of the Earth and their ancestors. In order to guarantee the success of the building process, a number of propitiatory rites must be addressed to them. "A Lobi, before he may construct a house, goes to a diviner to call upon his Ancestors..." Only if the augur mediates a favorable response will the owner proceed with his plans for new construction. Then the owner "takes a chicken, goes with it as an offering to the 'mason' and says to him: I have come to ask you to go to build my house. And the mason responds: If God wishes it, if my ancestors wish it, you will see me." The mason referred to above is not a mason by trade, but a farmer. Because of his specially endowed power of magic, however, he is considered to possess a special skill in building.

Just as the early development of the arts was itself enveloped in magic and ritual, so was the beginning of a specialized building skill. With urbanization and the evolution of a special caste of builders, the belief in the particular occult powers noted above persisted. Charles Monteil, in his 1903 description of the masons or bari at Djenné, Mali, made particular reference to the belief in that supernatural power held by both the bari themselves and the community at large. As recently as 1971, Sekou Bokari, the master mason at Goundham, Mali, related the following tradition:

Once when I was small, I saw a wall which was starting to fall down. The owner of the wall went to my grandfather, the mason, to ask him what to do. My grandfather came to look at the wall and pointing to it, instructed it to remain standing. So it did. The next day, the owner came again to seek help, and my grandfather asked: Why did you come? As long as I have instructed the wall to stand, it will remain standing. And so it did.

Belief in the existence of a "center" as a sacred place implies boundaries, distinguishing what is sacred from what is profane, what is known and ordered from what is unknown and chaos. The corollary to the center is a circumference which defines, by means of walls, the boundaries and enclosure of a known domain. Walls become architecture where the contiguity occurs. The walls of houses, the walls around villages and cities, even national borders designated by benchmarks and milestones, define domains at various levels of existence. Just as the mediaeval walls of a European city defined the familiar from the unfamiliar, providing psychic as well as physical security, so the compound or village walls of an African community, despite the fact that they may be built of nonpermanent materials, communicate the boundaries of a domain.

The Dida people who live in the rain forest of the southern Ivory Coast used to build their wattle and daub compound walls in a true circle. Along the inner radii of the inscribed circle, they projected the individual room units of

35. Author's fieldnotes, February 1971. The intimate relationship between the Earth and those who manipulate it undoubtedly also explains the fact that frequently gravemaker and mason are one and the same person. Both the Earth and the ancestors buried in it are sacred.
Fig. 17. The *quibla* wall of the Great Mosque at Djenné, built in 1907 (photo: Marli Shamir). The *mihrab* is expressed by the central tower.
enclosed, habitable space. When the French came, they were encouraged to abandon their circular compounds and to substitute instead discrete, rectangular units. The need to define and enclose the internal space persisted, however, and the newly built rectangular units, grouped around the internal courtyard, were linked together with curved walls of matting.

Among the savannah peoples, this definition of space is still more evident. Even in instances where room units do not form the wall itself, they are linked to one another by either an earthen or a mat wall system. Examples can be cited from the peoples of northern Ghana, the Mossi of Upper Volta, the Somba of northern Dahomey, and the Malinke throughout Mali. It was often been suggested that the walls are built as protection against marauders, both men and beasts. While this may be true in some instances, it is equally common for such walls to be seen in the light of psychological and spiritual protection. For example, when the Dogon relate their myth of the origin of architecture, they refer to the great “teeth” which were placed for protection around their dwellings, in imitation of the termites. These teeth, in reality the conical earthen pillars which mark ancestral presence, provide not physical but spiritual protection to the Dogon compound.

If, as has been suggested, the walls define the known from the unknown and are therefore an architectural event, the surfaces of such walls would be assigned particularly important meaning. Such walls communicate meaning to the observer, and thus the extensive surface patterns found


on so many savannah compounds and residences, both in rural and urban centers, can be easily explained. Perhaps the examples most striking to the Western observer are rapidly disappearing surface designs on Ashanti shrines (abosomfie) and palaces in Ghana, or the intricate bas-relief arabesque on the walls of Zaria, Bauchi, and Kano in northern Nigeria (Fig. 18). Among the Kassena, the entire surface of the exterior circumference compound wall is covered by a striking bold black-and-white geometry. Among the Bamileke, major dwelling units such as those of chiefs and age-set groups are surrounded by a ring of carved wooden pillars, pillars whose subject matter derives from their totemic pantheon. These pillars serve no structural purpose today, although the framing of a Bamileke house suggests that at one time they may have. Obviously, their present function is symbolic protection.

Any enclosed space, whether physical or conceptual, requires an opening: the corollary to the meaningful spatial definition of an "enclosed" space is an entrance into it. The entrance is the mediator; it marks the point where man makes the transition between exterior and interior, between the unknown and the known. A classical example from the Western world is the Roman gateway to the city whose lintel was crowned by a representation of the two-faced god Janus. As the god of entrance into a new division of time and space, he was also the god of all going out and coming in, and his image occurred at all points of mediation between the past which was known and the new, yet unknown future. Throughout West Africa, all rites and rituals relating to change or transition in man's existence occur at the entrance. "Outdooring" or naming ceremonies announcing the birth of a child, hence its entry into life, are performed at the entrance to the compound. Funerary rites take place at the compound entrance and strangers are received in the antechamber located at the entrance to the compound. Also located at the entrance are the earthen pillars (often thought to be phallic symbols by Western writers) which mark the ancestral shrines of the lineage, confirming the existence of the compound (Fig. 19).

A related aspect of "entrance," one illustrating the interface of myth and reality, merits further mention. Reference has already been made to the similarity between banco construction and coil pottery with the concomitant limitation on large openings. Consistent with the erection process is the tradition of cutting openings in to the enclosed space after the walls have been built and allowed to dry. The act follows a sequence of, first, the delimitation of a space and second, the creation of an access into it. While it may be that structural and concrete reality account for the building process, that reality has been transposed to a higher, abstract level by the Mossi. According to their myth of origin, the first ancestor of the founding Mossi lineage descended from the sky in a house without a door. There was a noise inside. Those who heard it cut an opening in the house wall and found within an Earth Priest fully equipped with the accoutrements of his office. Embodied in the myth is the acknowledgement of existential space. The relationship between myth and reality clearly illustrates an interface between art and science in building.

Even a rapid, cursory glance at the West African savannah, particularly in the Voltaic and Upper Niger regions, will reveal the ubiquitous presence of man-made, conical earthen pillars. They may be found singularly or clustered at compound entrances; frequently, they are incorporated into the entranceway itself, and often they can be seen

projecting, like engaged pillars, from the wall surfaces of sacred structures, such as granaries, within the compound itself. They are the hallmark of the so-called “Sudanese style” in African architecture; more important, they are a symbol of continuity and fertility. Among the Dogon, the earthen pillar is used both to mark the ancestral shrines deep in the cave recesses of the Bandiagara cliffs and to represent the mythical ancestors of the Dogon founding lineages, in the form of earthen finials above the façade of the ginna, the residence of a Dogon elder or hogon. Among the Tallensi, tall conical pillars located at the entrance approach are symbolic grave markers, while among the Kassena two such tapering earthen pillars, enlarged, frame the opening into the compound’s circumference wall. This latter pair not only symbolizes the viability of a farming unit, but mediates the transition from a profane, unknown, to a sacred, familiar realm (Fig. 20).

Eventually, under the impetus of Islam, these same ancestral pillars were transposed not only on to the multitude of Dyula mosques found in these regions, but on to the portal façades of Djenné’s urban architecture to become the sara fa har or quoins (Figs. 21–22). The architectural transformation was thus no more than a reflection of the way in which libations addressed to the ancestors at the threshold of the doorway were transformed into the sara ka or alms giving among those cultures which adopted Islam.40

Just as Islam, in its role of urban catalyst, generated the unfolding of a new architectural imagery out of indigenous tradition, so the development of highly structured political hierarchies among the Yoruba, the Fon, and the Ashanti instigated new architectural definitions of space. Since ruling dynasties were validated by divine gift, and the political domain was in many ways the counterpart of the religious domain, there was a continuum from the sacred to the political realm. Instead of the earthen representations of genealogical ancestors, it was the mythological heritage which formed the subject matter represented on palace walls and entrances. The brass plaques on the palace walls of the rulers of Benin, the earthen bas-relief sculptures on the pillars of the Fon palace at Abomey, as well as the arabesque motifs on Ashanti shrines reflecting the rich proverbial lore of the Akan peoples, while different in form are equivalent,

in concept and function, to the *sara fa har* on the Djenné façade.

The sacred quality of the entrance is often extended, logically, to the means of closure itself: the door and its lock. The best-known example, perhaps, is the wooden Dogon door, to be seen today in every respectable museum collection of African sculpture. The anthropomorphic representation of the primordial ancestry of the Dogon clans, carved in horizontal registers on the door itself and embodying the entire Dogon cosmology, by association reinforces the sacred quality of the entrance. By the same token and similar logic, the wooden carved lock itself symbolizes the union of male and female, since fertility and continuity are the counterpart of ancestry (Fig. 23).
fa har on the façade of Djenné is expressed by its height. Be Sao, the master mason at Djenné, when he singled out what he considered to be the most beautiful façades suggested that, "It is the most beautiful because it is tall and straight, like a man." His definition of an African aesthetic brings to mind not only Ibsen and Serlio, who saw the vertical column as a symbol of victory and defeat and as an expression of man's power of creation, but a suggestion by Bollnow that "by standing up, man gains stature in the world."\textsuperscript{41}

Another example of the way the symbolic meaning of the vertical direction is concretely expressed is the use of height to distinguish one's political position in society. One "caprice" of the Fon king at Abomey was that "no person is allowed to build his house of more than four tiers of swish," whereas his own palace walls were built of five tiers.\textsuperscript{42} Two-story houses were the exclusive right not only of the kings there, but of those at Kumasi, the capital of the Ashanti kingdom, as well as at Benin, seat of the Bini in southern Nigeria.

The three concepts which we have so far considered, i.e., center, boundary, and verticality, merge to form the dome. The conical form has been associated throughout world history with the sacred—with ancestral, divine, royal, and celestial abodes.\textsuperscript{43} The same symbolism appears in West Africa as well. One has only to cite the persistence


\textsuperscript{42} J. A. Skertchly, \textit{Dahomey As It Is}, p. 444.

\textsuperscript{43} See, for example, E. Baldwin Smith, \textit{The Dome} (Princeton, 1950).
of rounded structures for the bedchambers and mausoleums of the Fon kings at Abomey in Dahomey, the shrines of Ashanti gods such as that of Tano at Nkoranza, Ghana, and the circular Bambara shrines, all in the midst of traditional rectangular housing (Fig. 25). Baldwin Smith’s suggestion that the ciborium or traditional Tent of Appearances was transposed into the domical vestibule of Roman palace architecture has another parallel in West Africa, however, one providing us with further insight into the history of African architecture. 44 Mention has already been made of the Fulani and Songhai mobile architecture which often takes the form of a domical tent structure. Reference has also been made to the urbanizing role played by Islam in its advance across the Sahara into the northern savannah of West Africa. 45 Urbanization went hand in hand with sedentarism. In the early nineteenth century, the Fulani jihad or holy war, born in the Futa Jallon of Guinea, swept across West Africa, to establish the Fulani-Hausa Emirates of northern Nigeria. Nascent Hausa urbanization was given added stimulus, and many of the Fulani, carrying their nomadic tent tradition with them, became sedentary urban dwellers. Their traditional tents were gradually transformed into stationary dwellings along the lines we have already described for the Dyerma. During this same period the major trans-Saharan route stretched from southern Tunisia, where the dome is perhaps the most commonly used

45. A large number of the great mediaeval African cities such as Timbucktu, Djenné, and Kano were entrepôts on trans-Saharan trade routes and much of that trade was in the hands of Islamic families.

Fig. 25. Monuments raised to the Fon kings of Abomey (after A. Le Herisse, L’ancien royaume du Dahomey [Paris, 1911]).

Fig. 26. “Hausa Vaults” (after Y. Urvoy, L’art dans le territoire du Niger [Dakar, 1955]).

Fig. 27. Great Mosque at Zaria, northern Nigeria. Interior vaulting (photo: author).
the structural frame, and where Kairouan marks the seat of Islamic Malekite law, to Hausaland in northern Nigeria. The "pumpkin" domes of the mosque at Kairouan, themselves perhaps originating from a tent, reinforced the already familiar concept of domical space suggested by the Fulani tent frame. The traditional tent structure was infused with a new, now preferred, architectural imagery symbolizing Islamic adherence. The bent branches and timbers were gradually encased in earth, creating the characteristic ribs of what are today called "Hausa Vaults." Two superb examples of them can be found at Bauchi, in the Council Room of the Emir's Palace, as well as at Zaria, northern Nigeria, in the vestibule of the Great Mosque there (Figs. 26–27).²⁶

The circular Fulani tent, however, conflicted with the prescriptions of Malekite law, which insists on a square or rectangular *jami* or Friday mosque. In the Futa Jallon, this conflict was resolved by constructing a rectangular space under the great, traditional circular roofs. In Hausaland, the answer to the conflict between traditional round forms and the ideological prescriptions for rectangular forms was the Songhai tent in which bent, arched struts extend from a rectangular floor plan into a curved armature above (Fig. 28). The sacred quality attributed to the ancient, primordial domicile was thus translated into a cosmic symbol, the *koubba* or dome of Islamic worship.

Finally, although permanence has historically been considered as a traditional canon of architectural quality, recent concerns with mobility in contemporary society have generated a new interest in the kinetic aspects of architectural form. Here too, the African scene offers abundant resources. Except for the stone ruins of a number of mediæval cities, there is little evidence for an African architecture in permanent materials. The concept of permanence exists perhaps only insofar as it marks the "place" made sacred by ancestral habitation.

The very concept of dwelling is seen primarily in the light of family continuity and its social organization. The Tallensi term *yir* refers to both the residential compound and the family unit itself. To dwell implies a temporal continuum. The house, as the central place of human existence, as the place where man finds his identity, is also a concrete expression of the continuum which marks the

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life cycle of the family unit inhabiting it. The walls of the house are seen to exist when the spaces they enclose are occupied, just as the fields in one’s custody are “owned” only when they are being cultivated. A room unit without an occupant is lifeless, and it will be allowed to crumble back to earth unless it is imbued with a sacred meaning which will justify its continued maintenance. This quality of nonpermanence in a material sense extends beyond the house itself to the village. Among the Abouré people of the Ivory Coast, for example, entire villages moved every generation, in order to “make room for the deceased ancestors, who also need a place to live.” Nonpermanence, however, does not presuppose the absence of a stable system of “places”: rather, it connotes renewal, rejuvenation, and rebirth.

Summary

The foregoing discussion has touched only briefly on a few of the aspects underlying African architecture. The perceptive reader will rightfully question whether the traditional canvas which has been painted is equally applicable to contemporary architecture in Africa. A number of illustrations could be cited to demonstrate that while environments have changed in recent decades, the underlying cultural format continues. For example, the current proliferation of tomb construction among the Ashanti could be interpreted as a modified aesthetic continuum developing out of the traditional temple shrines. Further, the driving need to erect monumental structures symbolizing the newly born viability of African states after independence, e.g., the presidential palaces at Abidjan, Ivory Coast, and Aburi, Ghana, the transformation of Christiansbourg Castle into the seat of Ghana government, or the Emir’s palaces in the Hausa capitals of northern Nigeria, is no more than a political expression of the acknowledged symbolic role which architecture plays in reinforcing political and social structure. The difference is one of degree, not kind, between the lavish surface decor of a traditional chief’s compound and the marble-faced, gilt-edged walls of the current seats of power. While it is true that stylistic elements may vary, since meaning and content itself will change in time, the underlying principles remain the same.

Norberg-Schulz has suggested that basic to all building, traditional and contemporary, is man’s need to establish a meaningful, coherent, and stable image of architectural space, space with which he can identify and relate to, define his existence, and thus remain human. The concepts of center, boundary, path, direction, area, and domain are not unique to Africa; they exist equally as well in highly sophisticated, technologically advanced societies. What is unique to Africa are the ways in which these concepts manifest themselves. An understanding of those manifestations will in turn provide us with innumerable insights into what is already on the horizon: a truly universal theory of architecture which can embrace the whole of our man-built environment.
