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Modern
Architecture
in Africa



The lost cities of Africa¹

♦ THE DENIAL OF THE AFRICAN CITY

A widespread misconception that Africa did not produce any significant cities south of the Sahara before the arrival of Europeans persists even today. This misconception was initially the result of the denial of African history by the colonialists of the nineteenth and twentieth centuries. According to the generally accepted view of the period, Africans remained rooted in the Stone Age, and everything which challenged this view had been created not by the Africans themselves, but had been introduced by outsiders, in particular Europeans. For this reason research into the history of the African continent was not thought relevant, with the exception of research into subjects directly associated with the expansion of European civilization.

It was not until the 1950s that African cities were first subjected to scientific study. William Bascom in particular refuted the assertion that cities did not exist in Africa south of the Sahara, before the arrival of Europeans. He referred to Louis Wirth, who distinguished a city from a 'settlement'² in terms of size (more than 5000 residents), density, durability, and heterogeneity.³ The concept of 'heterogeneity', according to Bascom, refers to the social stratification within a society or the degree of integration of different ethnic groups within the population. Bascom added the notion of an 'informal social administration' as a criterion to Wirth's definition. According to these criteria, for instance, Yoruba settlements, which already existed in the early medieval times, can certainly be seen as cities.

Bascom himself, but also his contemporaries and successors, viewed African urban developments from an anthropological perspective. The debates of this time are theoretical, and hardly examine the morphology and other urban planning aspects of the city. Moreover, anthropologists did the fieldwork regarding architecture and

¹ Based on material in Basil Davidson, *The Lost Cities of Africa*, 1996.

² 'Folk communities', in, among others, Bascom 1958, p. 190-191.

³ Bascom 1995,

p. 446-454.

building technology in the twentieth century. This was exceptionally important work, because a considerable amount of African architecture has since disappeared. However, it is also work that will have a stronger foundation after closer study from the perspective of architectural theorists, building experts, and urban planners. Bascom's research was carried out at a time when the western city still looked like a medieval city with suburbs. Meanwhile, western cities have evolved into polycentric metropolises, segmented districts, or dormitory cities. We still call these settlements cities, although they no longer conform to Wirth's criteria.

The relationship between Africa and Europe has played a great role in the development of both continents. Africa and Europe are inseparably linked and have continually influenced each other. It was not until the early Renaissance that European influence on Africa entered a phase of one-sided exploitation. With the Portuguese at the fore, African coasts were stripped and plundered starting at the end of the fifteenth century, and a century later, the forced Diaspora of millions of Africans to the American plantations began, and would continue to the nineteenth century. It is not surprising that the transportation of so many millions from a not very densely populated continent led to a weakening and depopulation of the medieval city-states. Famous cities such as Kilwa and Sofala on the African east coast disappeared at this time. Ultimately, the conquest of Africa by the Europeans after the Berlin Conference of 1885 led to the destruction of important cities such as Benin, Kumasi, and Ouagadougou in West Africa.

However, it was more than merely destruction and denial that caused the disappearance of pre-modern African cities. Traditional African cities were constructed from perishable materials such as clay, wood and straw. Durable materials, in particular stone, were also known but were used only sporadically. The erection of enduring monuments was unknown in most African cultures. Buildings were used at most for one generation; after the generation who built them deceased, they were abandoned to nature or recycled. The Kabaka, king of the Ganda in what is now Uganda, left his palace when he felt death approaching. He disappeared into the forest and never returned. His successor founded a new court on a different site; the old palace disappeared when the last surviving servant of the old Kabaka extinguished the fire. The buildings rotted away and were again overwhelmed by nature and within a generation only a memory remained. This was true of palaces, and even more for the homes and workplaces of ordinary people.

Over the last half century, the history of Africa began to be taken seriously, and archaeological research has focused on finding and reconstructing the vanished cities of Africa.⁴

4 See among others, Abdulrahman 2004; Chami 2006; Davidson 1959; Chittick 1965; and Garlake 2002.



Ancient African cities (before 500 AD).



The mausoleum of the Kabaka in Kampala.

◆ OLD AFRICAN CITIES

The oldest cities on the continent are also among the most ancient in the world. Memphis with the White Wall, the power base of the pharaohs, was founded by the legendary ruler Menes, who unified Egypt around 3100 BC. The origin of the cities along the Nile is connected to the drying up of the Sahara, which began six thousand years ago, when nomads were forced to live in concentrated settlements beside the river. It was the unification of peoples with different origins that led to the sudden emergence of Egyptian culture. The ancient Egyptians built a great number of cities throughout their long history. Some, such as Thebes, grew organically around the palaces and storehouses of the pharaoh; others, such as the cities of Amarna and Pi Ramses, were conceived as ideal cities, as genuine 'new towns', and were laid out according to the wishes of the pharaoh or for religious purposes.

The Egyptian city was represented by the hieroglyph *Nwt*. It was determined by crossing the south to north flowing river Nile – the bringer of water and life – and the daily passage from east to west of the Sun-god Ra. The cities were orthogonally laid out at this crossing point. Nekhen, built around 4000 BC, contains the oldest known traces of a city laid out according to such coordinates. Such orthogonal Egyptian city plans pre-date by three thousand years the layout of Milete by the 'father' of the orthogonal city plan, Hippodamus of Milete.⁵

After the second millennium BC, Egyptian city culture expanded along the banks of the Nile toward the south. It formed a link between the empire of Kush with its capital Meroë (900 BC – 200 AD) in what is now Sudan, and Axum, the ancient capital of Ethiopia. Meroë can be seen as the centre from which African urban culture spread to the south and the west. Basil Davidson suspected that the significance of Meroë for Africa was comparable to the role of Athens for European development. This suspicion can only be truly verified after archaeologists investigate the vast ruins of the Kush Empire.

Following the establishment of the New Empire in Egypt (1550-1070 BC), contacts were made with city-states on the Red Sea and the Indian Ocean. During the rule of the female pharaoh, Hatshepsut in the fifteenth century BC, extensive reports were made of missions to Punt, a city that was possibly located in what is now Somalia. A thousand years later, references are still made to the trading city of Raphtha that played an important role during expeditions in the Greek and Roman periods.

Punt and Raphtha, which probably lay somewhere in the delta of the Rufiji in present-day Tanzania, have also yet to be localized. They are two more mysterious ancient cities that await archaeological discovery and research.

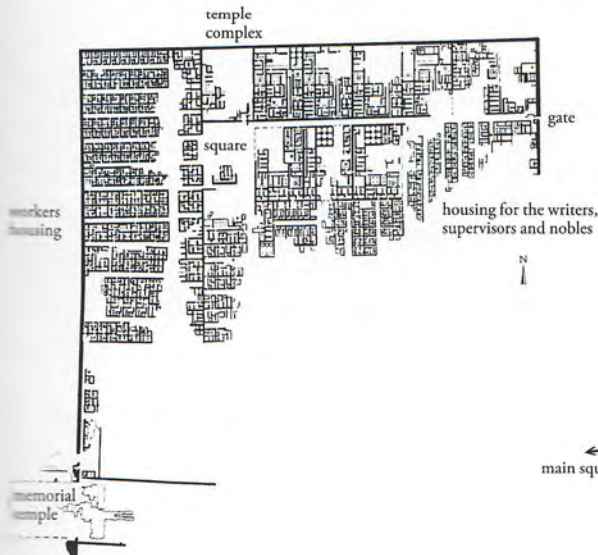
There are other places in North Africa that also have a documented history of urban development. Phoenician cities, such as Carthage in Tunisia; Greek colonies, such as Alexandria; and Roman garrison cities,



The Roman amphitheatre of El Djem in Tunisia.

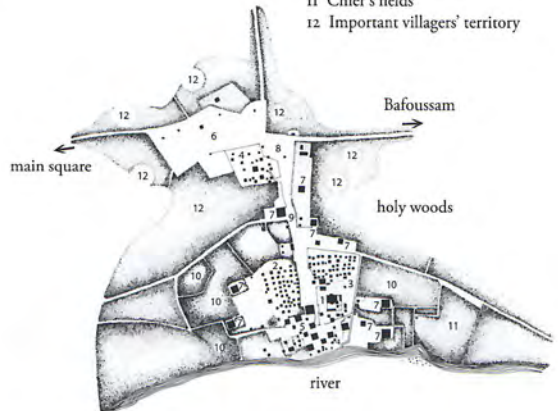


The Egyptian 'nwt'-hieroglyph for 'city'.



The Egyptian *New Town* Kahun of the Middle Empire (circa 2000 BC).

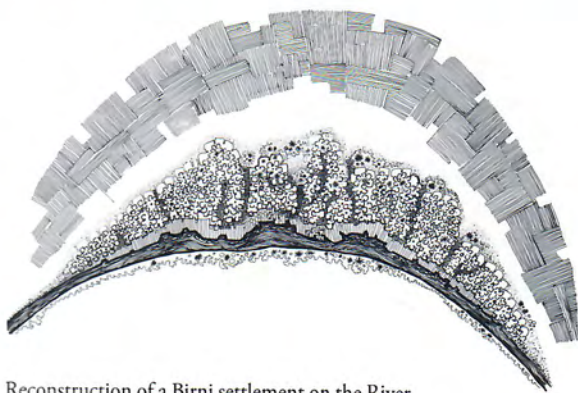
- 1 Chief's sleeping quarters
- 2 Quarter of chief's senior wife
- 3 Quarter of chief's second wife
- 4 Ancestral cemetery
- 5 Quarters of chief's courtiers
- 6 Market and meeting place
- 7 Community house
- 8 Meeting place
- 9 Main road
- 10 Chief's wives' fields
- 11 Chief's fields
- 12 Important villagers' territory



Schematic map of a Bedouin *Chefferie* in Cameroon.
After M.A. Fassassi



African cities in the Middle Ages (circa 500-1500 AD).



- ||||| fields
- ▣ houses
- ▣ river

Reconstruction of a Birni settlement on the River Logone in Chad. *After M.A. Fassassi*

such as Leptis Magna in Libya and Volubilis in Morocco are well known and, once again, were also part of a civic culture, which continued after the Arabic conquests of the seventh century. Research into North African cities focuses here, just as elsewhere, on the colonial influences of Europe and the Near East. The influence of traditional African culture on urban developments was considered insignificant. Yet today, an unmistakable African component can be seen that is rooted in comparable forms of popular housing dating back to their origins in Egyptian culture in the fourth millennium BC. The influence of Berber and Touareg cultures, which were described by Herodotus, is an example⁶ of this. Among the best-known ancient African city cultures are those of the Garamantes, who founded important cities in the Fezzan in present-day Libya, and who controlled the trade between the Roman Empire and sub-Saharan Africa.⁷

The drying of the Sahara led to the division of the African continent into North Africa, the Maghreb,⁸ and sub-Saharan, black Africa. The Sahara grew to be an enormous obstacle that became increasingly more difficult to cross than the Mediterranean Sea. The north-south relationship endured nevertheless, and caravans continued to cross the desert. In the Middle Ages, the exchange of knowledge and goods blossomed and well-known cities such as Marrakech and Timbuktu developed on either side of the Sahara, with Timbuktu evolving into a university city in the eleventh century comparable to Paris and Bologna.

The development of the cities of West and Central Africa can be traced back at least two thousand years. Meroetic influence on the development of the city cultures of northern Nigeria and Cameroon is unmistakable. However, the pieces of this puzzle will also only fall into place once extensive archaeological research has been carried out. The cities beside the river Logone in Chad, which were chartered by Masudi Alabi Fassassi, the settlements of the Nok culture in northern Nigeria, and the Tellem settlements in Mali, are all evidence of an intensive east-west relationship that had developed as early as two thousand years ago.⁹

It was from these developments that the powerful city cultures of West Africa emerged, as well as the kingdoms of the equatorial forest and the trading cities of the savannas, which stretched from Mauritania to Sudan. According to reports of that period, it was Ile Ife that set the pace from the early Middle Ages. Fassassi calls Ile Ife the ancient Rome of West Africa, a city that influenced many other areas of Africa.¹⁰ In the following centuries, there evolved a great number of West African cities, such as Benin and Kano in Nigeria, Oualata in Mauretania, Kumbi, Ségou, and Djenné in Mali, Abomey in Benin, Kumasi in Ghana, Ouagadougou and Tenkodogo in Burkina Faso, and Bamoun in Cameroon.

The equatorial forest regions particularly in Nigeria reached a high level of urbanization in the nineteenth century, despite of or due to the slave trade. Statistics from the mid-nineteenth century

6 Herodotos 1995.

7 See Daniels 1970; Hyland 2007.

8 Maghreb derives from *Maghrib*, Arabic for 'where the sun goes down', the west.

9 See among others, Jean-Louis Ducène, 'Le Darb Al-Arb'aïn à l'époque musulmane', in Bruwier 2007, p. 245-251.

10 Fassassi 1997, p. 76.

show that Yoruba territories were already strongly urbanized. In 1931, almost sixty percent of the Yoruba population lived in towns with over 5000 residents, meaning, in terms of urbanization, the region was comparable with France – only England, Germany, and the United States had larger urban populations.¹¹

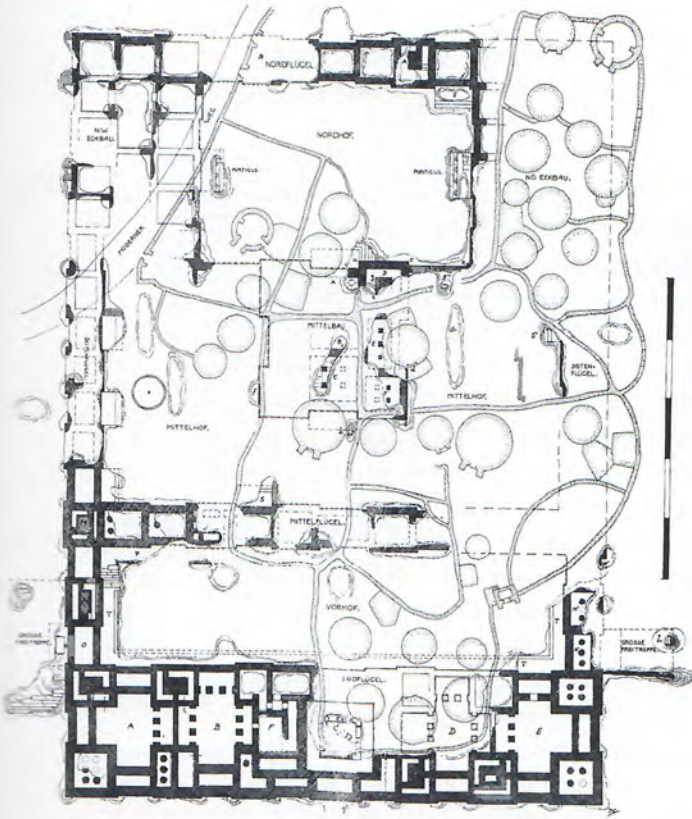
In the early Middle Ages, a city culture emerged in South and East Africa that was strongly linked with the gold trade. The royal cities of Greater Zimbabwe and Mapungubwe were built, in what is now Zimbabwe and South Africa, from the profits of gold mining, which was exported from the port of Sofala (now Mozambique). The trade in gold and, later, ivory was controlled by the sultan of Kilwa from the ninth century onward. Kilwa, located on an island before the coast of Tanzania, developed into the most powerful city in the region ruling vassal states that were strung like a string of pearls down the East African coast, from Mozambique in the south to Cape Guardafui in Somalia in the north.

Kilwa was controlled by the Shirazi, a people who evolved from the African population and the Persian colonists, who settled on the coast at the time of the Sassanid rulers. The Shirazi sultan maintained contacts with India, China, Arabia, and the African mainland. Kilwa blossomed in the Middle Ages, impressed visitors, as was documented by the renowned Arabic scientist Ibn Battuta in the thirteenth century, and in the last years of the fifteenth century by the Portuguese explorer Balboa. The empire of Kilwa aroused the envy of the Portuguese, who then conquered and destroyed the sultanate at the beginning of the sixteenth century.¹² At the end of the seventeenth century, the Portuguese were, in turn, chased out with the help of the sultan of Oman. The Omani steadily built up a coastal empire, which they controlled after 1830 from Zanzibar. From that moment, Suakin in Sudan, Lamu and Mombasa in Kenya, as well as Zanzibar developed into the impressive cities they are today.

Ethiopia was not part of these developments, but it has a unique history due to its isolation in the mountains. Ethiopia has always been an independent country with the exception of a few short periods of occupation. The oldest known Ethiopian city-state was Axum, which developed in the third century and whose influence extended to a large part of the Horn of Africa and the southern Arabian Peninsula. Ezana, the emperor of Axum in the early fourth century, adopted Christianity, similar to the Roman emperor Constantine, and this religion has since played a prominent role in Ethiopia. There was an initial close relationship with the Byzantine Empire during the first epoch; later, after the conquest of Egypt by the Arabs, Ethiopian Christianity became isolated. The decline of Axum was followed by the blossoming of the city-states of Lalibela and Gondar from the eleventh century onward. Ethiopia's unique and continuous Chris-

11 Bascom 1995, p. 447.

12 According to Basil Davidson, the Portuguese destroyed the East African civilization by their blind hunt for gold, an expression of their own primitiveness, 'The fault [the cause of the failed Portuguese search for wealth in Africa] lay in their own antiquated system or society. Lacking a strong mercantile class, they understood little but loot and conquest. They stood outside the stream of mercantile democracy; and their rigidly autocratic methods of government and trade proved ruinous for themselves as well as for all those whom they conquered. [...] Having seized the terminal ports of India and Africa and ruining these by royal order and aristocratic piracy, they blindly wrecked all that sensitive network of mercantile interest which centuries of trading had woven from one end or the Indian Ocean to the other. [...] they went off desperately in search of gold; and when gold eluded them they looked for silver; and when silver failed they went for anything they could get, and were finally content with slaves [who were destined for their colony in Brazil].' Davidson 1996, p. 331.



A city palace in Axum (circa 1000 AD). After D. W. Phillipson



The Great Mosque of Kilwa. Source: Ministry of National Resources and Tourism, Tanzania



The arrival at Kilwa by dhow. In the background the Portuguese fort which later was rebuilt by the Omani.



The Ethiopian mosaic of Praeneste with an overview of different ancient African building types.

tian culture has left a wealth of stone monuments that have made it possible to reconstruct its urban history, which is different to the situation in most other African city cultures.

This summary would imply that the idea of the traditional African city is just as illusory as the idea of the traditional European or Asian city. Ali Mazrui, Kenyan cultural philosopher, sees African culture as an original amalgam of traditional animistic African, Islamic, and Christian cultures – ‘the triple inheritance’. Nnamdi Elleh, who, to my belief, has made the first attempt to write a comprehensive account of African architecture,¹³ followed Mazrui’s lead over time and throughout the entire continent. This was an inevitably, somewhat superficial journey, due to the enormous time span and area of Africa that needed to be covered. However, the research has verified that Africa has been both the subject of other influences, as well as an influence to other cultures. The relationships with Asia and Europe reach further than a tripartite religious inheritance. Ancient Greece and Rome, the Chinese empire, the Sassanid Persian, and Indian kingdoms, and the empires of the Arabian Peninsula have had an important influence on African cultures. It is self-evident that African cultures have also had an influence on the rest of the world. The position of Africa, in relation to the rest of the world, has in fact been dramatically devalued over the last five centuries, despite the indisputable evidence that the human species originated in Africa, that the roots of human civilization lie in Africa, that Africa has exercised a vitalizing influence on other cultures, and despite the great respect that the Greeks and Romans had for the continent.¹⁴

This, in addition, is to recall the words of Pliny, who two thousand years ago wrote, ‘something new is always coming out of Africa’,¹⁵ and despite Pablo Picasso and Nelson Mandela, who turned modern art and world politics on their heads, Africa today is still seen as a dark continent that was only enlightened by the arrival of Europeans. This has been a persistent and standard preconception. The Dutch *Winkler Prins Encyclopedie* of 1884 described the continent as follows: ‘With few good harbors, ruled by savages, scorched by the equatorial sun, and covered by extensive deserts and bare mountain ranges, it long remained hidden under a veil, which is being lifted from year to year.’¹⁶ Preconceptions such as this are still evident in a remarkable article in *Der Spiegel*, which was devoted to Africa in 2007. The article describes the continent before colonization as a ‘largely dark world, ruled by tyrants, and ravaged by slavery and cannibalism’.¹⁷

13 Elleh 1997.

14 For the Greeks, Ethiopia was the collective name for the part of Africa where people with a darker skin lived. Where people still lived together with the Gods; a privileged and wise people who lived in abundance on the South Sea, where gold, ebony wood, ivory, precious stones, and spices came from, which were used as luxuries by the ruling elite. See Jean Tringuier, ‘L’Ethiopie vue de Grèce et de Rome aux époques hellénistiques et romaines’, in Bruwier 2007, p. 217-244.

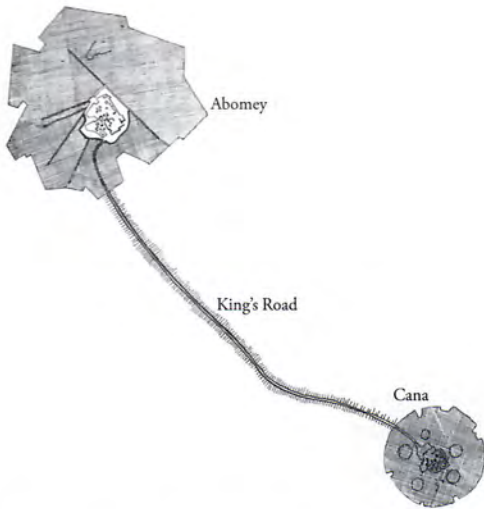
15 ‘Ex Africa semper aliquid novi.’

16 Winkler Prins 1869, second edition 1884, first section, p. 259.

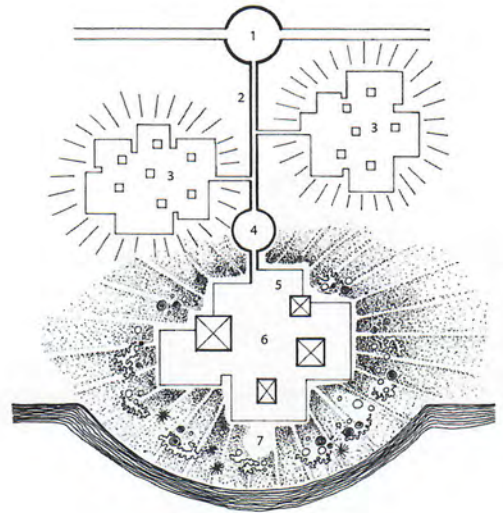
17 Wiedermann 2007, p. 37.



Africa in the middle of the nineteenth century – slave states are indicated in grey.



Abomey-Cana, the double capital of Dahomey (now Benin).
After M.A. Fassassi



Urban development scheme of a Bamiléké city in Cameroon.
After M.A. Fassassi

- 1 market place
- 2 main road
- 3 women's quarters
- 4 entrance area
- 5 meeting place
- 6 chief's quarters
- 7 sacred place



Interpretation of a Bamiléké settlement at the 1931 *Exposition Coloniale* in Paris.



Walled Yoruba city with the palace of the king in Nigeria.
After M.A. Fassassi

◆ CHARACTERISTICS OF THE PRE-COLONIAL AFRICAN CITY

In addition to the diversity outlined above, the pre-modern African city possesses characteristics that can be identified as specifically African, because they can be identified in various sites throughout the continent. Whether these characteristics derive from a 'pure' African source, or are the product of a mixture of African and non-African cultures, is irrelevant in this context. Bascom wrote that the pre-modern, Yoruba city represented a city-state. Other cities, such as Timbuktu or Kano, were dependant on their positions within a trading network. What linked these cities was a high level of self-sufficiency in food production. Intensive agriculture and animal husbandry were practiced within, and just beyond, the city walls. Various industries such as textiles, carpentry, and metal work thrived in these metropolises. The market and royal palace formed the city centre. The division of commercial and political power frequently led to a bipolar city plan, which saw a literal and strict division between the different parts of the city that were assigned to work and to politics.

The relationships and responsibilities of the city's population were organized according to physical proximity and, more importantly, hierarchical relationships.

The architect Fassassi carried out research in the 1970s that verified the above statements in a series of studies and publications on the history of the African city.¹⁸ Fassassi recognized a direct link between the anthropological and philosophical analysis of pre-modern African societies and the morphology of the African built environment. He analyzed the urban planning culture, the *lieux culturels*, of Meroë in Sudan, of Kumbi in Mauritania, of the cities along the river Logone in Chad, of the Akan in Ghana, of the city of Benin in Nigeria, of Greater Zimbabwe, of cities in Congo and Cameroon, and in the area of the Great Lakes (Uganda, Rwanda, and Burundi). He developed his analyses in fascinating schematic plans and models. According to Fassassi, the pre-modern African city is not simply a functional piling up of material and space, but a place with an evident, conscious stratification, in which the city is simultaneously a reproduction of the origin of the world (cosmogony), a memory of the past, and an imagined representation of the society. The city is a bipartite phenomenon in which physical and spiritual dimensions are given equal value.¹⁹ Fassassi saw architecture and city plan essentially as symbols of society and culture, and, therefore, not as measurable as modernists claim. He wrote, in relation to African urbanism, of a 'teratological city', by which he meant a city that, at its foundation, is subject to a deviation that we cannot know or quantify. Studying the pre-modern African city from a morphological and technical perspective, an approach initiated by Fassassi, is still in its infancy and requires further development and research.

Among the various plans of pre-modern African cities, it is possible to recognize reoccurring themes such as a loose structure and city walls for protection. The question regarding the city walls is

¹⁸ Fassassi 1997.

¹⁹ '[...] binôme, dont la première dimension est physique et la seconde psychique'.

Ibid., p. 11.

whether they first appeared as a result of the turbulent period of large-scale slave trade, or whether earlier cities were also enclosed by walls. Within the city walls, which at times enclosed a sizable area, there was space for market gardens, refugees, and livestock. The city was also largely self-sufficient. Susan Denyer attributed the often labyrinthine city plans to military strategies aimed at confusing enemy troops,²⁰ but, as Fassassi argued, the reasons for planning strategies such as these are much more complex.

It is likely that the loose structure of many pre-modern African cities began as enclosures within the traditional African landscape. Pre-modern African cultures were usually constructed around the spatial concept of the *extended family*. The extended family is either a patrilineal or matrilineal social group consisting of grandparents, parents, uncles, aunts, cousins, and children who reside together, until a son or daughter marries into a different extended family or goes to live independently.

The extended family resides in a complex of buildings located around a communal compound²¹ called a *cour*, which is the focus of family life.²² In and around the cour are the individual family huts²³ and storehouses for food²⁴ and stables for animals. When necessary, additional huts are built around the cour to provide accommodation for subgroups of the extended family. The cour and the buildings together form an enclosed area, however unattached buildings can also be present on the site. Kitchen gardens are also located in the cour, as well as cages for animals, hangars, altars, and ancestral tombs, which are located in the direct periphery. Fields and pastures lie further away, are mostly determined and used according to communal rights, and do not belong to the cour. The individual cours might be widely dispersed throughout the natural landscape, or located in clusters that bear a resemblance to a form of urban settlement.

In conclusion, it is possible to argue that the blossoming and development of the pre-colonial African city were interrupted by the arrival of the Europeans in the sixteenth century. Plunder and the slave trade depopulated and weakened African cities. For approximately four hundred years African metropolises were preoccupied by survival rather than progress or development.

20 Denyer 1978, p. 31-39.

21 In French: *concession*.

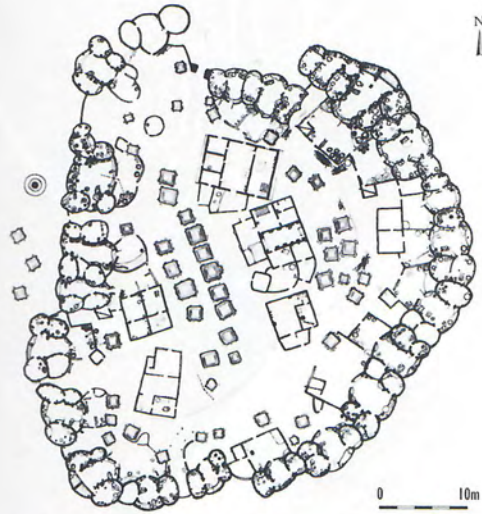
22 In French: *foyer*.

23 In French: *cases*.

24 In French: *greniers*.



The *cour* of Paolo Masoko in 1993.



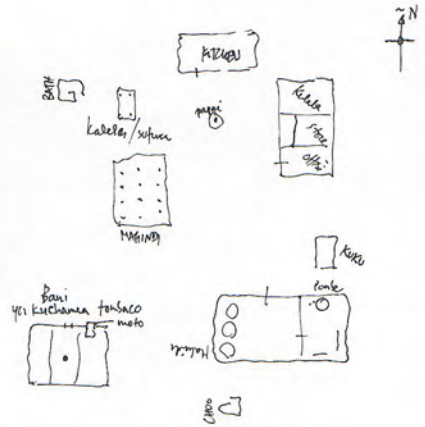
Town of the Gourounsi in Burkina Faso. After J.P. Bourdier



Fishing village on the island of Lamu in Kenya in 1990.

Nyumba ya Mzee Paolo Mashoto

between Nzeza and Tabona



Plan of the *cour* of the family of the tobacco planter, Paolo Masoko, in Nzeza in Tanzania.



The people and their African environment

■ TRADITIONAL AFRICAN COMFORT

The African continent offers an enormous variety of climates and environments. There are mountainous areas where it freezes at nights, deserts where it hardly ever rains, steppes, bogs, swamps, equatorial forests, subtropical paradises, areas with great temperature differences between the seasons, and endless savannahs both dusty and hot or cold, wet, and windy.

If only because of this variety, it is impossible to speak of a typical African architecture. Even so, as was seen earlier, there is a building typology, which is spread over many places on the African continent. This is the *cour* with the *cases*. The *cour* is not simply the space at the heart of a building around which the *cases* are situated, but it also gives a name to the whole complex and is the seat of the family in the broadest sense of the word.¹ The *cour* may well be called the African equivalent of the European home. In a European house, the living room is the centre of the house, in the African 'house' the *core* is the inner courtyard – the *cour* within the *cour*. The *cases* are not more than sleeping rooms. The other buildings around the *cour* are independent structures just as the *cases*, they include stables for animals and storage silos for the harvest.

Almost all of the daily activities, such as cooking, eating, working, resting, playing and washing, are conducted in the open air. 'My home is my castle', say Europeans. 'My home is a place to sleep', says the African. Or in the words of George Ssendiwala, 'Our traditional huts never had windows but only small openings in the wall to allow smoke to escape. Our daily social life took place outside and only at night did we go in to sleep and to make babies.'²

The traditional African building culture is tailored to the environment and the climate in ingenious ways. In the African Arcadia the buildings were adapted to local climatic conditions and the availability of building

materials, water, and energy. The African house was built of earth and what the earth in the direct environment produced in terms of organic and inorganic materials and, after its use, all these materials were returned to the earth. If a member of the family left or died, his or her *case* was abandoned. If a new adult person joined the family, then a new *case* was built. In this way, the *cour* was continually changing, like an organism that grows and contracts adapting to circumstances. The ultimate life cycle of the *cour* is determined by births or natural whim. If no more children are born, then the *cour* would die out as an infertile organism.

The *cour* of the Gourounsi chef coutumier in Réo in Burkina Faso is one example of the *cour* of an African extended family. The Gourounsi chief himself had actually left the *cour* in order to go and live in the house of a former colonial administrator. The members of his family who remained behind altered the traditional building bit by bit, creating the new type of *cour* with *parpaing & tôle* houses. In 2008, the outline of the old structure of the *cour* was still recognizable with the monumental entrance, the *greniers* (grain silos) and the typical Gourounsi walled-in *cours* of the women within the extended-family *cour*. Mrs. Bassolé was, according to reports, married over eighty years ago to the former chef coutumier and has lived since then in the small house that she built for herself.

Her house is always scrupulously maintained and when I visited it, it seemed like a museum because it was so tidy and there reigned a perfect balance of space and materials in a way that feels ancient. But it was no museum – just an ordinary home. The house faces the great *cour*, with a small courtyard and a central room for work, rest, and sleeping. The central room is connected to three small rooms used for storage, cooking and for the smoking of fish and meat. The temperature in the house is kept constant because of the thick roof and walls, except during the hottest periods of the year when people escape to the flat roof to sleep there. The rooms are lit by small roof openings which can be closed with ceramic pots when it rains. A house such as Mrs Bassolé's makes one aware that the smaller the light opening, the stronger and more precise the light presents itself in space. This almost physical experience of light is, according to Jean-Paul Bourdier, the true meaning of the word light. In traditional African buildings, light gives life to the space, and darkness could well be its counterpart: the soul.³ Such an experience is lacking in our modern living spaces with the prescribed minimal 200 lux and so on. However, the house of Mrs Bassolé *is* Mrs Bassolé and it will disappear when she dies...

Among the great variety of African climatic zones and natural environments, three dominate because of their geographic expanse. The first zone is the desert, the Sahara with its bordering steppes. These areas are characterized by low atmospheric moisture and rainfall,

1 'This traditional African house, whether situated in the forest, in the savannah, in a rural area or in the city, was organic and cosmogonic. It was a living organism sculpted from local materials; thatch, wood, and mud. An organism arranged to accommodate the time cycle of generations, the tasks and positions of the members of the *cour*. *Cour* (Fr.), the double meaning of courtyard and court, the court not belonging to a high ranking person, but being the extended family. The *cour* was the locus and the home of the extended family, transforming over time by adding and removing cells, the cabins, the *cases*, belonging to the individual, to cook, to store food, or house animals, to sleep, or to procreate. The *cour* would stay alive as long as there were children born to erect their own *cases*, once grown to adulthood, to assume their responsibility in the cycle or birth, life and death.' Folkers 2007, p. 1.

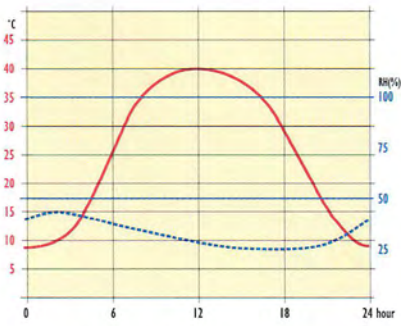
2 Interview with George Ssendiwala, January 22, 2002.

3 Bourdier and Minh-ha 2005, p. 4.



The climatic zones of Africa.

- Mediterranean
- desert
- semi-desert (Sahel)
- savannah
- deciduous forest
- non-deciduous forest



Daytime climate of desert and steppe zones.



Traditional desert- and steppe-zone building types.



ENTRE RAK ET CAJA NOV 08

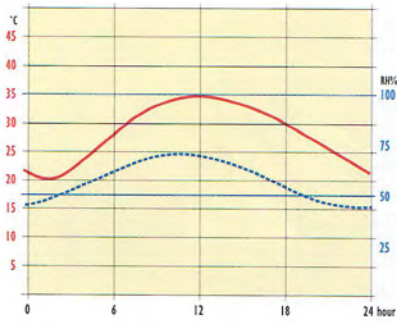
A village in the neighbourhood of Marrakech in Morocco.



A Tamanchek tent in front of the state printing press in Nouakchott by Lipsmeier. Source: Georg Lipsmeier



The city of El-Oued in Algeria in the 1950s.



Climate chart for day temperatures in savannah areas.



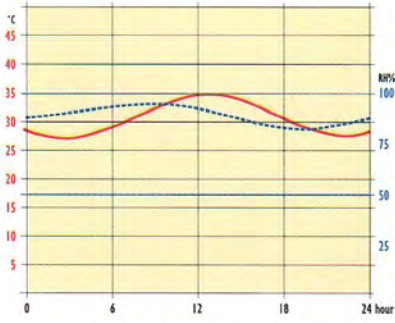
Traditional building type for savannah zones.



A tembe of the Gogo in Tanzania.



Plan of Madam Bassolé's house in Réo. [See also illustrations on p. 220 bottom and 236]



Climate chart for day temperatures in rain-forest zones.



Traditional building type for rain-forest zones.



The city of Granville Dahomey in Benin. Source: Georg Lippsmeier



President Sékou Touré's house in Conakry by Raymond Ayoub.



combined with great temperature fluctuations between day and night. In this zone, there are two predominant traditional building typologies: the nomad's tent and the building with the thick shell. This last type warms up slowly during the day because of its heavy encasing, and at night radiates the welcoming warmth into the room, only to cool down again at the beginning of the new day. The door and window openings are small, so as to keep out the hot dusty desert wind, the *Harmattan*. The buildings have walls and flat or vaulted roofs of stone or earth, standing close to each other around small enclosed courtyards which protect the scarce water supply and offer a shaded space for the residents and their plants.

The second zone is the savannah. The savannah extends over the entire southern end of the Sahel, the east African highlands, and the South African field. The climate and the biotope of the savannah are not as easy to define as those of the rain forest or the desert, and the architectural variety is consequently greater. The climate can be broadly characterized by alternating wet and dry periods with variations in temperature throughout the year. The buildings need to offer protection against cold and water and at the same time have to be open to the sun and fresh air. This translates into well-insulated buildings made of mud, wood, and thatch with ingeniously designed closable ventilation openings and a means to drain excess rainwater. The buildings are not as densely situated as in desert areas, but instead leave a space between them to allow cooling winds to enter the *cour*.

The third zone is the equatorial rain forest. In the equatorial rain forest and in a considerable part of Africa's coastal areas, it is always warm and damp. The differences between day and night and between the seasons are small. The house serves to keep the sun and the rain out but has to be inviting to the cooling breezes. This is mostly conveyed into a steep umbrella roof made of thatch or palm leaves with ample ventilation openings, and wide eaves to cast the rainwater away from the house. The walls are as porous as possible and mostly made of matting, wicker-work, wattle and daub, or wood. The homes mostly have an elongated, shallow plan and are frequently raised on a platform for optimal ventilation.

■ THE PLANTER'S HOUSE

The first colonial settlers introduced a form of architecture in Africa that was characterized by a pragmatic synthesis of western imports and local resources. This synthesis emerged from the fact that, during the first period of colonialization in Africa, roughly from 1884 to after World War I, practically all colonial buildings were designed by the pioneers themselves, the missionaries, or engineers working for the government. Professional architects only made an appearance later in most African countries, with the exception of the Maghreb and South Africa.

A parallel can be discerned in African, and for that matter, Asian colonial approaches to architecture. As was seen earlier, the English, French,

and German authorities and colonists adopted a comparable building technology and typology in the mostly simple buildings which they erected. An important exponent of this generic architecture is the home of the colonist. The homes of the African colonial administrator, the plantation owner, and the missionary from the middle of the nineteenth century to the beginning of the twentieth century are all more or less alike.

This generic home, which I call the planter's house, is characterized by verandas on all four sides. The house is raised on a plinth and has one or two stories with a hipped or saddle roof. The building technology employed is mostly traditional with a structure in wood, mud, brick, or rubble, with wooden floors and ceilings, wooden casement windows, doors, and a roof construction covered with thatch, corrugated iron or, preferably ceramic roof tiles. Most of the materials, such as clay, sand, chalk, rubble stone, brick, roof tiles, and wood can be made or found locally. Imported materials are limited to the scarce sanitary fittings, glass, and the odd tin of paint.

The planter's house also stood as a model for larger buildings, such as offices, hotels and monasteries. The magnificent palace of sultan Seyyid Bargash in Stone Town, which was described earlier, was the ultimate planter's house with three stories and imposing cast-iron columns that he ordered from Liverpool. This palace differed entirely from the traditional Zanzibari sultans' palaces of massive walls and small window openings, such as in the Mtoni Palace which we will examine later. Bargash palace was so radically innovative that it was called 'Beit el Ajab' (the House of Wonders).

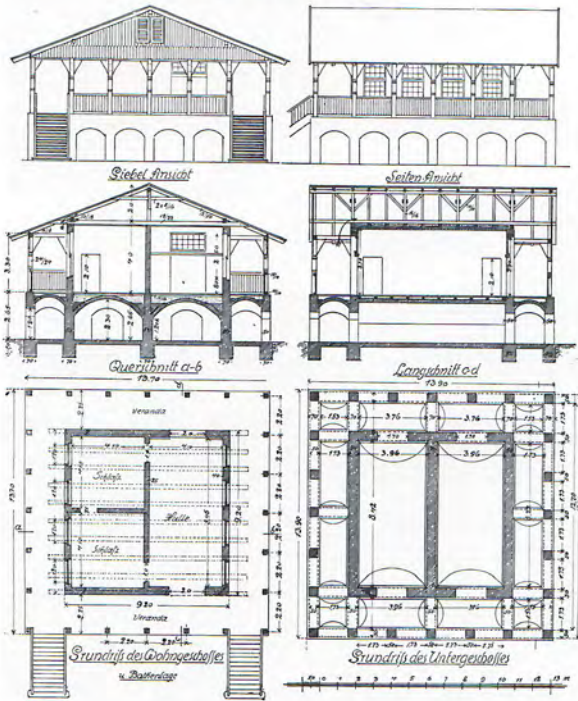
The architecture of the planter's house is the first expression of western modernity in building to be introduced into Africa on a large scale.⁴ It is an architecture that has proved its worth from a functional and technological perspective, and the buildings are still cherished by Europeans because of their character and their coolness. The planter's house is, moreover, well adapted to the warm and damp climate zone. Because of the wide roof eaves there is good protection against sun and rain and the elongated plan with great openings and shallow rooms is optimal for ventilation. The revaluing of this type of architecture took place in the 1970s and 1980s when modernism itself came under scrutiny, as we saw for example in John Godwin's work. My designs for buildings in Africa are still influenced by this simple and adequate typology. The Dobie House was intentionally inspired by this type of architecture, both in form and the technical design principles, which are comparable with those of the earlier planter's house.

▪ MODERN COMFORT IN AFRICA

Until World War II, building in Africa, with the exception of the Maghreb and South Africa, was largely limited to building by engineers working for the pioneering colonists. There was little work for the professional architect. Consequently, the modernist-educated generation was the first to introduce western academic architecture

4 The large number of renaissance forts in Africa from the fifteenth and sixteenth centuries can also be seen as an earlier phase in which Africa imported a modern European building style.

Plan zu einem Tropenhaus.



A standard example of an early-twentieth-century pioneer's house.
After: J. Strehl



Ngare Sero at the beginning of the 21st century. Source: Mike Leach

Ngare Sero at the beginning of the twentieth century. Ngare Sero was founded by August Leue in 1905. Leue was an officer in the German army that occupied Tanganyika from 1885. After leaving the army he established himself here with 200 German families from Russia – thus they were known as the ‘Volga Germans’. After the occupation of German East Africa by the British in 1914, Ngare Sero was still known by the name Leuedorf. Source: Mike Leach

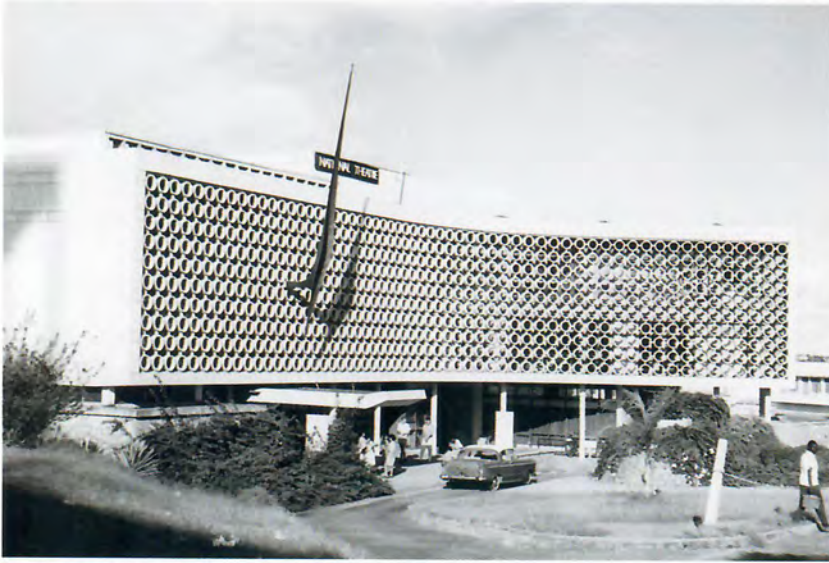


Beit el Ajab, 'the House of Wonders' of Sultan Seyyid Bargash in Zanzibar. The first building on the island with electricity, a lift and other modern conveniences. The freestanding clock-tower was badly damaged during the 1896 bombardment and it was replaced with a roof tower. [See also illustrations on p. 10, 65, 70 and 75] *Source: Zanzibar Archives*

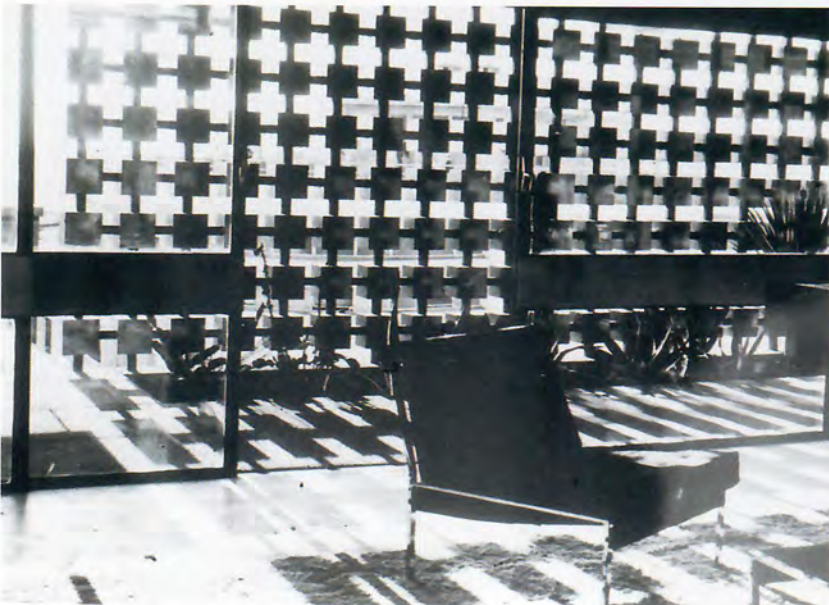




Dar es Salaam Club, formerly known as the Goan Club, by Almeida (1958). *Source: Anthony Almeida*



The National Theatre in Kampala by Peatfield & Bodgener. *Source: Georg Lippsmeier*



to Africa on a large scale. Moreover, it was modernist architects who would design the basic physical structure of the late colonial welfare state and the young independent African nations. In many African countries, particularly the police stations, ministries, schools, hospitals, post offices, and museums were built in the post-war modernist tradition. These buildings often exude the infectious optimism of a new beginning.

Just as the planter's house, African modernist architecture of the 1950s is amazingly homogenous throughout the continent. The buildings are often sparkling, white-painted plaster or concrete edifices with ingeniously designed double facades and flat roofs, which were inspired by the 'Mediterranean' architecture of Le Corbusier and his followers in Europe, India, Brazil, and the Maghreb. Particular attention was given to the provision of screen walls, and ingenious *brises-soleil* or *claustras* were added to the glass windows. These additions had the added effect of casting beautiful light patterns into the interior.

Modernist architecture was suited to the subtropical climate of the Maghreb and the Cape, but it created problems in the warm and damp tropical zones. The polished walls soon turned green and grey from pollution and mould, because the facades lacked eaves, copings, and water drips. More problematic were the flat roofs. In the savannah and the warm wet areas of the equatorial rain forest zone, the flat concrete roofs absorbed too much heat, making it unbearably hot inside from midday through to the next morning, when the process would begin again. Moreover, it is very difficult to ensure that the flat roofs remain watertight, as the roofing seal frequently cracks under the strain of the high temperatures. Finally, large roof overhangs were not fashionable in the cubist Mediterranean architecture, which would otherwise have protected the walls from unnecessary direct exposure from the sun.

The design I conceived for the renovation and extension of a school for deaf children in Tabora, originally designed by Anthony Almeida, was intended to preserve the appearance of the classrooms. However, the flat roof leaked, and the heat at midday made it very difficult for the children to concentrate. Also, we discovered that temperature fluctuations had caused the roof structure to come loose from its supports. A loud crack sounded through the building every day at three o'clock in the afternoon, as the roof slab shifted over the supporting ring beams. With a pent-roof hidden behind a slightly raised parapet, the appearance of the school from the street remained more or less unaltered and the interior temperature control and watertight aspects of the school were improved.

Labeling Almeida as a rigid follower of Mediterranean modernism however, is not justified. Almeida was one of the modernist architects who sought solutions to problems in the adaption of local resources – for which he coined the slogan, 'adapt, not adopt'⁵ – and he applied it above all with success in his later work, such as the ecumenical Joint Christian Chapel on the UDSM campus of 1975. As

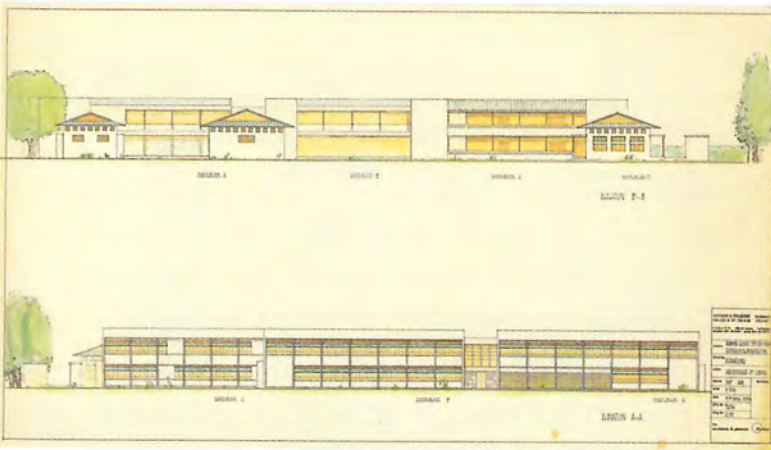
⁵ Anthony B. Almeida, 'To be or not to be – Traditionalist or Modernist, Nationalist or Internationalist – That is the question for architects in Tanzania', in Folkers, Van der Lans, and Mol 2005, p. 128.



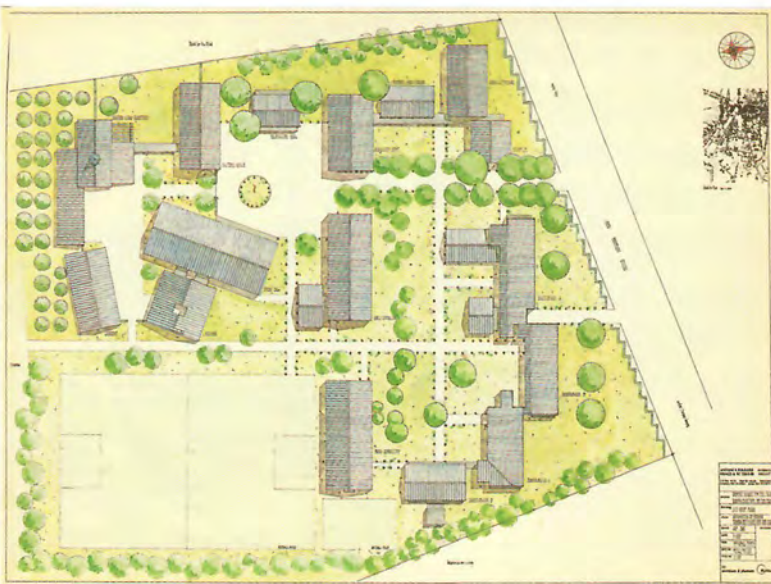
School for Deaf Children in Tabora by Almeida (early 1960s).



The extension of the Deaf Children's School in Tabora in the 1990s.



Proposal for the restoration of the Deaf Children's School in Tabora in the 1990s. Facades.



Proposal for the restoration of the Deaf Children's School in Tabora in the 1990s. Plans.

the name of the chapel indicates, it provides space for different Christian groups. The building has a Greek cross plan with three arms that can be closed off by means of folding partitions for the three church groups, who can use the building independently, and a fourth arm for the communal choir and other facilities. When the partitions are opened, there is space for a communal church for large services. The building has a cassette roof with wide eaves, which gives the impression that the roof is floating over the walls. Full-height vertical strips of coloured glass blinds are placed at the interior angles between the arms of the cross. In this way the church creates a feeling of coolness, sanctity, and openness combined. [See drawing on p. 173]

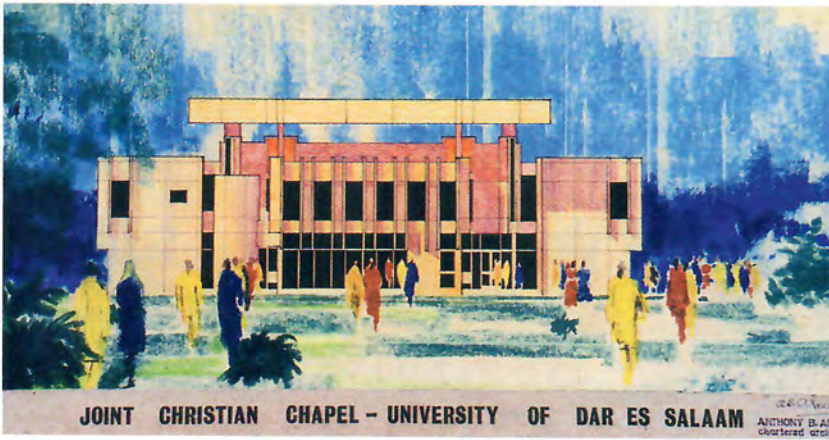
Almeida represents an architecture adapted to the local climate and the natural environment, without losing faith in the universally valid principles of the modern movement, which had turned its back on local cultural conditions. The tropical climate was for internationally operating architects and urban planners, like Constantin Dosiades and Maxwell Fry, the prevailing reason to depart in minor details from the modernist canon. Thus it was possible to adapt a specific model to conditions in Brazil, Cambodia, Indonesia, and Ghana. For the warm and wet zones in Africa, the savannah, the coasts, and the equatorial rain forest, Mediterranean modernism was not optimal for climatic reasons, thus a new generation of internationally operating architects working in Africa, such as Lippsmeier, Prouvé, Almeida, Godwin, and Hughes sought new solutions.

Jean Prouvé designed the *maison tropicale*, a prefabricated house for late French colonial administrators working in the equatorial forest regions of Africa. It was such a sophisticated and experimental interpretation of the planter's house that it was thought too extreme even by modern Europeans, and in the end, only three prototypes were built. [See p. 343]

Of comparable design is the house by Raymond Ayoub for the president of Guinea, Sékou Touré. It is a literal translation of the traditional African planter's house for the equatorial rain forest zone built with modern materials and technology.

Ayoub succinctly expressed the viewpoint shared by many modernist architects about African architecture in the 1950s and 1960s: 'Africa [...] has since the last World War been open to the technique and the social organization of the west for its development.'⁶ Up to that time, he continues, 'Africans who lived to the south of the fifteenth parallel – mostly all Africans who live to the south of the Sahara – used their energy just in trying to survive in the aggressive climate.' According to Ayoub, 'westerners had the ability to challenge this aggressive climate using modern building methods that would enable them to offer Africans a lifestyle, which would help them develop as the West had developed.'⁷

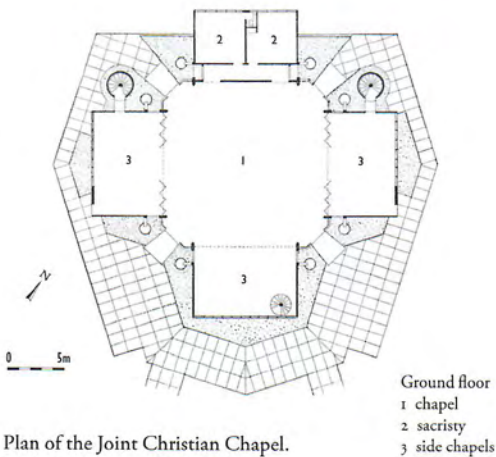
6 Ayoub 1966, p. 174.
 7 'Die Behauptung ist nicht übertrieben, daß die Leistungsfähigkeit eines Volkes und sein technische und sozialer Fortschritt direkt abhängig sind von dem Grad der Behaglichkeit der Wohn- und sonstigen Bauten aller Art, die für den Menschen Obdach sind.' And: 'Südlich vom 15. Breitengrad bilden die ständige Feuchtigkeit und langweilige Wärme, die Unveränderlichkeit der Jahreszeiten und der Tage und Nächte ein besonders ungünstigem Faktor. Der größte Teil der menschlichen Energie wird für den organischen Kampf gegen das Übermaß des Klimas verbraucht.' Further: 'Ist es in unserer Macht, gegen diesen Faktor [the climate] zu kämpfen, den Menschen mindestens teilweise von den Lasten seines Klimas zu befreien, um seine Leistungsfähigkeit zu erhöhen und ihm dadurch zu ermöglichen, die technische Hilfsquellen auszunutzen, und in welchen Maße? Die Antwort is positiv. Für das Mikroklima eines Wohngebietes und das Raumklima eines Gebäudes können wir viel tun.' *Ibid.*, p. 174.



Design drawing for the Joint Christian Chapel by Almeida on the campus of the University of Dar es Salaam (1975).



Interior and exterior of the Joint Christian Chapel in 2007.



Plan of the Joint Christian Chapel.

▪ THE INFRASTRUCTURE OF THE MODERN AFRICAN CITY

The contributions building technology can make to comfort must be viewed in conjunction with the infrastructure of the city. Running water, sewage, electricity, information technology, mechanical installations, and mobility obviously make a significant contribution to the well-being of people in their environment. The introduction of this modern infrastructure went hand in hand with the advent of colonial architecture in Africa. A city like Dar es Salaam has an infrastructure that at first sight differs little from that of any other modern western city. It has paved roads, running water, sewage, an electricity grid, a rubbish collection service, and a telephone network. We have already seen in the case of Ouagadougou that such an infrastructure serves the formal city far more than the informal city. In 1990, it was estimated that only five percent of the population of Khartoum had access to a modern sewage system, and in 2005 only one percent of the more than ten million residents of Lagos were connected to sewage mains.⁸

The sewage system of Dar es Salaam largely dates from the colonial period and it still drains into the sea. This system was perhaps adequate for a city of 200,000 residents, but it is completely inadequate for contemporary Dar es Salaam with more than three million residents. The sewers often become blocked because of water scarcity. Therefore, most houses in Dar es Salaam have their own septic tank and cesspit. The city districts where the less-well-off live are mostly situated in the river valleys and the coastal swamp area, and are thus vulnerable to diseases such as cholera and hepatitis due to the high ground-water level. It is safe to assume that water from shallow wells is no longer used in Dar es Salaam, apart from in the suburbs on higher ground. But there are certainly many towns in Africa where drinking-water wells and cesspits are located in dangerous proximity.

In Ouagadougou in the 1980s seven percent of the households were supplied with running water, and only five percent of the population of Lagos in 2005 were connected to water mains.⁹

The supply of running water in most districts of Dar es Salaam is non-existent or functions erratically. At the moment, reliable drinking water is sold in plastic bottles or is brought in by tanker trucks, and sold by water sellers on bicycles in buckets and jerrycans. In Ouagadougou, it is distributed in old oil drums on handcarts. City dwellers who can afford it store their water in underground cisterns or in voluminous plastic containers, which they fill from tankers or at night from the mains, if the water supply is functioning. An infamous story is told in Dar es Salaam about water being supplied by the local fire brigade, which makes money on the side in this way but as a consequence has no water available when indeed a fire breaks out.

The situation with regard to electricity is different. Many urban households in Africa are at the moment connected to the electricity grid, but the electricity consumption of the informal city is minimal.

8 Murray and Myers
2006, p. 252.

9 *Ibid.*

In 1991, a resident of the United States used 280 times as much electricity as a resident of Chad.¹⁰ Electricity in Tanzania is generated by a number of hydroelectric dams. The often absent rains, combined with an increasing demand for electricity, have led to power-shedding, a regulated supply that is limited to specific days and times. Yet it does not seem as though the government and the elite take the saving of electricity very seriously.

The new office buildings in the city and the villas in the suburbs are all air-conditioned. Moreover, glass at the moment is a popular building material, and it is not unusual to see office blocks with complete glass facades. During power cuts, these buildings can generate their own electricity with emergency power supplies to keep the lifts and the air-conditioning functioning. For Joe Osae-Addo the cacophony of stand-by generators is a symbol of developing Africa.¹¹

The road system of Dar es Salaam, used by an estimated 75 percent of all Tanzanian cars, is overburdened and it is not advisable to try to cross the city in the rush hour. There are only a few asphalted roads; most roads have never been asphalted or if they were, the asphalt has eroded away. In the dry season the city's suburbs are covered in a cloud of dust from all the traffic that uses the sandy roads; in the wet season the road system is transformed into a muddy pool with vehicles zigzagging from side to side trying to avoid sinking into the deepest potholes. Most of the city's residents travel around by foot, bicycle, or use public transport. In the socialist period, a centrally controlled public transport system with city buses was established in Dar es Salaam, but now large buses no longer exist in the city. Instead there is an efficient system of privately owned and run, small and medium size vans.¹² Government traffic regulation and control are indispensable, as failure gives rise to dangerous situations. Many deadly accidents occur because of failing technology, reckless driving, and lack of maintenance of the road system and the vehicles that use it.

The garbage collection service of Dar es Salaam is not yet up to its job. Rubbish is mostly burned by the residents, understandably as far away from the home as possible – at the roadside, for instance, or in other public places.

Finally, the African city has a telephone network of landlines, but the system is extremely vulnerable due to the low number of subscribers and long distances that need to be spanned by outdated and cheaply executed overhead lines. During the 1980s, we encountered this as a great problem, but now it seems to be resolved by the paramount success of the mobile telephone network.

10 Sachs 1991.

11 Osae-Addo 2007, p. 3.

12 In Tanzania they are called *daladalas*, in Kenya *matatus*, in Ghana *trotros*, in South Africa *taxis*, etc.

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