TRADITIONAL PLANNING ELEMENTS OF PRE-COLONIAL AFRICAN TOWNS

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OPSOMMING

Die konsentriese boustyl van prekoloniale Afrikastrukture (skuilings, woonplekke, plazas, gange, paaie of mure), asook die gemeenskaplike gebruik van fasiliteite in die prekoloniale stede, is in oorsprong eie aan Afrika. 'n Delikate balans tussen die beskikbare ruimte en die hoeveelheid mense wat dit bewoon, het aanleiding gegee tot ruimtelike intimiteit, asook 'n gevoel van kohesie, groepbeheer oor die nabyliggende omgewing sowel as die ruimte tussen die stede. Dit alles het bygedra tot die omgewingshandhawing van die stad. Hierdie artikel ondersoek die historiese grondslae van beplanningsprosedures ten grondslag van die vorm en struktuur (organies sowel as militêr) van tradisionele, pre-koloniale Afrikadorpe en -stede en hoe daarin geslaag is om 'n gesonde simbiose tussen stedelike en landelike omgewings te skep en te onderhou. Hierdie historiese insig sal eietydse stads- en streeksbeplanners in staat kan stel om in hulle beplanning van dorpe en stede tradisionele boustyle te kan verstaan en moontlik tot voortsetting van die tradisie kan implementeer.

INTRODUCTION

Urban Africa today displays certain of the undesirable characteristics of Western urbanism. Amankwah-Ayeh (1995:37) notes that patterns of crime, prostitution and social disorganization in Africa increasingly resemble those of the western world. Poverty, squalid conditions and anomie have become part of the modern urban scene in Africa. Yet, there are still basic elements of pre-colonial urban Africa that are worth preserving (or at least are adapting) to meet changing demands for better living standards.

This paper focuses on the historical dilemma of building sustainable environments. This will be done by analysing the ways in which pre-colonial African towns minimised problems attendant on urbanisation and the feeling of congestion, how they maximised their use of urban space and maintained a delicate balance between mass and space. It is recognised that differences in social

organisation between tribes have resulted in planning arrangements which are not necessarily uniform, nor even similar. This is a direct result of many tribes co-existing in Africa, separated by long distances and having little contact due to the nature of the transportation system of the period. Despite the diversity in the composition of Africa's peoples, certain generalisations can, however, be discerned from a study of their town planning layouts. The debate concentrates on seeing traditional environments not as a static legacy of the past, but as a model for a critical reinterpretation of the present. This model's application to South Africa, it is hoped, will provide clues that will help planners to understand city and town planning principles, procedures and processes in traditional African urban settlements and to move away from a dogmatic subservience to rules, regulations, reliance on technicism. and technocracy in the practice of town planning. It is hoped that it will encourage a more humanistic approach to development planning.

MYTHS AND LEGENDS DISPELLED

The 19th Century geographical discovery in Africa laid many of the geographical myths and legends to rest. Davidson's (1959) discussion on these legends and myths includes, for example, descriptions stating that the "Niger river flowed to the westward". However, Mungo Park setting his eyes upon this river, vividly described it as follows: "I saw with infinite pleasure the great object of my mission — the long sought-for majestic Niger, glittering to the morning sun, as broad as the Thames at Westminster, and flowing slowly to the eastward" (sic) (p. vii). Overnight, this statement dispelled the misconception about the Niger river held by the English, and rectified an age old confusion.

Perhaps as planning approaches the 21st Century it needs to take cognizance of research done over the past two centuries by geographers and historians who worked tirelessly to reveal the truth about the African continent, so as to show that the pre-colonial towns of Africa were built on sound town planning, design and architectural principles. The studies of pioneers, such as Hull (1976), Mabogunje (1962), Davidson (1959) and others into traditional African settlements provide pointers that could help future generations preserve and in a sense re-create Africa's heritage. Indige-

nous patterns of planning were firmly rooted in the planning, building, construction and maintenance of towns and cities in Africa long before the advent of colonialism.

This paper does not attempt to examine every pre-colonial African town or city. It attempts to examine the principles underlying the planning of some of these pre-colonial African towns and cities by studying their form and structural elements. Pre-colonial African towns and cities minimised the feeling of congestion while making maximum use of urban space. The planning principles behind the form and structure (organic and/or militaristic) of pre-colonial African traditional towns reveal tight clustered layouts around compounds (Amankwah-Ayeh, 1995:38).

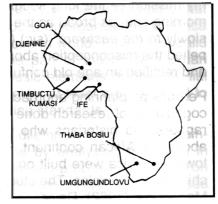
The communal usage of spaces and facilities is today being reintroduced into planning as cluster settlements and has gained popularity in urban development in South Africa, as elsewhere. Understanding the functions of the structural elements of planning in pre-colonial cities and towns may help breathe new life and inject fresh ideas into the planning and creation of new environments adapted to African culture, traditions and heritage.

TOWN PLANNING PRINCIPLES IN PRE-COLONIAL AFRICAN TOWNS

The analysis of pre-colonial African cities reveals a number of significant compositional elements pertaining to form, structure, pur-

pose and design or layout principles behind plazas (open spaces in the middle of the city), passageways or streets, walls, and dwellings.

Several great cities and towns had arisen and fallen in Africa long before the arrival of foreign influence on the continent. Gao, Timbuktu, Djenne, Thaba Bosiu, Umgungundlovu, Kumasi, Ife and Kilwa are but a few examples of



these pre-colonial African cities (Map 1). With respect to size, Great Zimbabwe had a population of 30 000 at its peak in the early

16th Century (circa 1505) (Huffman, 1986); Kumasi, the capital of the Ashanti confederacy in 1817 had a population crudely estimated to have been upwards of 100 000 (Bodwich, 1819 in Boahen, 1971). Muller (1993) reports that "the Fourteenth Century village at Ntsuanatsatsi accommodated some 1 500 people" (p. 9).

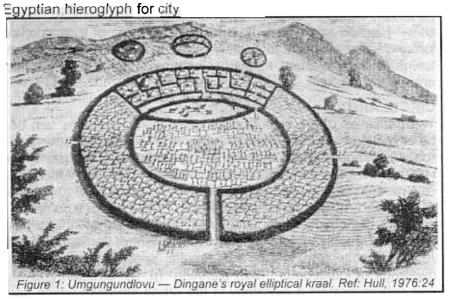
However, although accurate estimates of population size, hierarchical function and economic prosperity of some of these pre-colonial cities are difficult to determine, a study of African cities and towns reveal important traditional compositional elements which are African in origin.

CIRCULARITY

The principles of the layout of pre-colonial African cities can best be explained by the circularity in the pattern of dwellings, roads/passages, walls, plazas and settlement patterns. Muller (1993) writing on early settlements (villages) in South Africa such as Broedestroom in the Transvaal — which dates back to between AD 350 and AD 600 — indicated that ... "these villages comprise a complex of houses, each circular in form" and that "the circular house is arguably the most distinctive element of vernacular South African architecture, as is the circular spatial arrangement of dwellings of indigenous urban planning" (p. 9). Circularity in African culture reveals a hierarchy in the urban structure which does not lead to alienation of the masses but maintain a good sense of control of the environment.

Circularity is based on the tradition of people. For example, Yoruba tradition has it that the sacred settlement of Ife, the model on which Yoruba settlements are patterned, originally consisted of four sectors around a central location on a hill where the palace of the religious chief was found. According to Mabogunje (1968) "Yoruba compounds ... divide into numerous rows of houses, housing a number of related families, ... cover about half an acre of land; the compounds of chiefs cover several acres" (p. 100). In an earlier book, Mabogunje (1962) establishes a rational for the circular nature of Yoruba dwellings, shelter, town form and plaza design. He reports on the Yoruba's belief that the form of the world is circular, and, because of the two road axes (oriented N–S and E–W) which intersect at the world centre, is divided into halves

and quarters. Accordingly, pre-colonial Yoruba towns were patterned on the principle of circularity in terms of their town plans, town walls, plazas, dwellings and roads. This belief of the circularity of nature of the Yoruba is comparable to that held by the Egyptians about the circularity of the earth and is illustrated in the

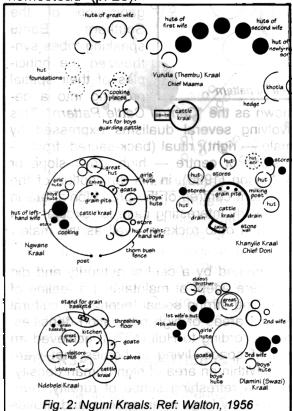


Pre-colonial African settlement patterns were curved, non-rectangular, with a strong sense of enclosure and a fine sense of adaptation to the environment. The evolution of the circular house or dwelling from the incipient grass shelter to stone wall structures of the Bantu speaking people in Southern Africa is well documented by Frescuro (1981). Colonialism was accompanied by the European tradition of Cartesian geometry in urban design, and in particular the grid layout — sets of parallel streets crossing each other at right angles — for new towns on frontiers or pioneering situations. Social-class formation and an authoritarian top-down hierarchy which is revealed in the square and rectangular forms of spaces in the Western traditional culture are decidedly non-African in origin and pose several challenges regarding their applicability and adaptability in Africa.

Hull (1976) captures the principle of circularity in Zulu settlement

form when he notes that huts were arranged around a circle, and that the huts themselves were circular in shape. Zulu towns constructed under the supervision of Shaka's well-disciplined warriors were ideally situated and rationally planned. An example of a circular-planned settlement form in a pre-colonial African city is illustrated by Umgungundlovu — Dingane's royal elliptical kraal (Figure 1). Of Umgungundlovu, Hull (1976) states: "in a typical new town, fourteen hundred domed grass huts were constructed around a circumference of three miles and situated on the side of a hill for purposes of drainage. Structures were evenly spaced and designed so as to retain the privacy of the traditional isolated

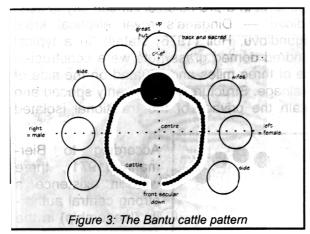
homestead" (p. 23).



According to Biermann (1971), there was in existence a strong central authority (leadership) in the structure of Zulu social organisation which could command mass labour for the construction imposing public edifices. The pattern of Zulu settlement is circular with a cattle enclosure at its centre. settlement The constructed on sloping ground, so that the main hut is at the highest point and the main entrance at the lowest level (Figure 2). The huts to the right of the main hut (Indlunkulu sector)

belong to the *Igadi* sector, those of the left, to the *Ikohlwa*.

Drake & Hall (1993) in their study of traditional Tswana settlement allude to "remarkable consistency with a density of one person per fifty square metres" (p.207) and demonstrated that "the spatial layout was not random, but ordered and conceptually underpinned by



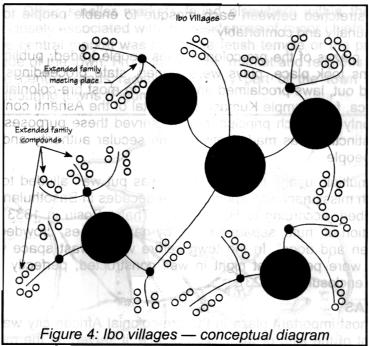
a set of principles that were used consistently over many hundreds of years" (p. 207). Kuper (1982) in his attempt to understand the living space organisation of the Southern Bantu speaking tribes synthesized the principles of their spatial ordering into a ge-

neral structural model known as the "Central Cattle Pattern". This model reveals rules involving several dualisms expressed by gender (female — left, male — right); ritual (back-sacred, front — secular); and status (up-slope or centre — high, down-slope or sides — low) (Figure 3). Mason (1986), in his description of the more complex urban settlement centres of the pre-colonial era in South Africa, made a particularly interesting case for circularity in the motif of town plans etched onto rocks as well as the male / female, high / low dichotomies.

Some Africans were not governed by a central authority and did not build big cities. These were adept at maintaining a feeling of smallness and intimacy keeping strong social, economic, cultural and physical linkages even in areas of high population densities. The Ibo people of Nigeria, according to Hull (1976), achieved an astonishingly efficient use of space, living in homes that were clustered in plan (Figure 4). Within an area of high human density, which nevertheless retained a refreshing sense of rurality, hundreds of Ibo villages separated by large open spaces and groves of shady trees that led to 'extended' family meeting places. A central market place was the focus of all the paths that led from the

'extended' family meeting places (Figure 4).

Nature conservation and environmental protection measures were



evident in pre-colonial African communities. Examples include large-spaced houses in eighteenth-century Mbanza Kongo (Balandier, 1968) and the building of houses around existing trees to avoid disrupting the ecological balance by the Bashilele near Mbanza Kongo (Johnston, 1969). Other examples include the traditional building rules practised in the Bangala towns in present day northern Zaire (Congo) where towns have to be bordered by rectangular patches of banana plants and double rows of palm trees (Vansina, 1973).

DISPERSAL OF FACILITIES IN THE PRE-COLONIAL AFRICAN CITY

Several facilities, most offering multiple usage, were dispersed throughout pre-colonial African cities to facilitate usage by all inhabitants and to avoid overcrowding, strife and conflict. Sokoto, for example, was built as a new capital of the Fulani caliphate. Its new

elegant mosques were, as described by Hull (1976), "deliberately dispersed throughout the city to facilitate the teaching and practice of Islam by everyone" (p. 25). Public squares lined with shade trees stretched between each mosque to enable people to pray communally and comfortably.

In the plazas of the pre-colonial cities people traded, public celebrations took place, plays were staged, state proceedings were carried out, laws proclaimed and so on. In most pre-colonial cities in Africa, for example Kumasi, the capital of the Ashanti confederacy, only one such principal square served these purposes thus, no distinction was made between the secular authority and ordinary people.

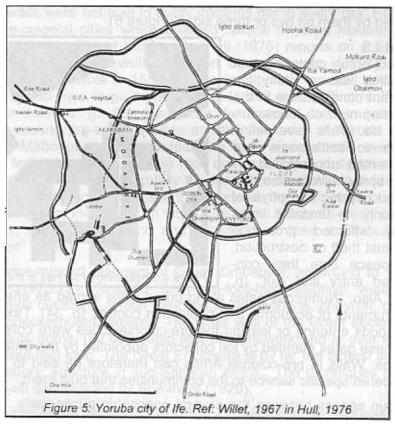
This multiple usage to which space was put was alluded to by a French missionary who spent several decades in Basothuland and described, according to Hull (1976), "Thaba Bosiu in 1833" as a collection of "huts, separated only by narrow lanes, crowded with children and dogs". In the town centre was a vast space where cattle were penned at night in well constructed, perfectly round stone enclosures" (p. 23).

PLAZAS

The most important plaza in the pre-colonial African city was that in front of the king or the chief's palace: it served as the meeting place for the ruler and the ruled. As the main plaza, a great deal of public life took place in it and was of primary importance to social interaction in several pre-colonial African cities.

Centrally placed within most Yoruba towns was the palace of the Oba (Mabogunje, 1968:96), the head of the city administration and the symbol of its urban status. So important was the palace that its grounds occupied an extensive area of land. Opposite the palace was the most important market of the city. This joint location of palace and market in the centre of Yoruba towns was, according to Johnson (1921:32), "a rule without an exception and hence the term *Oloja* (one having a market) used as a generic term or title of all chief rulers of a town be he a King or *Bale*". Some impression of the magnitude of the palace grounds can be gleaned from the description given by some 19th Century travellers to Africa who happened to have witnessed 'planning' in the African way. Of the

palace grounds in old Oyo (Katunga), Clapperton (quoted in Mabogunje, 1968:97) in 1825 noted that it covered "about a square mile ... having two large parks one in front, and another facing the north". Other smaller markets found elsewhere within the town were closely associated with the residences of minor chiefs. Close by the central market was found the fetish temple or the principal mosque of the town. From the palace, market and religious places in the centre, roads radiated to every part of the town and to neighbouring towns (Figure 5).



Fetish shrines in the open plaza of old cities were placed with utmost care. These shrines constituted the embodiment of the religious beliefs held by traditional African people before the advent of Christianity or Islam. The shrines represented little gods who in the belief of their worshippers could not be 'uprooted' or moved around randomly without incurring their wrath. They were placed at the beginning of the building of the city, in positions so well chosen that their placement was calculated to coincide with points in the plaza not touched by traffic, leaving the centre of the plaza free. ⁶⁰ In placing these shrines their worshippers avoided vehicular paths, centres of plazas, the central axis, and the line of sight to main entrances to any other particularly decorative parts of buildings. Shrines in the olden days were not erected as free-standing edifices but were fused to other structures on one side or were encased by them on two or three sides (Figure 6).

WALLS

Hull (1976) contends that "walling was a vitally important consideration in the development of African urban life. Walls gave definitions to settlements and prevented uncontrolled urban sprawl. Walls also provided psychic and physical security. In unstable times they afforded protection against theft or destruction. In peace time they controlled entry and exit" (p.



Figure 6: Positioning of shrines in the past

33). Also: "Numerous gates along urban walls served as effective instruments of economic and population control" (p. 34). Taxation of goods entering or leaving the pre-colonial cities were collected at these gates manned by toll collectors appointed by the Chiefs or Kings. Walls in pre-colonial Africa can therefore be said to have rendered specific service to the communities that built them.

Within spaces between the several concentric public walls, communities developed a well balanced relationship where each was a keeper of the other. Outer city walls were people's (public) walls,

Author's own encounter with the practice of traditional African religion among the Ewes of Ghana.

radiating in concentric circles and the private ones filling intervening spaces like the cells of a beehive. These descriptions by Hull (1976) do not preclude other uses to which walls were put. Several vivid illustrations of walling in Africa are provided by Logan (1936): on the walled city of Kano in northern Nigeria; by Stanley & Neame, (1961): on the magnificence of walled galleries and passageways of the Buganda's royal enclosure; by Davidson (1973): of the Benin City's long and decorated galleries and plazas beyond which lay the King's audience chamber.

City walls were not built in every instance nor in every city. Rulers of pre-colonial cities which boasted natural physical features for their defence did not build walls. Hull (1976) reports on a Portuguese mariner who visited the port City of Gwato in the Benin Kingdom and wrote in 1550 that Benin City had "no wall but was surrounded by a large moat, very wide and deep, which suffices for its defence" (p. 23). Regarding the material used in building walls around pre-colonial cities and the thickness of Yoruba citywalls, Mabogunje (1968) writes: "the walls were usually over fifteen feet (about four metres) high and probably equally broad at the base. With a ditch equally as deep, the town wall provided a good defence against invaders. In general, the walls were built of clay dug from the trench. In stony districts to the north-west, some towns, notably Oke Omo and Ilessan, had their walls built of stones" (p. 99).

Defence-minded planners of Great Zimbabwe, according to Garlake (1973:22), "created thirty-two-foot-high elliptical walls of carefully cut stone, which they laid in herringbone, chevron, cord, and checkerboard patterns. The outer wall of the Great enclosure contains some 182,000 cubic feet of stonework and is over eight hundred feet long. The Great Enclosure is by far the largest single prehistoric structure in sub-Saharan Africa." The techniques used are well documented by Summers (1929).

One interesting aspect of the Great Zimbabwe stone wall was that unlike most stone walling, the early walls were extensions of enormous natural boulders. Wilson (1969) alludes to the contention that the Sotho peoples, who, unlike their other neighbours, lived in large settlements, had excellent stone-building techniques

which spread widely in Southern Africa before the advent of colonialism. Traditional African people used well thought-out procedures and techniques to harness local available materials to build their cities without the need to import any materials from external sources. The ingenuity of the artisans ensured that there was enough innovation available to solve an array of problems, particularly the use of walls for defence (in Ife), aesthetic purposes (Great Zimbabwe) and control of entry of visitors (Buganda).

These city walls were not built purely for the purposes they serve today: exclusion of people from the city. The most important functional reasoning behind them was the control of urban sprawl and therefore the need to share communally, shelter, grazing land, water sources, and the right of passage (birth, puberty, marriage, death). Traditionally, a good amount of mixing of classes occurred in communal land use. The land tenure system of today has resulted in class separation which is in turn reflected in town building. A high level of conservation occurs in the communal usage of facilities and reduces environment pressures (Amankwah-Ayeh, 1995:44). Cooperation, which evolved within the group, is what has kept many African tribes going till today.

PASSAGEWAYS, STREETS AND ROADS

Dwellings were constructed exceedingly close to the each other, but blocks of buildings were separated by avenues or alleys. In some pre-colonial cities such as Kumasi (Ashanti) alleys opened onto broad thoroughfares, broken by pleasant community plazas. One of the early European visitors to Benin City was impressed by the broad ceremonial avenues he saw, and wrote that "the town has thirty ... broad streets, every one of them about one hundred and twenty feet wide" (Roth, 1968:160).

Roads in the kingdom of Buganda, described by Stanley & Neame (1961:73), comprised "very broad avenues, imperial enough in width ... each avenue was fenced with tall matete (water cane) neatly set very close together in uniform rows" and that passageways leading from one avenue to another were narrow and crooked. Roscoe (1969) reports that each sub-chief in the Baganda Kingdom had to maintain in good order a road some 40 yards wide from the capital to his county seat.

'True' arteries, such as highways, exclusively constructed for vehicular uses, as we know them today, were not the same in functional terms in old pre-colonial African cities. They were narrow at best, not for vehicular uses, only pedestrian, for communication and social interaction purposes (Amankwah-Ayeh, 1995:45). The narrowness and infrequency of side streets prevented its continuity from being interrupted too often. Moreover, the winding character of the ancient streets kept sealing off perspective views while offering the eye a new aspect at each succeeding turn. Narrow streets in pre-colonial African cities held special advantages for social interaction, spacial intimacy, a feeling of cohesiveness, group control of local spaces, education and training of the youth, and noise reduction, especially between low density family dwellings in quiet residential areas.

ASSIMILATING FORMER ELEMENTS INTO TOMORROW'S CITY

Several attempts have been made to copy elements from structures of earlier times in the planning of modern cities. Such attempts have, however, rarely been successful and at times have resulted in something far removed from what was originally envisaged.

Planners need to be wary of repeating such mistakes when attempting to interpret the past and the history of town planning in Africa. Attempts ought to be well orchestrated, with due concern for cultural and historical authenticity and should be accompanied by consultation with all stake holders and interested communities. The main concerns ought to be functional need, aesthetic consideration, cost, environmental enhancement and, beyond all, heritage construction for the future generation to emulate.

CONCLUSION

The study of pre-colonial African urban forms reveals that the curvilinear pattern of dwellings, roads or passages, walls and plazas is arguably the most distinctive element of vernacular architecture in the pre-colonial city. The circular forms and spatial arrangement of dwellings of indigenous urban planning in pre-colonial African cities evolved, and were sustained, by factors embedded in African culture.

The study also shows that pre-colonial African towns and cities minimised problems attendant on urbanisation and the feeling of congestion in the cities while making maximum use of urban space. Small open spaces, for example walls, public wells, washing areas, etc., were dispersed throughout the city. Large spaces appeared on the periphery, eg. vegetable gardens etc., while at the centre those were reserved for the King's palace, parade grounds, market, etc. Sudanic and Swahili town and city layouts in particular reveal tight compound clustering.

The 'circular' element is evident in embellishment, in meaning, and in character, and underlies planning conceptions understood and practised by pre-colonial planners in Africa.

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- Fig. 1: Umgungundlovu Dingane's royal elliptical kraal. Ref.: Hull, 1976:24.
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